Equitable and Sustainable Pensions: Challenges and Experience should be on the desk of everyone interested in pension policy. It provides clear descriptions of pension systems in a broad sample of countries around the world, a coherent analytic framework for thinking about them, and thoughtful suggestions for reform in each of them. No reader will agree with every reform suggestion, and not all statistical questions are answered. But every reader’s horizon will be broadened by exposure to the remarkable diversity of answers various countries have given to a common set of questions and by this book’s balanced analysis, which is at once nonideological and sensitive to the values, history, and administrative capability in each country.

Henry J. Aaron
Bruce and Virginia MacLaury Senior Fellow, The Brookings Institution

Creating equitable and sustainable pensions is one of the main policy challenges of the twenty-first century. Policymakers need to be reminded constantly of the challenges that they need to confront. This timely collection of essays by experts in the field offers an analysis of the core issues which is based on rigorous thinking, but presented in an accessible way. It provides discussion of both general issues and specific country experiences which bring these into sharp relief.

Timothy Besley
Professor of Economics and Political Science, London School of Economics

This book provides a very rich coverage and a lot of food for thought on a topic that gets typically limited quality attention in the discussion of pension systems and reforms: equity. Placing it at the same level as financial sustainability and exploring the conceptual underpinnings and country-specific trade-offs that emerged in recent pension reforms closes a critical gap in the international pension reform discourse. Presenting recent country reforms and outstanding challenges from across the world through an equity-cum-sustainability lens offers valuable design and implementation lessons that policymakers and researchers would hate to miss.

Robert Holzmann
Professor and Chair, Old-Age Financial Protection, University of Malaya, Malaysia

This comprehensive volume investigates the equity and sustainability of pensions in a wide range of advanced and emerging market economies in Asia, Europe, and Latin America. The introductory chapters consist of an excellent overview of the volume, a sweeping review of the past and future spending on pensions for both developed and emerging market economies, and a wonderful summary of theoretical considerations. After that, the focus shifts to specific equity issues—the treatment of the poor and of women and the question of equity across generations, all discussed in an international context. The third section presents analyses of individual-country experiences and challenges, often written by academics or policymakers from the region. This volume should be a standard reference for
anyone interested in pension policy. Read the early sections to get an overview of world pension developments and how to think about structuring pensions and then pick and choose among the country studies as the need for examples of successes and failures arises.

Alicia H. Munnell
Peter F. Drucker Professor of Management Sciences, Carroll School of Management, and Director, Center for Retirement Research, Boston College

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Equitable and Sustainable Pensions
Challenges and Experience

EDITORS
Benedict Clements, Frank Eich, and Sanjeev Gupta
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Sustainability and equity stand out as key considerations in the various pension reform debates that are currently underway around the world. For a long time, policymakers have been mindful of the impact of changing demographics, including the implications for the future of pensions. But the recent global economic and financial crisis has made pension reform an even greater priority for policymakers. Two particular factors stand out for me.

First, the crisis has contributed to large increases in public debt in many advanced economies. Pensions are often the largest single expenditure in the budget—in many cases they account for over 20 percent of noninterest government spending. The fiscal policy debate must thus address the sustainability of pension systems, including by containing the growth of pension benefits. Pension reforms can also provide room for other outlays that can boost growth over the longer term, such as public investment. Many governments are therefore working on measures to ensure that their pension system, and the social support it provides, is sustainable over the long run. Additionally, many emerging market economies are addressing the low level of pension coverage, and their main challenge is to expand it in a fiscally sustainable way.

A second important impact of the crisis is the heightened awareness of equity considerations. Citizens and their governments in many parts of the world have become more concerned about inequality and more mindful of fairness, including between different generations. Intergenerational equity—which has always been a key part of the pensions debate—has therefore assumed even greater prominence following the crisis.

Despite the growing interest in inequality, relatively little work has been done on the equity aspects of pension reform. I very much welcome this book because it helps fill this void by exploring the challenges and experience of countries in designing sustainable and equitable pension systems. It draws on work by the IMF’s Fiscal Affairs Department that was presented to the institution’s Executive Board in January 2012. It also includes several chapters that were prepared by experts outside the IMF for recent conferences held in Vienna and at the IMF’s Regional Office for Asia and the Pacific in Tokyo. The book addresses both general considerations in designing sustainable and equitable pension systems and the lessons from 12 country and regional studies.

Pension reform is complex, and often involves trade-offs between competing goals. There are also different views on what is meant by an “equitable” or a “fair” pension system. By providing a wide-ranging discussion of different perspectives on the sustainability and equity of pension reforms, this book contributes, I hope, to the debate and provides guidance on one of the most important fiscal policy challenges of our time.

Christine Lagarde
Managing Director
PART I

The Outlook for Public Pension Spending and Key Equity Issues
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CHAPTER 1

Equitable and Sustainable Pension Systems

BENEDICT CLEMENTS, FRANK EICH, AND SANJEEV GUPTA

INTRODUCTION

Pension reform is high on the agenda of many advanced and emerging market economies, for many reasons. First, public pensions often constitute a large share of government expenditure. In light of the substantial fiscal adjustment needs of many economies, a discussion of how much countries can afford to spend on pensions—and how important it is to preserve pension spending relative to other expenditures—is inevitable. Second, population aging means that reforms would be needed just to keep pension spending from rising in the future. Third, in many economies, low or falling pension coverage will leave large segments of the population without adequate income in old age and at risk of falling into poverty.

The Great Recession of 2009 weakened the fiscal positions of many advanced and emerging market economies and underscored the need for credible medium-term fiscal adjustment plans, including reforms of health and pension systems (IMF, 2010). The advanced economies and emerging Europe face the dual challenges of improving the sustainability of their pension systems while maintaining adequacy. In other emerging market economies with younger populations and smaller fiscal adjustment needs, the challenge is different: improving pension adequacy and coverage while maintaining sustainability. A number of economies also face the problem of strengthening their private, mandatory pension systems, which have failed to deliver the expected returns to contributors and left a legacy of high transition costs that has been borne by government budgets (World Bank, 2006).

Pension reforms involve trade-offs: providing adequate pensions to all may have substantial costs and weaken fiscal balances; using the pension system to redistribute income toward those with lower incomes (by giving a higher level of pensions relative to their wages) can have adverse labor market effects by weakening the incentives for high-income workers to contribute; reducing long-term public pension liabilities by shifting workers and their contributions to private pensions can increase budget deficits in the short and medium terms; and

The authors wish to thank Csaba Feher for his help in drafting this chapter and Mauricio Soto and Masahiro Nozaki for insightful comments on earlier drafts.
Equitable and Sustainable Pension Systems

increasing reliance on private sector pensions may reduce fiscal burdens in the longer term but shift risks to workers. All of these trade-offs raise important issues of equity and fairness.

Since 1990, governments in both advanced and emerging market economies have made a number of reforms to pension systems that have improved their fiscal sustainability (European Commission, 2012) and helped offset the adverse fiscal effects of aging populations. This contrasts with the approach to health care, where significant reforms have yet to be made in many countries (Clements, Coady, and Gupta, 2012). These pension reforms have sharply curtailed pension eligibility and benefits for future generations of retirees, and have brought to the fore equity concerns. Although a number of studies have assessed the effects of pension reforms on fiscal sustainability, a systematic analysis of equity issues in pension systems—and how countries have grappled with these issues—has yet to be undertaken. The purpose of this volume is to describe the equity effects of reforms induced by fiscal concerns and, likewise, to discuss the fiscal consequences of achieving different equity goals.

The remainder of this chapter first discusses pension reform challenges, then the effects of pension reform measures on both fiscal sustainability and equity. Finally, it briefly summarizes the main messages from various contributions to this volume.

PENSION REFORM CHALLENGES: AN OVERVIEW

Pension systems in advanced and emerging market economies will need to adjust to evolving demographic developments to remain fiscally sustainable. They will also need to take account of changing socioeconomic circumstances and attitudes to ensure that they are perceived as equitable both within and across generations.

Demographic Trends

In advanced economies, life expectancy at age 65 is projected to increase from 18½ years in 2010 to 20 years in 2030, and 22 years by 2050 (United Nations, 2013). In emerging market economies, it is projected to increase from 15½ years to 17 years in 2030, and then 18½ years by midcentury. During the same period, total fertility rates (TFR; the total number of children per woman) are projected to remain below replacement levels in many advanced economies, with the average projected to increase from 1.7 in 2010 to 1.9 by 2050. In emerging market economies, TFR is projected to fall from 2.4 to 2.1 by midcentury.

These averages mask significant variations across economies. For example, while TFR is projected to remain about 2.0 (and thus very close to the natural replacement rate of 2.1) in France and the United States, and just below that in Australia and the United Kingdom, it is projected to be much lower—about 1.6 to 1.7—in Germany and Japan. These differences, if they materialize, will have profound implications for the size of the total and working-age populations and age structure of the population. Migration is the third demographic trend that
could affect the total size and age structure of the population, although it is likely to be a significant consideration in a limited number of economies (United Nations, 2013).

In advanced economies, the increase in life expectancy, combined with less-than-replacement fertility rates, is projected to lead to a doubling of the old-age dependency ratio (the number of people age 65 and older divided by the number of people between 16 and 64 years old) to about 48 percent by midcentury. In emerging market economies, where fertility rates are falling but projected to remain above the replacement rate, the ratio is also set to increase and reach 32 percent by 2050 (Figure 1.1).

**Socioeconomic and Attitudinal Changes**

A number of socioeconomic developments and changes in societal attitudes are posing new challenges to pension systems. These challenges include evolving family structures, such as the shift from multigeneration families to single households in the context of rural-urban migration in emerging market economies, the rising share of couples who remain unmarried in advanced economies, and the changing role of women in the labor market. These developments have an important bearing on the equity of pension systems. These trends have gone hand-in-hand with changing attitudes about who should support the elderly in retirement and how pension systems should compensate women for missing contribution years as the result of motherhood or other caring activities (Istituto per la Ricerca Sociale and Fondazione Brodolini, 2011). In the coming years, public pension systems—indeed, the welfare state and tax system more generally—will also need to adapt to the emergence of civil partnerships or same-sex marriages in an increasing number of economies, as has already happened in the United Kingdom (Thurley, 2013) and the United States (United States v. Windsor, 570, U.S. 12–307 (2013)).
Pension arrangements for public sector workers vary widely across countries, with different implications for labor market mobility across sectors (Palacios and Whitehouse, 2006; Eich, 2009). The changing nature of working careers will also have implications for pension systems. Young people stay at school longer and enter the labor market later. Consequently, parametric reforms (including retirement age increases) have to compensate not only for increases in longevity but shorter contribution histories. Pension arrangements could affect the efficiency of the labor market if they create disincentives for individuals to move between employers or sectors. They could also affect equity if individuals with similar characteristics accrue different pension benefits.

PENSION REFORMS: CONSIDERATIONS IN CHOOSING OBJECTIVES

Pension systems and their reforms should aim to provide adequate and fair pensions in a fiscally sustainable manner (Box 1.1). A contributory pension system’s viability also hinges on workers’ willingness to participate and contribute, which,

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1Pension arrangements for public sector workers vary widely across countries, with different implications for labor market mobility across sectors (Palacios and Whitehouse, 2006; Eich, 2009).
Pension liabilities may be measured in different ways. All measures include the value of expected benefit payments to people who are already retired. Accrued-to-date liabilities also cover the expected value of pensions earned, that is, benefits based on service time already accumulated and contributions paid up to the time of measurement. If future benefits based on future contributions are included (but only for people already in the labor force), this measure is usually referred to as a closed-group liability, whereas the inclusion of new labor force entrants (and generations yet unborn) result in an open-group liability (Barr and Diamond, 2008).

Sustainability

The most advanced approach to assessing sustainability draws on the concept of the intertemporal budget constraint (Buiter, 1983). For a contribution-based pension system that does not rely on any transfers from the central government budget, the present discounted value of future surpluses (contributions minus future accruals) must equal net pension liabilities.\(^2\)

Sustainability can also be defined by the ability to pay benefits when they fall due. There is no single benchmark for this definition of sustainability, but a good proxy for this is the pension system balance as a share of GDP. If pension deficits are large because of rising expenditures and falling contributions, the level of expenditures may not be sustainable. This assessment should also take account of the general government’s aggregate fiscal sustainability and its capacity to finance (via transfers or issuance of debt) the pension system. For countries with large general government deficits and fiscal adjustment needs, even a small pension deficit may not be sustainable, even though the pension system is consistent with the intertemporal budget constraint in the longer term.

Finally, sustainability can also be assessed in relation to current and future public pension spending as a share of GDP or primary spending. Too high a share could be considered unsustainable because it crowds out more productive government spending such as education or capital expenditure, or results in an increase in taxation (including on wages) to a level that is counterproductive to growth.

Any assessment of pension reforms must take a long-term view of the effects of policy measures. Traditional deficit and debt indicators fail to capture the future impact of changes in fiscal policies on long-term fiscal balances. This weakness is evident in the treatment of structural pension reforms involving the shift of contributors from public to private pension systems. These reforms can potentially strengthen the fiscal outlook by reducing public pension payments, but only in the longer term. Meanwhile, they immediately reduce public sector revenue because contributions are diverted to the private sector, with adverse effects in the short and medium terms on fiscal balances and government debt. This asymmetry has raised concerns that assessments based on traditional indicators could create incentives to delay or even reverse pension reforms. Soto, Clements, and Eich

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\(^2\)Pension liabilities may be measured in different ways. All measures include the value of expected benefit payments to people who are already retired. Accrued-to-date liabilities also cover the expected value of pensions earned, that is, benefits based on service time already accumulated and contributions paid up to the time of measurement. If future benefits based on future contributions are included (but only for people already in the labor force), this measure is usually referred to as a closed-group liability, whereas the inclusion of new labor force entrants (and generations yet unborn) result in an open-group liability (Barr and Diamond, 2008).
Equitable and Sustainable Pension Systems

The internal rate of return on contributions is the interest rate that equates the value of total contributions over the work life to total expected benefits at the time of retirement. (2011) provide a framework for measuring the fiscal health of pension schemes and propose a new indicator (the pension-adjusted budget balance) that can be used to assess the effect of pension reforms on long-term fiscal sustainability.

Equity

Beyond assessing the effect of net taxes paid by future generations—and thus measuring one aspect of intergenerational equity—relatively little literature considers equity in the design and reform of pension systems. The issue comes down to a seemingly simple question: how strong should the correlation be between contributions and benefits? Assuming that workers’ contribution histories are, in some way, a reflection of individuals’ different life-paths as influenced by family background, education, work history, gender, health status, and sheer luck, the question becomes, how well should welfare, late in life, correlate with what happened during an individual’s active years?

Equity is also about fairness and is derived from one’s concept of social justice. This approach can be thought to represent “a belief that there are some things which people should have, that there are basic needs that should be fulfilled . . . and that burdens and rewards should not be spread too divergently across the community” (Falk, 1993, p. 2). The definition of equity is not straightforward, however—as Kaplow (2000, p. 22) observes, “equity should not be measured and new measures of social welfare should not be deployed until we know what we want to measure and why.” Furthermore, an equitable pension system does not necessarily entail rewarding equal inputs (work history, career earnings, and the like) with the same output (benefits)—one of the main reasons for the state’s involvement in providing pensions is to pool longevity risk and redistribute risk and income.

Intragenerational equity: Horizontal versus vertical aspects of equity

Broadly speaking, horizontal equity requires that individuals in similar circumstances should be treated similarly, whereas vertical equity requires treating individuals according to their needs (McDaniel and Repetti, 1993). In other words, horizontal equity does not require redistribution across individuals of differing means, while vertical equity may.

When considering pension systems, these notions may be best captured by a comparison of uniform internal rates of return on contributions (horizontal equity) against returns that are differentiated by recipient characteristics (vertical equity). The latter case applies when governments use the pension system to ensure an adequate income for low-wage earners, who would otherwise fall into poverty if they received the same income replacement ratio as the average worker. Pension rules that aim for horizontal equity will thus entail less redistribution.

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3The internal rate of return on contributions is the interest rate that equates the value of total contributions over the work life to total expected benefits at the time of retirement.
than ones that are vertically equitable. The more heterogeneous individuals’ careers and economic positions are, the greater the redistribution difference becomes between systems striving for vertical rather than horizontal equity.

As noted earlier, under horizontal equity, individuals who have made similar contributions to a pension system would be entitled to similar pension benefits. Given longevity risks, this requirement would only hold before the fact—thus, pursuing the goal of horizontal equity would require actuarial calculations based on lifetime contributions and gender-specific mortality tables. One advantage of such an arrangement is that individuals might perceive an actuarially fair pension system to be more of a savings vehicle than a government transfer, which provides them with incentives to participate in the scheme and minimizes labor market distortions. Pursuing the goal of vertical equity requires redistribution within the pension system, which may violate the concept of actuarial fairness and might be more distorting from a labor market perspective (Disney, 2004). Yet this could still be perceived as welfare maximizing because of the value society places on equity goals. One option countries can adopt to pursue these equity goals and avoid labor market distortions is to use the general government budget, for example, by offering tax-financed social pensions to ensure that low-income workers receive adequate pensions.

Intragenerational vertical equity is affected by numerous factors, the most important of which is coverage. Effective coverage determines access to pension benefits—thus, even if a pension system is internally equitable, it may exacerbate income inequality if coverage is limited to certain sectors. In most advanced economies, coverage is high, but in many emerging market economies it is not; often only public sector employees (e.g., civil servants, armed forces, and teachers) and some formal sector workers—who earn wages above the economy-wide average—benefit from the existence of such schemes. The first step toward greater equity would therefore be the achievement of near-universal coverage.

Gender, which influences lifetime labor market opportunities, remains a major source of differences in old-age welfare. Women’s age-specific labor force participation rates differ from those of men for a number of reasons, including because the traditional division of labor leads to long absences from work to raise children and care for the elderly. Shorter contribution histories result in lower benefits unless explicit compensatory measures are introduced (such as higher replacement rates, shorter minimum eligibility contribution histories, or the recognition of time spent caring for children). Gender-specific longevity differences exist in all societies and have the opposite effect: women live longer, so similar benefits based on the same active career will result in higher total pension wealth.

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4One example of a pension arrangement that would violate horizontal equity is a defined-benefit pension based on final salary. In such a system, two individuals with the same lifetime average earnings and hence lifetime contributions would be entitled to different benefits if their wage progressions followed different paths with one individual having a higher final salary than the other.

5Actuarial fairness requires that the present value of lifetime contributions equals the present value of expected lifetime benefits.
Equitable and Sustainable Pension Systems

Differences in the sector of employment often introduce variations in job security, contribution periods, and pay levels, with consequences for pension benefits. The availability of part-time employment and other flexible arrangement also affects both coverage and contribution intensity: the more flexible labor regulations are, the fewer people need to make a choice between full-time formal employment, full-time informal employment, or withdrawal from the labor market. These decisions directly influence coverage, compliance, and the opportunity to accrue pension entitlements.

**Intergenerational equity**

One perspective on intergenerational equity is that the burden of financing the pension system, and the benefits paid, should be spread fairly across successive generations. This burden-sharing concept, however, may have different interpretations: on the one hand, it could be argued that it would be fair to shift a larger absolute burden onto successive generations because they will generally be better off as GDP per capita rises over time. On the other hand, fairness could be interpreted as meaning that all generations should face the same relative burden, such that the proportion of income to be transferred to the pension system remains stable.

Intergenerational equity considerations will likely matter most in societies with rapidly rising old-age dependency ratios. Conversely, in economies in which the financial burden of providing pension benefits can be distributed across a growing number of working-age individuals, the issue might not be as acute.

**Pension Reform Measures and Their Impact on Sustainability and Equity**

This section examines some of the most common reform measures implemented during the past three decades and their impact on sustainability and equity. The discussion first covers parametric reforms, typically designed to improve the fiscal sustainability of PAYG systems. It then examines structural reforms, focusing in particular on the introduction of defined-contribution systems and social pensions. Finally, it discusses governance aspects of pension systems that can have an impact on sustainability and equity.

**Parametric Reforms**

**Raising retirement ages**

Increasing retirement ages remains an effective instrument for improving sustainability. First, higher retirement ages promote higher employment levels and economic growth. By increasing lifetime working periods and earnings, raising

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the retirement age also boosts the growth of real consumption, even in the short term (Karam and others, 2011). Second, raising the retirement age helps avoid even larger cuts in replacement rates (the ratio of the average pension to average wage) than those already legislated in many countries, thus reducing the negative impact of reforms on old-age poverty. Third, increases in the retirement age are easier to explain to the public in light of increasing life expectancy.

Many countries have room for more ambitious increases in retirement ages. As discussed above, in advanced economies, the number of years men are expected to live beyond age 60 is projected to increase by an average of five years between 1990 and 2030. In contrast, the average statutory retirement age is being increased by only one year during this period. To better address increases in longevity, statutory retirement ages in advanced economies could gradually be raised to 67 by 2030 (as already legislated in a number of countries) and indexed to life expectancy afterward. Automatic adjustment mechanisms appear to be attractive because they reduce the need for political action if and when circumstances change.

To translate increases in the statutory retirement age into higher effective retirement ages, steps would need to be taken to increase employment at older ages by limiting early retirement—for example, by decreasing (financial) incentives to do so (Queisser and Whitehouse, 2006) and by promoting lifelong learning and retraining. Early retirement can also be reduced by controlling alternative pathways to retirement, such as disability pensions (OECD, 2006), and by limiting special rules for early retirement granted to some occupations. Currently, individuals claim pensions about four years earlier, on average, than the statutory age in Organization for Economic Cooperation and Development (OECD) countries.

Increasing retirement ages raises important equity issues. Higher socioeconomic status—often approximated in the literature by years of education—is positively correlated with life expectancy and is an important determinant of career earnings, wealth, and financial literacy. Thus, the more educated and affluent tend to live longer and have more flexibility in electing their time of retirement from the labor market. Raising the statutory retirement age can have different impacts on the effective retirement age of people with different economic means: the less-well-off are more likely to need to keep working than the better-off. Also, given different life expectancies, pensioners of lower socioeconomic status will receive their pensions for a shorter period. Furthermore, recent improvements in life expectancy have been greater for the well off (National Research Council, 2011), that is, the life expectancy differential is growing in many countries—especially if large income inequalities exist.

\footnote{Large regional differences exist across countries, not only for life expectancy at retirement but for the speed and even the direction of changes in life expectancy (Leon, 2011). In Russia, for instance, average life expectancy has declined since the 1990s.}

\footnote{In the United States, life expectancy at 65 increased by five years for people in the top half of the earnings distribution between 1982 and 2006, whereas the increase was only one year for those in the bottom half (Waldron, 2007).}
Pension reforms should be accompanied by measures that protect the income of those who cannot continue to work. In the United States, for example, about a quarter of all workers in their sixties may find continued work difficult on account of disability or poor health (Munnell, Soto, and Golub-Sass, 2008). Consideration could be given to offsetting measures to maintain the progressivity of pensions, such as reducing replacement rates for upper-income households.

Increasing other eligibility criteria, typically the number of service years required for a full contributory pension, is expected to lengthen the time spent in formal employment and can complement measures to raise the retirement age. It is most attractive if a high share of the labor force is engaged in employment in the formal sector. In the longer term, increasing the time spent in employment can both reduce the number of retirees and boost the average pension that is earned, given that the pension would be based on a longer contribution history.

**Reducing replacement rates**

Another reform option is to reduce the replacement rate. This measure is most attractive for systems in which replacement rates are high and reductions would not jeopardize the objective of reducing old-age poverty. Replacement rates can be reduced by a number of methods, including the indexing of benefits to prices (rather than wages) or changing the base upon which pensions are determined (lifetime earnings versus earnings in the later working years).

Another option for effectively reducing pension replacement rates is to equalize the taxation of pensions and other forms of income—many advanced economies tax pensions at a lower rate (IMF, 2012). Similarly, countries that subsidize private pensions, either through tax relief or matching contributions, could consider scaling back these subsidies, which often have very little impact on national saving and benefit mostly higher-income households (European Commission, 2008). Changes in replacement rates give rise to a number of equity considerations and may involve trade-offs with other objectives. For example, cutting replacement rates may lead to an increase in poverty. This outcome can be avoided by ensuring that replacement rates for low-wage workers are adequate from the poverty-reduction perspective. If replacement rates do not rise with years of work, however, it may create an incentive for early retirement (Queisser and Whitehouse, 2006).

**Raising contributions**

Increasing revenues could also help offset increases in pension spending, so could play a role in consolidating the public finances in the future. This role is particularly likely in countries in which there may still be room to raise payroll contribution rates or introduce payroll taxation. However, higher contributions may have an adverse effect on employment, labor force participation rates, and competitiveness. The direct net impact of this measure depends on the extent to which higher contributions are reflected in higher pension entitlements and benefit expenditures, while the total net fiscal effect should also take into account the broader
Longer benefit assessment periods can also reduce the dispersion of benefits in a defined-benefit scheme that come from lifetime earning differentials: benefits based on lifetime average earnings are a fairer reflection of the lifetime earnings differential than final salary pension schemes. In general, the shorter and closer to retirement the assessment periods are, the more distortional the benefit assessment rules tend to be.

**Structural Reforms**

*Introducing private defined-contribution pensions*

Structural pension reforms generally change the relative importance of defined-benefit and defined-contribution pension systems. Defined-benefit arrangements are the most common in public pension systems. Under a defined-benefit scheme, the contributor earns a right to a benefit based on either the last year’s salary or lifetime earnings after a certain number of qualifying contribution periods. These schemes are highly flexible. Accrual rates may or may not be actuarially neutral and can vary according to a worker’s wage history and wage level, allowing for redistribution. Consequently, defined-benefit pension schemes are well suited to serving vertical equity goals.

Under a defined-contribution scheme, pension benefits are based on contributions (and the return on these contributions) and there is typically no redistribution toward low-income earners. Moving toward a defined-contribution arrangement can potentially reduce vertical equity but increase horizontal equity, because less redistribution occurs.

**Social pensions**

As mentioned above, social pensions (a universal, equal pension for the elderly) can be an effective option for expanding coverage and achieving vertical equity. A noncontributory, flat pension can ensure that all citizens, regardless of earnings or occupation, have an income in old age. By cutting the link between paid, formal employment and income in retirement, noncontributory pensions are helpful to women and to workers in the informal sector. For people in low-income, informal jobs, noncontributory pensions may be even better than attempting to enforce participation in earnings-related contributory schemes. The distributional effect of a flat pension depends on whether it includes any targeting mechanism (including a clawback through taxation).

The cost of social pensions can be significant at about ½ percent of GDP (Holzmann, Robalino, and Takayama, 2009). The expansion of noncontributory benefits can also weaken incentives for workers to participate in contributory pension systems and reinforce labor market informality (Levy, 2008; Levy and Schady, 2013). This suggests that the level of noncontributory pension benefits is
an important consideration, and should be moderate to avoid both high fiscal costs and adverse effects on the labor market.

**Improving the Effectiveness and Transparency of Pension Governance**

Good governance is crucial to ensuring that the financial management of pension systems is consistent with the best interests of contributors and society as a whole and perceived as fair. Thus, publicly managed pension schemes with reserves (either defined benefit or defined contribution) and public sector pension schemes deserve particular attention. Governments have strong incentives to divert reserves into financing public debt or expenditures, which may lead to low rates of return on contributions. Principal-agent problems in the management of these funds are manifold: the decision-making bodies and management of universal social security pension schemes may favor the government’s fiscal interests more than scheme members’ vested rights. In many emerging market economies, dual standards arise: whereas civil service pension schemes are generous, legally well protected, and represent a significant draw on the public purse, general social insurance schemes are underresourced and poorly managed. Governance reform involves establishing clear rules of delegation or election of scheme trustees, accounting and reporting standards, and liability and appeals provisions.

Additional issues surface if public pension schemes operate with reserves: returns may not reflect actual investment performance but an administratively set long-term average that may be lower than the actual returns. Because the state’s capacity to regulate itself is questionable, the role of external trustees and board members is crucial, as is the publication of investment returns and other performance indicators. If the rule of law is strong and parliament can effectively control the executive, then high-level legal (potentially constitutional) restrictions on scheme governance, including investment strategies (such as limitations on domestic public debt holdings and bank deposits) may help prevent conflicts of interest and politically motivated investment decisions. Governance reforms need to focus on ensuring that the sole objective of public pension funds is to provide affordable and sustainable retirement income, trustees or governors should be independent from political power and fit and proper for their role, trustees or governors should be made accountable for the performance of the scheme, and independent performance evaluations (investment, audit, actuarial, and other) and outside experts should be called on regularly in the definition and implementation of fund policies and the review of their execution (Impavido, 2002).

An effective regulatory framework is important when private pensions are prevalent because it also affects equity aspects of pension systems. Regulatory agencies must exercise oversight of subordinated service providers to ensure efficient and transparent operation. It has been observed that total costs and charges for

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10 This is one way in which defined-benefit civil service pension schemes could become underfunded, if the government replaces reserves with explicit guarantees.
private pensions (administrative and collection fees, asset management related charges, and so forth) tend to be higher than in other investment services. Both the design of the pension system and regulations governing private schemes are crucial. Some practices—such as the use of blind accounts and centralized account management (as in Sweden)—help realize scale economies, reduce the room for marketing and related expenses, and promote greater individual responsibility for portfolio choice. Regulatory actions, such as placing ceilings on asset management fees; promoting common administrative platforms; and limiting the timing, content, and distributional channels of marketing, may also contribute to lower costs.

ORGANIZATION OF THIS BOOK

This volume consists of three parts. The second chapter in Part I provides an analysis of historical trends in public pension spending and projections for these expenditures for advanced and emerging market economies. Part II focuses on the design of equitable and sustainable pension systems, including the role of the private and public sectors. Part III comprises cross-country and country-specific case studies of pension systems, the challenges they face, and the reform options available to address these challenges.

Part I. The Outlook for Public Pension Spending and Key Equity Issues

Understanding past trends in public pension spending and the projected evolution under unchanged policies is critical for assessing the magnitude of the public pension reform challenge across countries. Chapter 2, by Eich, Soto, and Feher, presents these trends and projections in advanced and emerging market economies. It finds that public pension spending increased from 5 percent of GDP in 1970 to about 9 percent in 2010 in advanced countries, owing to population aging, increases in pension eligibility, higher replacement rates, and falling labor force participation rates. Projections for public pension spending out to both 2030 and 2050, incorporate the impact of recent pension reforms. Public pension spending is projected to increase by about 1½ and 1 percentage points of GDP during the two decades up to 2030 in advanced and emerging market economies, respectively. The projected public pension spending increases would be significantly higher had reforms not already been enacted over the past two decades in advanced economies.

Part II. Designing Equitable and Sustainable Pension Systems

In Chapter 3, Barr discusses the basic objectives of the pension system from the perspective of the individual—whose aims are consumption smoothing and insurance

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11 For blind accounts, service providers do not know their clients and cannot, therefore, target them with marketing campaigns or direct agents to particular groups of pension scheme members. In Sweden, individual accounts are administered centrally and asset managers compete for segments of the portfolio and not for individuals.
against the loss of earning capacity and outliving one’s savings—and from a public policy perspective of poverty alleviation and redistribution. The instruments for achieving these welfare objectives should be designed holistically, taking into consideration fiscal and institutional constraints, labor market and other externalities, the asymmetric and imperfect access to information available to individuals and to corporate and government entities, as well as the practical limitations on what economic theory views as rational behavior. Awareness of these constraints should inform policymakers in their choice of reform options. It should also help rule out solutions that may be theoretically appropriate but that, in practice, do not result in the expected outcomes. The funded reforms in most east European countries are an example of pension reforms underperforming because of both unrealistic expectations and suboptimal design and implementation. Of the theoretically available design characteristics, policymakers should choose the ones that best suit a country’s specific circumstances: no one single solution will fit all countries. A system with a significant private element, for example, individual accounts, could make sense in a country that gives poverty relief a relatively lower weight, and where individuals are not excessively risk averse but trust both financial market players and the government to regulate the accounts effectively. A system with stronger direct government involvement is suitable for countries that give social solidarity and risk sharing greater weight, and where government failure is perceived to be a smaller risk than the conduct of financial markets.

Barr also offers lessons learned in the course of pension reform. Once the appropriate pension paradigm and structure are selected, implementation determines whether the reform will be successful: financial and technical capacity to manage transition costs and the complexities of administering individual accounts is crucial. Regardless of the actual structure of the pension system, effective governance is critically important for operating and regulating pension schemes, even voluntary ones. He also cites promising new pension designs that have emerged in the recent past: introducing noncontributory basic pensions that strengthen poverty relief and make it simpler to separate the poverty-alleviation from the consumption-smoothing functions of the system; coupling higher retirement ages with flexibility, so that people can choose their own retirement age as long as they do so in a fiscally neutral manner; introducing regulatory changes into privately managed defined-contribution arrangements—such as automatic enrollment, keeping portfolio choice simple and aided by default options, keeping administrative costs low—that make them transparent and more efficient; and introducing notional defined contribution accounting into PAYG pension schemes.

Finally, based on both theoretical considerations and international practice, Barr enumerates mistakes to be avoided and factors to be considered. In the author’s view, pension reforms should not be introduced in a piecemeal fashion and in haste but in a strategic manner, taking into consideration implementation capacity; mandatory, earnings-related schemes should be introduced only if robust recordkeeping capacity is in place; individual funded accounts should only be introduced if the market and the regulatory capacity for investment, accumulation,
and annuitization exist. Countries should also consider transition costs and their impact on fiscal sustainability. The two most important factors for successful reform, according to Barr, are good governance and economic growth. An effective government will be able to implement PAYG pensions responsibly and to maintain the macroeconomic stability and regulatory standards on which funded pensions depend. Output growth makes it easier to finance PAYG pensions by broadening the contribution base, and for funded pensions to deliver planned living standards in retirement by ensuring that output is sufficient for pensioners to buy without causing price inflation or asset market deflation.

Limited research is available to determine the potential impacts of declining public pension replacement rates on elderly poverty. Chapter 4, by Shang, uses a reduced-form panel data approach to estimate the relationship between public pension replacement rates and elderly poverty, and finds an elasticity of about −0.4. This elasticity implies that the projected declines in public pension replacement rates under recent pension reforms could have a sizable impact on elderly poverty, assuming future social protection systems remain similar to those of the past. In addition, the analysis indicates that the elderly poor are likely to be less educated, and that poverty rates tend to be higher for elderly women than for men.

The findings suggest that measures are needed to mitigate the future adverse impact of recent pension reforms on the financial well-being of the elderly. The most direct approach is to better target social protection benefits—pension benefits in particular—to the poor. Efforts could also be made to increase coverage of voluntary pensions and other private savings for the low skilled and less educated, for example, through automatic enrollment in voluntary pension plans. The incomes of the elderly poor could also be bolstered by increasing their labor force participation. A number of barriers to old-age employment will need to be overcome to increase the participation of the elderly in the workforce, including biases against older workers, limited employment and training opportunities, and high employment costs. Measures that can help address high poverty among elderly women include increasing replacement rates for survivors’ pensions.

In Chapter 5, Takayama assesses how different types of pension arrangements—PAYG defined benefit, funded defined-benefit occupational, notional defined contribution, and funded defined contribution schemes—stack up with regard to intergenerational equity. Regardless of the type of pension system, Takayama argues that intergenerational equity might matter if younger cohorts are forced to shoulder excess burdens created by preceding generations. But he also asserts that the issue might not become acute as long as successive generations enjoy rising living standards. If their living standards do not increase, younger cohorts might withdraw their support for the system. This is a particular issue for a PAYG defined-benefit system, which relies on the intergenerational transfer from the working-age population to the elderly. Turning to the other types of pension arrangements, Takayama finds a number of intergenerational equity issues. For example, younger cohorts in occupational funded defined-benefit plans have been faced with wage cuts and increased redundancies at the same time that
scheme sponsors have struggled to deal with unfunded liabilities resulting from disappointing investment performance.

Pension systems could be designed to reduce the gender gap, that is, to treat men and women more equitably. In many countries, women are disadvantaged in the wages and salaries they can earn. A public pension system can partially compensate for this disparity by offering relatively more generous pensions to low-income workers, financed by higher contributions from middle- to higher-income earners. Similarly, women who engage in childrearing or care for the elderly can expect to receive lower old-age pensions unless the pension system offers contribution credits for these activities, either financed from general taxation or from redistribution within the pension system itself.

In Chapter 6, Jackson explores attitudes toward the respective roles of the individual and the state in pension provision, based on a survey of six countries (China, Hong Kong SAR, Korea, Malaysia, Singapore, and Taiwan Province of China). The motivation of the chapter is the observation that policymakers often assume that the retirement needs and preferences of tomorrow’s retirees will be much the same as those of today’s. This assumption is faulty in all societies, because new generations always bring with them new expectations shaped by their life experiences. But the assumption is especially questionable for emerging East Asia, where the generation gap between 30-year-olds and 60-year-olds now yawns wider than anywhere else in the world. During the next several decades, retirement in East Asia will be transformed by socioeconomic changes and the erosion of traditional values: the role of informal family support networks will recede and the role of formal government or market substitutes will grow.

Although the survey reveals that the extended family continues to play a far more important role in retirement security in East Asia than it does in the West, it also suggests that the traditional “Confucian ethic” expectation that families should support their own elderly members is rapidly crumbling. Only a small minority of respondents in each country believe that grown children should have primary responsibility for providing income to retired people. Moreover, looking ahead to their own future retirement, current workers do not expect to receive the same level of support from the extended family that current retirees do. Current workers’ declining expectation of receiving income from the extended family is in line with their growing expectation of receiving alternative sources of retirement income. The survey also points to an expected increase of income from financial assets. With regard to retirement age, policymakers should consider abolishing the early mandatory retirement ages that are enforced in the formal sectors of most countries in emerging East Asia. As life expectancy increases, early retirement is becoming more and more expensive to finance. As workforces grow more slowly and begin to contract, economies may also face mounting labor shortages. At the same time, the higher educational attainment and accumulated human capital of today’s working generations renders later retirement ages feasible.

In Chapter 7, Kashiwase and Rizza examine the equity consequences of pension reforms in Italy, Japan, and the United States using generational accounts. All three countries introduced reforms in the past 30 years to address the financial
imbalances of their public pension systems. The reforms, however, had different effects on intergenerational equity as measured by net taxes paid by subsequent cohorts.

In the United States, reforms leaned toward revenue-side measures and maintained the net tax position of current retirees relative to future retirees: generational inequity is minimal. In Italy, pension reforms, especially the measures implemented in the 1990s, introduced sizable intergenerational inequities, induced by the slow transition to the new rules and generous grandfathering arrangements. In Japan, similarly to Italy, the reforms of the first decade of the 2000s increased generational inequity given that current and future contributors will receive smaller benefits relative to their contributions than do current pensioners.

The authors show that parametric adjustments designed to address fiscal issues can have profound effects on intergenerational equity. The larger the intended reduction in net pension liabilities, the more difficult it is to introduce the adjustments in an equitable manner. The authors suggest that a possible instrument for reducing negative distributional consequences is to claw back a part of current retirees’ benefits, while protecting the economically vulnerable elderly. The authors argue that delaying reforms increases fiscal tensions, necessitating even larger adjustments in the future that will be all the more difficult to design in a manner that is consistent with intergenerational equity.

Drahokoupil and Domonkos, in Chapter 8, assess the fiscal implications of structural pension reforms in central and eastern Europe (CEE) and ask whether the effort has been worth it. CEE countries were among the pioneers in introducing mandatory privately funded schemes into their pension systems. Their approaches to pension privatization, however, diverged widely in the wake of the economic crisis: Hungary de facto nationalized its mandatory pension funds, while Poland, the Slovak Republic, and the Baltic countries either permanently or temporarily reduced contributions to their private schemes. By contrast, the Czech Republic implemented pension privatization during that period. The authors argue that the crisis was only one factor contributing to this policy change; countries were also reassessing the costs and benefits of the initial reforms based on the lessons learned over a decade.

Studying the policy debates in the countries, Drahokoupil and Domonkos observe that the learning process has changed the rationale behind privatization of pensions, with the argument for diversification now taking prominence over the previously widely held view that the introduction of funded schemes could resolve the fiscal pressure of demographic aging. This change has taken place because the issue of financing the funding gap caused by the diversion of contributions from the public pension system to private schemes is now more accurately understood. In the initial reforms, the funding gap was underestimated on the basis of a mistaken argument that explicit debt can be ignored because it replaces implicit debt.

The authors contend that the importance of the “diversification argument” (that funded defined-contribution schemes are less sensitive to demographic
risks) in the policy debate has been minimized. The authors point out that the argument for diversification is largely based on the myth that prefunding can hedge against the macroeconomic shock induced by demographic aging. Draho-
koupil and Domonkos conclude that once this and other misunderstandings are put aside, the remaining rationale for pension privatization is not so much a positive-economics argument, but a mistrust of the state and its collective provision of social insurance.

Part III. Country Experiences and Challenges

Chapter 9, by d’Addio, presents an overview of the risks faced by advanced European economies. The author discusses demographic changes and their impact on public pension systems, then turns attention to societal developments and risks, including changing work patterns, women’s labor force participation rates, and new family arrangements, all of which have an effect on the risk of old-age poverty. With regard to the impact of the global financial crisis on the economic condition of the elderly, the author concludes that not all countries managed to introduce long-term adjustments to their pension systems, despite the effect of the crisis on future pensioners’ welfare.

Parametric reforms—increase in the retirement age augmented by strong incentives against early retirement and, possibly, automatic adjustments in line with life expectancy—in these countries may help achieve benefit adequacy and financial sustainability at the same time. Generating demand for older workers’ labor is also critical. Individuals, firms, and the government have equally crucial roles to play: skill development, conscious reliance on older workers’ comparative advantages, and tax incentives all are important in increasing the participation rates of older workers. Finally, reducing political risks, increasing trust in the system, and treating pension policy in the broader context of labor, tax, and education policy considerations are all important.

In Chapter 10, Kashiwase, Nozaki, and Tokuoka discuss pension reforms in Japan that deal with the challenge of fiscal consolidation, preserve intragenerational equity, and avoid a further worsening of intergenerational equity. Japan is taking the global lead in population aging, with the old-age dependency ratio projected to rise to 57 percent by 2030. Despite this demographic aging, public pension spending increases based on current policies are, in fact, relatively moderate compared with other advanced economies. Still, the substantial fiscal deficit calls for rationalizing social security.

The authors consider three reform measures: an increase in the pension eligibility age, a reduction in the pension replacement ratio, and an increase in contributions. Increasing the eligibility age is the most attractive option in light of high and rising life expectancy. This option would have a positive effect on long-term economic growth and would apportion the fiscal burden relatively fairly between younger and older cohorts. Other equity-enhancing measures could include better targeting by clawing back a small portion of pension benefits from wealthy retirees, and reducing preferential tax treatment of pension benefit incomes.
Kim, in Chapter 11, focuses on the challenge of providing adequate old-age pensions in a rapidly developing Korea. The two most urgent issues are to extend coverage to various vulnerable groups and to raise the low level of benefits, while maintaining long-term solvency. The current multipillar pension system comprises a means-tested, basic old-age pension; the national pension; public and private occupational pensions; and individual pensions. The national pension covers the most people, even though it was only introduced in 1988. As elsewhere, one of the main hurdles facing the pension system is the rapid aging of the population. The Korean pension system faces the additional challenge of having to adapt to dramatic changes in the population structure as a result of urbanization and the increase in the number of nuclear families. As Jackson finds in Chapter 6, these changes have gone hand-in-hand with evolving attitudes—children are no longer necessarily prepared to look after their parents as they had in the past. Old-age poverty has thus become much more prevalent. Kim argues that inadequate pension benefits could remain a major concern into the future because the planned reduction in the national pension’s replacement rate has not yet been offset by increased take-up of private pensions.

With respect to the fiscal sustainability of the Korean pension system, Kim shows that the national pension scheme is in a solid financial position into the foreseeable future (reflecting the scheme’s immaturity) and that it will not run out of funds until 2060. However, Kim questions whether the scheme’s funding arrangement is intergenerationally equitable: with the number of beneficiaries rising rapidly, the equilibrium contribution rate (the rate that equates benefit expenditures and contributions) would have to rise from 3 percent today to 22 percent by 2060, far higher than the actual current rate of 9 percent. Today’s pensioners receive benefits in excess of their contributions, but future pensioners will not, potentially creating conflicts between the generations and making it more difficult to encourage younger people to participate in the scheme. To address the issue of intragenerational equity and reduce old-age poverty, the basic old-age pension will necessarily be a part of any pension system for a long time. Increasing the contribution rate would be the preferred parametric reform to improve fiscal sustainability and spread the burden of financing the national pension more fairly across generations.

According to Asher and Bali in Chapter 12, designing an equitable and sustainable pension system remains a challenge in Singapore. Singapore’s pension system relies heavily on mandatory savings in a notional defined-contribution scheme, covering about 85 percent of the citizen labor force. One feature of the system is that members can use their accumulated balances for purposes other than financing retirement, including to finance housing or to pay for health care. As a result, preretirement withdrawals are substantial, reducing the funds available for retirement. Another feature is that the interest credited to members in their notional accounts is administered by the authorities. Asher and Bali find that the interest rate credited to members has fallen far short of the growth in real GDP and real wages, which, in their view, amounts to a highly regressive, often substantial, and recurrent implicit tax on contributors. Current member balances
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appear to be inadequate to provide a reasonable income replacement rate during retirement.

Looking forward, Asher and Bali identify a number of challenges, some related to the country’s growth prospects, others to the pension system. As in most other countries, Singapore’s population is aging rapidly, with a shrinking citizen workforce acting as a drag on growth. Growth prospects are further dampened by a slowdown in the growth rate of the noncitizen (foreign) population from previously unsustainable levels. Policymakers will therefore need to find new sources of growth. Regarding the pension system, Asher and Bali believe that the existing arrangement will fail to deliver adequate pensions for a significant portion of the population and that the authorities’ expectation that individuals will work longer to boost retirement incomes might prove misguided. To address the issue of inadequate retirement incomes, they propose a noncontributory (tax-financed) social pension with benefits related to average wage income or per capita GDP. Other measures to improve the equity of the pension system would include making the tax treatment of contributions less regressive, and structuring the annuity managed by the system along social insurance (i.e., risk-pooling) lines so that preretirement income inequalities can be lessened in retirement rather than accentuated as they are today. Finally, the authors suggest treating foreign workers more equitably given that they contribute substantially to government revenue but are excluded from participating in the system.

Australia is unusual for an OECD country in the sense that its pension system is based on a tax-financed, means-tested basic pension (called the Age Pension) supplemented by both a mandatory, employer-based, defined-contribution scheme (called superannuation) and voluntary private contributions. In Chapter 13, Clare argues that the Australian pension system compares relatively well with those in many other countries as evaluated by fiscal sustainability and equity but that it has its shortcomings and would benefit from further refinements. With respect to sustainability, Clare argues that the aging pressures are less pronounced in Australia than in many other advanced economies and calculates that the total amount of government assistance to retirement incomes in the form of the Age Pension and tax concessions for private pensions is unlikely to exceed 6 percent of GDP by 2050, below the current share in many other advanced economies. The legislated increase in the contribution rate to the superannuation scheme to 12 percent from 9 percent of earnings by 2019 will further reduce the pressure on the means-tested Age Pension in the long term.

The coverage of the superannuation pension is very wide but some groups are excluded, chiefly those earning less than $A 450 a month and the self-employed. However, about one-third of the self-employed make contributions on a voluntary basis, partly driven by the availability of tax concessions. Clare identifies a number of equity-related issues with the superannuation pension, including that it is not yet mature enough to deliver a comfortable standard of living in retirement for most individuals and that members generally draw down a large part of their pension assets as a lump sum. Clare argues that the remaining pension fund assets might be insufficient to provide adequate income streams in retirement.

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According to Clare, addressing this lack of adequate retirement income is also the main future policy challenge. Dealing with it could make the pension system more equitable. Clare proposes a number of measures to widen coverage. First, employers should also make superannuation contributions for those earning less than $A 450 per month, which would mainly benefit women and would only add modestly to business costs and to the Australian budget. Second, mandatory superannuation should be extended to the self-employed. Third, superannuation contributions should also be made while an individual is on paid parental leave, which currently does not occur. Again, this measure would mainly benefit women. Finally, current pension arrangements and administrative requirements should be adapted to the needs of the indigenous Australian population, which currently has a much lower coverage rate than the population at large.

Park and Estrada, in Chapter 14, review eight East and Southeast Asian countries' pension systems. The expected demographic shift—caused by both longer life expectancy and declining fertility rates—and the changes in family-based old-age support will require a marked policy response from government. Currently, the pension systems of all eight countries are managed by the government—although the basic structures of the pension systems for formal-sector workers are far from uniform. The pension systems of China, Indonesia, Malaysia, and Singapore are defined-contribution or notional defined-contribution plans, whereas those of Korea, the Philippines, Thailand, and Vietnam are defined benefit. Defined-contribution systems are generally prefunded while defined-benefit systems are not. The structure of China’s pension system combines a defined-benefit pillar with another pillar consisting of defined-contribution and notional defined-contribution schemes. Among the eight countries, ignoring the broader social safety nets, the pension systems of only three countries explicitly redistribute income.

In the authors’ view, pension systems need to meet five requirements: reliable collection of contributions; timely and accurate benefit payments; high-quality investment of pension assets; accurate data and record-keeping mechanisms; and reliable financial statements and reports that promote better governance, fiduciary responsibility, transparency, and accountability. However, many Asian pension systems fail to perform well, partly as a result of design shortcomings—limitations of adequacy, affordability, robustness, sustainability, and equity—and partly because they do not effectively perform the five core functions of pension systems. This latter issue is attributable to high transaction costs and weak governance.

A major equity-related issue in the eight countries reviewed is coverage: access to pension systems tends to be skewed toward urban areas and the formal sector. For example, it is estimated that fewer than 10 percent of rural workers in China have pension coverage. Rural-to-urban migration is also aggravating the problem of low coverage because migrant workers tend to find informal employment. The limited coverage of rural and informal-sector workers reflects the high administrative costs of reaching them and the limited institutional capacity of Asian pension systems. Pension coverage is also higher for government workers than for private sector workers throughout the region.
The pension-related needs and capacities of Asian countries vary greatly. Park and Estrada, however, identify common region-wide issues that need to be addressed in the course of pension reform. Strengthening institutional capacity is crucial, especially in poorer countries such as China, Indonesia, and Vietnam. Appropriate governance and regulation are needed for better accounting, more rigorous financial controls, and more effective disclosure to stakeholders. Current regulatory structures for pensions are weak in Asia. Expanding coverage should be a cornerstone of reform in the countries covered by the chapter: even in richer economies such as Korea and Malaysia, coverage is far from universal. Financial sustainability will only be maintained in countries with defined-benefit regimes if parametric adjustments are introduced (i.e., raising the retirement age, raising the contribution rate, or implementing benefit indexation and adjusting accrual factors). In countries with defined-contribution schemes, governments will need to liberalize investment rules and permit switching out of public debt instruments to increase returns on assets. Governments will also need to focus on protecting the elderly poor, given the large number of the lifetime poor—in some Asian countries reaching 30 percent of the labor force—who do not participate in formal pension systems. The resulting poverty and social and political tensions may lead to instability and hamper growth. Therefore, Park and Estrada argue, the case for urgent pension reform in Asia is as much social as economic.

According to Zuo in Chapter 15, one of the key challenges facing China, in light of increasing income disparity and rapid aging, is how to reform the country’s pension system to enhance its equity, efficiency (for example, dealing with labor market mobility), and financial sustainability. In the first section, Zuo describes how China’s public pension system has undergone a series of reforms since 1990, focusing first on pensions for urban workers between 1990 and the beginning of this century, and then more recently on pensions for rural and urban residents, many of whom had no access to pensions in the past. Zuo argues that the single biggest factor shaping the development of the pension system will be demographic change, with the country’s population set to decline and age rapidly. The pension system faces other challenges, too, including dealing with the high degree of fragmentation by locality and by social group, and the huge disparities in benefit generosity across the thousands of existing schemes. These issues raise concerns about the equity, efficiency, and sustainability of the system.

To achieve more equitable and adequate retirement incomes in the future, Zuo proposes a new, five-pillar pension system based on the existing three-pillar system. Crucially, the existing system should be complemented by a noncontributory or zero pillar pension for all elderly people (which would be universal rather than means tested). In addition, the existing first pillar should be organized nationally to eliminate the current fragmentation, and financed by a contribution rate that is lower than the current rate. This lower rate would increase compliance. Zuo also suggests that management of the existing individual savings accounts (the second and third pillars) should be transferred from local governments to licensed pension asset management firms. To address the current issue of low, or even negative, real returns on investment, these firms would be allowed to
invest widely, both domestically and abroad. Management costs would be reduced through competition. The final pillar would be traditional familial support to the elderly.

Chapter 16 discusses India’s pension system. According to Swarup, more than 88 percent of India’s workforce currently is not covered by formal pension arrangements, while a large portion of the remaining 12 percent participate in unfunded defined-benefit schemes. The author identifies coverage, sustainability, adequacy, and social acceptance as the system’s greatest problems. The New Pension System is a significant step toward addressing the latter problem, but its expansion could help extend coverage. However, broadening coverage will encounter daunting challenges: low per capita income will require that workers, especially informal and rural workers, be offered strong incentives to contribute. The inclusion of women will also present difficulties given their low labor force participation rates and socioeconomic status. With regard to sustainability, financing the pension liability of the already underfunded or partially funded schemes is likely to cause fiscal stress for the next two or three decades. Parametric changes will, therefore, become necessary for effective and efficient discharge of this liability. Social acceptance, built on trust, will also be crucial if the expansion of the new pension scheme is to succeed.

Swarup offers advice on the most important issues that the reform process will need to address. First, he calls for a comprehensive, inclusive, and equitable reform strategy that clearly defines the pension system’s objectives, including the targeted coverage, average and minimum replacement ratios, the extent of the mandate, and the strategy for dealing with elderly people without pension savings or entitlements. Second, the author emphasizes the importance of extending the New Pension System and promoting portability across existing schemes to improve labor market flexibility. Third, the reform will also need to address governance issues in occupational pension schemes to improve their investment performance and the quality of administration, and to promote the use of financial products that provide coverage against longevity risk.

Indonesia, as described by Muliati and Wiener in Chapter 17, operates a fragmented pension system that only covers about 12 percent of the labor force. In addition to low coverage, the system’s adequacy is also questionable: civil service pensions are relatively low, especially for midlevel and high-ranking personnel, while benefits from the general social insurance system are often taken early and as lump-sum payments that do not provide protection against longevity risk. The authors discuss the current reform, which aims to provide higher coverage, unified administration, more transparent governance (including the clear separation of reserves and assets belonging to the newly established administrator), as well as modern administrative procedures ensuring better reporting and collection compliance. They also draw attention to shortcomings that may need to be addressed.

The authors identify two equity issues with the current reform proposal: First, it is unlikely that coverage can be significantly expanded in the informal sector unless proper incentives are provided to participate. Second, with regard to
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adequacy, the rules of the scheme—including targeted replacement rates and contributions that would support them—are not yet defined and will require policy decisions. The reformed system will also need to address women’s participation rates and benefit levels, recognizing that defined-benefit arrangements are better suited to providing redistribution to improve women’s welfare in old age. The governance structure of the new system will also need further improvements to clarify regulatory and supervisory functions. Business processes, including contribution collection, will need to be modernized.

In Chapter 18, Volskis argues that the economic crisis has created new challenges for Latvia’s multi-pillar pension system. Following the collapse of the Soviet Union in the early 1990s and Latvia’s subsequent independence, the government embarked on a comprehensive pension reform process, culminating in the introduction of a first pillar PAYG ("solidarity") pension system involving notional defined contributions in 1996—making Latvia the first country in the world to do so. Alongside this, a second pillar based on mandatory funded defined contributions was also introduced, with the total contribution rate of 20 percent initially split 18:2 between the two pillars. The new system was set up to deal flexibly with a number of growing demographic challenges and changes in the labor and capital markets.

Volskis argues that the system has generally been successful, with second pillar participation rates and contributions increasing steadily since 2000, the latter also the result of an increase in the contribution rate going to that pillar from 2 percent to 8 percent by 2008. But challenges remain and new ones have arisen as a result of the global economic and financial crisis. A key concern is that the existing pension system might not be sustainable after all. The sharp increase in the unemployment rate as a result of the crisis undermined the contribution base for the first pillar, while the second pillar has been plagued by unacceptably high administrative costs and the regulator’s restriction to invest pension funds in domestic long-term real economy projects, lowering potential returns. Another concern, expressed strongly by the pension fund industry, is that the decision during the crisis to cut the contribution rate for the second pillar back to 2 percent will make it much more difficult for the second pillar to generate the targeted replacement rates.

Volskis suggests a number of reform options for dealing with these challenges. First, he argues that investment restrictions should be lifted, which would help industry generate the long-term, stable returns it needs to deliver adequate replacement rates. Second, management fees ought to be reduced. Third, the authorities should help the unemployed re-enter the labor market rather than offer social support programs. In addition to helping reduce future income inequalities, labor market participation is crucial to building up long-term pension entitlements and assets in the first and second pillars, which, in turn, are fundamental to generating adequate retirement incomes in the future.

Eich, Gust, and Soto assess whether Russia’s pension system is sustainable and equitable in Chapter 19. The pension system is based on three pillars, comprising (1) a flat (basic) amount financed on a PAYG basis; (2) notional defined contribu-
tions, again financed on a PAYG basis; and (3) funded defined contributions. Coverage for the basic pension is almost universal. The system is funded by payroll contributions and transfers from the federal budget. A key characteristic of the Russian public pension system is the relatively low statutory and effective retirement age: men can claim a full old-age pension at age 60 and women at 55 (even though women have substantially higher life expectancy at age 60). In reality, many individuals retire even earlier, taking advantage of numerous early retirement options. For the authors, the existence of preferential retirement ages is the most prominent equity issue in the Russian pension system.

Looking forward, Eich, Gust, and Soto argue that the key challenges facing Russia’s pension system are how to ensure adequate incomes in retirement and reasonable funding burdens while maintaining long-term sustainability. As elsewhere, Russia’s population is aging. Assuming unchanged replacement rates, the authors project public pension spending to increase from about 9 percent of GDP today to 12.3 percent by 2030 and 16.3 percent by 2050. The authors consider three reform options for dealing with this increasing pension spending: reducing benefit generosity, curtailing eligibility, and increasing revenue. They find that curtailing eligibility—by increasing the statutory retirement age and by closing down early retirement options—could help to dampen future public spending growth. At a minimum, equalizing the male and female statutory retirement age should be considered, but further increases, for example, to 63 years by 2030 for both men and women, would be required to dampen future spending growth markedly. Raising the statutory retirement age further, to 65 years by 2050, would nearly stabilize spending at the 2010 level. Although a reduction in benefit generosity could also help brake future spending growth, the authors argue that the reduction or even elimination of preferential retirement ages would be the most equitable way for the pension system to play its role in returning Russian public finances to a long-term sustainable path.

In Chapter 20, Pereira discusses the current position of the Brazilian public pension system and the impact on savings, growth, and intergenerational equity of recent and planned reforms. Pension spending in Brazil is very high by international standards, considering the relative youth of the Brazilian population. As a consequence of fairly generous replacement ratios, low average retirement ages, and indexation rules, the public schemes run a combined deficit of approximately 3 percent of GDP. The pension system faces a funding gap of close to 25 percent of today’s GDP for the next 20 years, rising to 100 percent through 2050.

The 2012 reform introduced a defined-contribution pillar to the public sector pension scheme and set benefit and contribution rules for newly hired civil servants at the level of those in the private sector pension scheme. During the reform’s implementation, a transition deficit will be generated (of approximately 0.1 percent of GDP) because of the diversion of part of the PAYG revenues to individual funded accounts. The author argues that although the reform is welcome from a systemic point of view, its macroeconomic consequences will be determined by the manner in which the transition deficit is financed (incremental debt or government savings).
The author also points out the need for further parametric changes (such as increasing the effective retirement age, reducing average replacement rates for both old-age and survivor pensions, revising the indexation of the minimum pension, and adjusting benefits to life expectancy at retirement) to improve the system's sustainability and promote private savings and labor supply.

REFERENCES


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CHAPTER 2

Public Pension Spending in Advanced and Emerging Market Economies: Past Trends and Projected Outcomes

FRANK EICH, MAURICIO SOTO, AND CSABA FEHER

INTRODUCTION

This chapter presents historical trends in and long-term projections of public pension spending in advanced and emerging market economies. It finds that public pension spending increased from 5 percent of GDP in 1970 to about 9 percent in 2010 in advanced economies, with the four drivers behind the increase being population aging, changes in eligibility, the income replacement rate, and labor force participation rates. During the period 1970–90, increases in spending reflected a combination of higher replacement rates, aging, and increased eligibility. Pension spending growth has been more contained since 1990, helped by both tighter pension eligibility rules and increases in labor force participation rates. Public spending increases have been larger in emerging market economies, than in advanced economies during the past two decades, but from a much lower starting level in emerging market economies outside Europe. Between 1990 and 2010, spending in all emerging market economies increased, on average, by 2 percentage points of GDP. In emerging Europe, spending increased from about 7½ percent of GDP in 1990 to 10½ percent in 2010, reflecting mainly higher replacement rates and population aging. In other emerging market economies, spending increased from 2¼ to 3¼ percent of GDP during the same period, owing to increases in replacement rates, albeit from relatively low initial levels.

1Advanced economies comprise Australia, Austria, Belgium, Canada, the Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Japan, Korea, Luxembourg, the Netherlands, New Zealand, Norway, Portugal, the Slovak Republic, Slovenia, Spain, Sweden, Switzerland, the United Kingdom, and the United States. Emerging market economies comprise Argentina, Brazil, Bulgaria, China, Chile, Colombia, Egypt, Estonia, Hungary, India, Indonesia, Jordan, Latvia, Lithuania, Malaysia, Mexico, Pakistan, the Philippines, Poland, Romania, Russia, Saudi Arabia, South Africa, Thailand, Turkey, and Ukraine.
Looking forward, the chapter provides projections for public pension spending to both 2030 and 2050, incorporating the impacts of recent pension reforms. Public pension spending is projected to increase by about 1½ percentage points of GDP by 2030 in advanced economies. The projected public pension spending increases would be significantly higher had reforms not already been enacted: in the absence of these reforms, public pension spending would increase by 4¼ percentage points of GDP. Among emerging market economies, spending increases are projected to average ¾ percentage point of GDP by 2030.

The chapter is structured as follows: Historical trends of public pension spending and the factors driving them are presented in the next section, followed by a section discussing public pension projections out to 2030 and 2050 based on current policies. Population aging will accelerate markedly in advanced and emerging market economies during the coming decades, putting additional pressure on age-related spending for years to come. The next section discusses the numerous risks to the projections, including those relating to long-term demographic developments and macroeconomic assumptions. The final section assesses the need for pension reform. It finds that this need varies by country but that reforms could be considered in the majority of advanced economies and in a few emerging market economies, particularly those in which the projected increases in age-related spending for 2010–30 are relatively high.

**HISTORICAL TRENDS IN PUBLIC PENSION EXPENDITURES**

The historical trends in public pension expenditure must be observed against the backdrop of gradual population aging. During 1970–2010, the old-age dependency ratio—the number of people ages 65 and older divided by the number of people ages 16 to 64 (the working-age population)—increased from 17 percent to close to 25 percent in advanced economies and from 10 percent to nearly 14 percent in emerging market economies (see Chapter 1). In other words, for every person 65 and older there are currently four working-age people in advanced economies and slightly more than six in emerging market economies. In most countries, the gradual increase in the old-age dependency ratio reflects, in part, increases in life expectancy but mainly the decline in fertility rates since the 1950s. As a result of declining fertility, the working-age population has been growing less rapidly. Migration is the other key demographic variable that can affect the old-age dependency ratio. In many countries, though, its impact on the overall population structure, and hence the age distribution, is not significant.

**Public Pension Spending Trends in Advanced Economies**

In advanced economies, although public pension spending has increased sharply during the past 40 years, reforms enacted since 1990 have helped slow spending growth. Expenditures increased from 5 percent of GDP in 1970 to 9¼ percent in 2010 (Figure 2.1, left panel).
Figure 2.1 Advanced Economies: Evolution of Public Pension Expenditures and Main Contributors

Figure 2.1, right panel, shows that the four drivers behind the change in public pension spending as a share of GDP are aging, eligibility rates (the number of pensioners as a proportion of the population 65 and older), replacement rates (the ratio of average pension to average wages), and labor force participation rates:

- During 1970–90, increases in spending in advanced economies reflected a combination of higher replacement rates, aging, and increased eligibility—the average statutory retirement age declined by one year in this period. This increased generosity of systems that occurred during 1960–80 reflects, in part, the more general expansion of the welfare state (Lindert, 2004; Tanzi and Schuknecht, 2000). Increased female labor force participation offset some of the increase in spending.

- Pension spending growth has been more contained since 1990. The impact of aging and benefit increases was partly offset by both tighter pension eligibility rules (including a higher retirement age in the Czech Republic, France, Germany, Italy, Korea, New Zealand, the Slovak Republic, and the United States) and further increases in labor force participation rates.

Public Pension Spending Trends in Emerging Market Economies

During the past two decades, increases in public pension spending in emerging market economies have been larger than those in advanced economies, but from a much lower starting level in emerging market economies outside Europe. Between 1990 and 2010, spending in all emerging market economies increased, on average, by 2 percentage points of GDP (Figure 2.2, left panel). In emerging

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Europe, spending increased from about 7½ percent of GDP in 1990 to 10½ percent in 2010 with rapid increases during the 1990s in Poland, Romania, Turkey, and Ukraine. This increase has been mainly due to higher replacement rates (average pensions increased relative to wages during the 1990s) and population aging. Declining labor force participation rates have also played a role (Figure 2.2, right panel). In other emerging market economies, spending has increased from 2¼ to 3¼ percent of GDP over the same period, owing to increases in replacement rates and population aging, albeit from relatively low initial levels.

On average, spending is lower in advanced economies than in emerging Europe—at 9¼ percent and 10½ percent of GDP, respectively—but is substantially lower in other emerging market economies, at 3¼ percent. However, the variation in spending among advanced economies is considerable, ranging from less than 5 percent of GDP in countries with relatively young populations and low replacement rates (Australia, Canada, Iceland, and Korea) to more than 12 percent in countries with relatively high replacement rates and older populations (Austria, Finland, France, Greece, Italy, and Portugal; see Figure 2.3). In contrast, no European emerging market economy spends less than 6 percent of GDP. Most European advanced and emerging market economies have replacement rates of between 40 and 60 percent, old-age dependency ratios greater than 20 percent, and nearly universal coverage. The relatively low spending in emerging market economies outside Europe reflects a combination of relatively low coverage (generally only those in the formal sector are eligible and receive pensions that are high relative to the average wage) and younger populations.
Increased Spending in Advanced and Emerging Market Economies

Pension spending in advanced and emerging market economies is projected to increase by 1½ and ¾ percentage point of GDP, respectively, between 2010 and 2030, with substantial variation across countries (Figure 2.4). Among advanced economies, increases in spending of at least 2 percentage points of GDP are projected in Austria, Belgium, Finland, Korea, Luxembourg, the Netherlands, New Zealand, Norway, and Switzerland, while spending is projected to decrease in the Czech Republic, Italy, and Japan. Among emerging market economies, spending increases are projected of at least 3 percentage points of GDP in Egypt and Turkey and decreases in Bulgaria, Chile, Colombia, Estonia, Hungary, Latvia, Lithuania, Poland, and Ukraine. Box 2.1 summarizes the projection methodology.

Pension spending is projected to increase further beyond 2030. In advanced and emerging market economies, pension spending is projected to increase by 1.2 and 1.4 percentage points of GDP, respectively, between 2030 and 2050, taking the overall increase between 2010 and 2050 to nearly 3 and more than 2 percentage points of GDP, respectively.
Figure 2.4  Increase in Pension Spending, 2010–30 (Percent of GDP)

Sources: European Commission (2012); International Labor Organization (2011); Organization for Economic Cooperation and Development (2013b); United Nations (2012); and country authorities.

BOX 2.1

Projecting Public Pension Spending

The projections presented in this chapter are based on official estimates where available, which are also subjected to “stress tests” to identify upside risks. For the advanced economies, initial spending levels include cash benefits for old-age, survivor, and disability pensions from the Organization for Economic Cooperation and Development (OECD) Social Expenditure database. The baseline projections are adjusted to reflect differences in spending levels between OECD and national authorities’ estimates (for most countries this discrepancy was less than 0.5 percent of GDP in 2007) using the framework outlined in Appendix 2A. For example, U.S. official projections include only social security pensions, whereas the projections in this chapter include social security and public pensions for state and local government employees. The baseline projections assume that the share of these state and local programs in total pension spending remains constant over time. For countries without readily available projections—mostly emerging market economies outside Europe—the calculations reflect the impact of changing demographics and labor force participation and are adjusted to account for reforms that would affect eligibility ratios and replacement rates.
Enacted Reforms Help to Dampen Future Spending Increases

In advanced economies, old-age dependency ratios are projected to double between 2010 and 2050, in part because of increasing longevity—life expectancy at age 60 is projected to increase by about one year a decade—but mainly because of the past decline in fertility from about three children per woman in the 1950s to fewer than two in the 1990s (Goss, 2010). In emerging market economies, increases in the old-age dependency ratio are projected to be even more dramatic, particularly after 2030, owing to the rapid decline in fertility rates of the past few decades. In the absence of reform, demographic changes up to 2030 will increase public pension spending by 4¼ and 3¾ percentage points of GDP in the advanced economies and emerging Europe, respectively, and 2 percentage points in other emerging market economies (Figure 2.5). If implemented as planned,

Figure 2.5  Projected Evolution of Public Pension Expenditures, 2010–30

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<td>Advanced economies</td>
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<td>3.7</td>
<td>−2.1</td>
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<td>Contribution to spending growth (percent of GDP)</td>
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<td>−0.9</td>
<td>−0.5</td>
<td>−1.1</td>
<td>−0.3</td>
</tr>
</tbody>
</table>

Sources: European Commission (2012); International Labor Organization (2011); Organization for Economic Cooperation and Development (2013b); United Nations (2012); and IMF staff estimates.
enacted reforms will lower average pension spending in 2030 by 2¾ percentage points in the advanced economies, 3¾ percentage points in emerging Europe, and 2 percentage points in other emerging market economies.

The cumulative fiscal cost of projected spending increases is large. For the 20 years of 2010–30, the average present discounted value of pension spending increases is 12½ percent of 2010 GDP in the advanced economies and 3¼ percent in emerging market economies (Figure 2.6). The cumulative present discounted value of increases in pension spending during 2010–50 is 44¼ percent of 2010 GDP for advanced economies and 22¼ percent for emerging market economies.

**Risks to the Projections**

**Uncertainty of demographic projections**

Although the consensus holds that life expectancy at birth and at age 65 will increase in the coming decades, the exact amount of those increases is uncertain. Unanticipated increases can result from misjudging the continuing upward trend in life expectancy or from sudden changes, for example, as a result of medical breakthroughs. Figure 2.7 illustrates the inaccuracy of assumptions about life expectancy at birth for the United Kingdom. Past official population projections consistently underestimated the expansion of life expectancy, requiring regular upward revisions. In response, the projections have, since 2006, assumed more rapid increases in life expectancy. Whether the more recent projections are more realistic than earlier forecasts remains to be seen.

The uncertainty of the population projections is also illustrated by the United Nations’ revisions themselves. Figure 2.8 (panel 1) shows the total fertility rate (TFR) in Germany projected in the 1992 and 2012 UN population revisions. For

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5The calculation uses a discount rate of 1 percent, equivalent to assuming a 1 percentage point differential between the interest rate and rate of economic growth. A similar assumption is made for longer-term projections in the IMF’s Fiscal Monitor (IMF, 2011). Over an infinite horizon, the present discounted value of pension spending increases is 235 percent of 2010 GDP in advanced economies and 190 percent in emerging market economies.
2010, the 1992 population revision projected a TFR of 1.78; the actual number was 1.36. Starting with a much lower base in 2010, the 2012 revision now projects a much lower TFR in 2020 than was projected in 1992. The projections for the old-age dependency ratio in Latvia (Figure 2.8, panel 2) show a similar discrepancy, with the ratio projected to rise to 25 percent and 29 percent by 2020 in the 1992 and 2012 population revisions, respectively. Even small misjudgments in the underlying developments translate into significant deviations from the actual trend over the time horizons relevant for pension system design and policies.
Figure 2.9 Differences in Projected Life Expectancies, Japan and India

![Graph showing differences in projected life expectancies between Japan and India.](image)


Figure 2.9 illustrates the uncertainty of the life expectancy at birth projection using India and Japan as example. The figure shows that revisions do not always have to go in the same direction: whereas life expectancy has been revised upward significantly for Japan, the opposite is true for India.

In addition to these demographic risks, public pension expenditure projections are subject to a number of other risks.

**Macroeconomic risks**

Macroeconomic assumptions also affect pension spending projections. For example, lower-than-expected productivity results in lower wages and—to the extent that pension payments are indexed to prices rather than wages—could result in higher replacement rates than under the baseline scenario.\(^4\) Under a low-productivity scenario (productivity growth lower by 0.25 percent, or set at the 2000–07 average if lower), pension spending in 2030 would increase by 0.3 percentage point of GDP in advanced economies and by 0.1 percentage point in emerging market economies more than in the baseline scenario.

Projections are also sensitive to labor force participation assumptions: unchanged labor force participation rates would raise 2030 spending by at least ½ percentage point of GDP in Brazil, the Czech Republic, Estonia, Hungary, Japan, Ukraine, and the United Kingdom.\(^5\)

**Risk of reform reversal**

Official projections are also subject to the risk of reform reversal. In response to substantial aging challenges, legislated reforms often seek ambitious reductions in

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\(^4\)The impact is likely to decline over time because a permanent slowdown in productivity growth gradually lowers lifetime earnings, which, in turn, will eventually lower replacement rates.

\(^5\)Another related consideration is the impact of the 2008–09 global financial crisis and its aftermath on potential growth. The crisis would lead to a step increase in pension spending as a share of GDP, at least in the near term because benefit levels, which are tied to historical wage growth, adjust gradually and with a substantial lag. Some of this effect will be permanent, reflecting permanent losses in potential output, but some would be unwound as the output gap closes. Nevertheless, the overall effect of the crisis on spending is relatively modest, with little impact on the magnitude of the projected increases: closing the 2010 output gap would reduce 2010 pension spending by an average of 0.3 percent of GDP.
pension spending. Relative to a no-reform scenario enacted reforms are expected to reduce 2030 spending by at least 5 percentage points of GDP in Brazil, Chile, Colombia, the Czech Republic, Estonia, France, Italy, Latvia, and Poland and by at least 3 percentage points in Austria, Finland, Germany, Greece, Hungary, Japan, Lithuania, Portugal, the Slovak Republic, Slovenia, Spain, and Ukraine. Between 2010 and 2030, these reforms should lead to relatively large reductions in projected replacement rates in Canada, France, Germany, Iceland, Ireland, the Netherlands, Portugal, Slovenia, and Sweden and in eligibility ratios in the Czech Republic, Italy, the Slovak Republic, and the United Kingdom (Figure 2.10). For the period 2030 to 2050, large reductions in replacement rates are projected for Iceland, Ireland, Portugal, and the Slovak Republic. Eligibility ratios largely stabilize after 2030, when most of the legislated increases in the retirement age will have taken effect.

As these reforms take effect, political pressure to reverse them could mount. In Sweden, for example, automatic adjustments (such as increasing contribution rates and freezing benefits to respond to funding shortfalls) designed to ensure sustainability of its pension system were delayed, and benefits were cut by less than suggested by automatic adjustment rules (Sundén, 2009). Similarly in Germany, indexation rules were modified during the 2008–09 global economic crisis to prevent pensions from falling in nominal terms (Börsch-Supan, Gasche, and Wilke, 2010). To reduce the impact of reform reversal, replacement rate reductions should not undermine the ability of public pension systems to alleviate poverty among the elderly. For example, in Greece and Italy, reforms reduced benefits while protecting low-income pensioners. In addition, achieving the spending reductions associated with lower eligibility ratios—such as by increasing the retirement age (as legislated in Australia, the Czech Republic, Denmark, Estonia, France, Greece, Hungary, Ireland, Italy, Japan, Korea, Romania, Spain, Ukraine, the United Kingdom, and the United States)—means that older workers should not exit the labor force through other routes, such as by claiming disability pensions.

Risks from the transition to multipillar structures

In emerging market economies in Latin America and Europe, specific risks arise from the transition to multipillar structures. In these countries, pension reforms that led to the introduction of mandatory private pensions improved the long-term sustainability of public finances. However, the large transition costs arising from diverting contributions to mandatory private pensions have widened budget deficits and increased near-term borrowing requirements. These deficits led a number of countries to reverse or slow this transition to address short-term fiscal constraints as captured by traditional deficit and debt indicators (Estonia, Hungary, Latvia, Lithuania, Poland, Romania), at times with adverse implications for long-term balances (Soto, Clements, and Eich, 2011). These reversals or slowdowns highlight the need to account for pension reforms transparently.

Shortfalls in the funding of defined-benefit private pension plans could also impose a burden on public sector finances. Governments may have to support participants covered by private pension plans if the private plans fail to deliver...
promised benefits. Because defined-benefit pension plans guarantee a certain pension income based on contribution years and earnings, funding shortfalls could be regarded as a contingent government liability (Figure 2.11). The degree of underfunding is considerable in some plans, but subject to wide fluctuations. In the United Kingdom, for example, the funding position of corporate defined-benefit
plans fluctuated between balance and a shortfall of 20 percent of GDP during 2009 alone. The funding position was then in small surplus in early 2010 and early 2011. In mid-2013, the funding ratio was about 80 percent, equivalent to about 15 percent of GDP (PPF, 2013). In the United States, the 100 largest defined-benefit corporate pension plans were, on aggregate, fully funded in 2008 but the funding ratio fluctuated between 70 and 80 percent (equivalent to 2½ percent of GDP in 2012) in the following years (Erhardt, Perry, and Wadia, 2013). Insurance plans have been set up to protect defined-benefit pension program participants in case of corporate bankruptcies (Germany, Sweden, the United Kingdom, the United States). Although these insurance plans reduce government exposure to individual corporate failures, they are not designed to absorb the more widespread closure of private defined-benefit pension plans. Thus, government exposure to these risks is likely to be accentuated during times of crisis (IMF, 2009).

Inadequate replacement rates are also a risk in private defined-contribution plans, which would lead to pressure for higher social pension spending. Governments in most countries will have no legal obligation to step in, but a contingent liability could arise from an implicit social obligation to ensure adequate income in retirement, especially for low-income groups. Although estimating the adequacy of future retirement incomes and making cross-country comparisons is generally difficult, these risks are likely to be more pronounced the larger the role of defined-contribution plans in providing old-age income. In Mexico, South Africa, Switzerland, and much of emerging Europe, more than three-quarters of pension fund assets are in defined-contribution plans (OECD, 2013a).
The limited cross-country evidence suggests that these risks could be particularly challenging in some countries. For example, the ratio of elderly to non-elderly incomes (on a posttax basis) is projected to fall between 2010 and 2040 in several advanced economies (Canada, France, Italy, and Switzerland), remain stable in some (Japan, Spain, and Sweden), and rise in others (Australia, Germany, the Netherlands, the United Kingdom, and the United States) (Jackson, Howe, and Peter, 2013). In several countries, median replacement rates are projected to be substantially lower than the average, which supports the evidence that some people—especially those with low to modest incomes—are not making adequate voluntary contributions to pension plans (U.S. Government Accountability Office, 2007; Pensions Commission, 2004). It has been calculated that 50-year-old Britons must save an additional $9,400 a year until retirement at age 65 to reach a benchmark replacement rate of 70 percent; the corresponding figures for Ireland and Spain are $8,800 and $7,300, respectively (Aviva, 2010).

CONCLUSION

The need for pension reform varies by country. Table 2.1 provides guidance on the need for reform and the main risks to the projections. Reforms could be considered in the majority of advanced economies and in a few emerging market economies, particularly those in which the projected increases in age-related spending (health and pensions) during 2010–30 are relatively high. In addition, the large size of pension spending in government budgets in several advanced and emerging market economies suggests that fiscal adjustment plans will need to include pension reforms, particularly in countries with large consolidation needs. If the underlying demographic assumptions do not materialize, reforms may be needed to stabilize spending—this risk is particularly marked for the high longevity assumption in six advanced and eight emerging market economies. Projections for a few advanced economies are vulnerable to macroeconomic assumptions, and those for emerging market economies face risks with respect to projected increases in labor force participation. Countries with low retirement ages and high eligibility ratios may also wish to prioritize pension reform to boost growth, especially if the gap between increases in life expectancy and the retirement age is high.

Although the appropriate mix of reforms depends on country circumstances, increasing the retirement age has many advantages. Table 2.1 identifies potential reform options that could be considered by each country if additional reforms are required, including eligibility rates (which are affected by the retirement age and the coverage of the pension system), replacement rates, and measures to raise additional revenues:

- Raising the retirement age further and curtailing eligibility for early retirement may be needed in most advanced economies projected to have high eligibility ratios in 2030, including Austria, Belgium, Canada, Finland, France, Germany, Greece, Korea, Luxembourg, the Netherlands, Portugal, the Slovak Republic, Slovenia, and Switzerland. Raising the retirement age
TABLE 2.1
Summary of Pension Issues and Potential Reform Options

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<th>Cause for Reform</th>
<th>Main Risks to Projections</th>
<th>Main Areas for Reform</th>
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<td>Pension spending as a percent of primary spending³</td>
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<td>Share of private pensions⁴</td>
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<th>Emerging market economies</th>
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1. Age-related spending increases
2. Pension spending as a percent of GDP
3. Pension spending as a percent of primary spending
4. Share of private pensions
5. High longevity
6. Low productivity
7. Low labor force participation
8. Eligibility rate
9. Replacement rate
10. Tax wedge
11. Efficiency of contributions
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Note: Tax wedge and payroll tax yield available only for OECD economies.

1Projected age-related spending increase 2010–30 exceeds 3 percentage points of GDP.
2Pension spending exceeds 10 percent of GDP.
3Pension spending in 2010 exceeds 20 percent of primary spending.
4Pension fund assets in 2010 are in excess of 40 percent of GDP.
5Pension spending increase 2010–30 under high longevity, low productivity, or low labor force participation is greater than ½ percentage point of GDP relative to baseline.
6The ratio of pensioners to population 65 and older in 2030 is projected to be greater than 110 percent.
7The ratio of average gross pension to average gross wage in 2030 is projected to exceed 50 percent.
8The sum of income and payroll taxes as a share of labor earnings in 2010 is less than 30 percent.
9The ratio of social contributions as a share of GDP to payroll rates as a percentage of total labor costs in 2010 is less than 0.4.
could avert the need for further cuts in replacement rates beyond those already legislated and would limit the burden of higher payroll taxes. Some countries could also focus on reducing replacement rates—Ireland and Italy, for example, are projected to have relatively high replacement rates in 2030. However, cuts in pensions should be sufficiently progressive to keep the elderly out of poverty. The relatively low tax wedges in Australia, Ireland, Korea, New Zealand, Switzerland, and the United States suggest that revenue measures could complement efforts to tighten eligibility or reduce replacement rates. In addition, Austria, Canada, Greece, Ireland, Korea, the Slovak Republic, Sweden, Switzerland, and the United Kingdom seem to have room to raise collection efficiency.

- Many emerging market economies, particularly Brazil, South Africa, and some in eastern Europe, are projected to have relatively high eligibility ratios in 2030. These countries could focus on equalizing the retirement ages of men and women and tightening access to disability pensions. Egypt and Turkey are projected to have comparatively generous plans that generally cover only a small portion of the population. In these countries, parametric reform is a prerequisite to expanding coverage. A few countries (including India, Indonesia, and Pakistan) are projected to have low replacement rates and low eligibility rates. For these countries, the main challenge will be to expand the retirement systems in a fiscally sustainable manner.
APPENDIX 2A. PUBLIC PENSION EXPENDITURE DETAILS

Public Pension Expenditure Identity

Population aging is typically measured by the old-age dependency ratio (the ratio of the population age 65 and older to the population ages 15–64). Eligibility refers to the number of pensioners as a proportion of the population 65 years and older; this factor depends on the qualifying conditions for a pension, particularly the statutory retirement age and the possibility of early retirement. Replacement rates—the ratio of average pensions to average wages—capture the generosity of pension benefits. Finally, changes in labor force participation rates affect both the numerator—increases in labor force participation today can affect future eligibility and replacement rates—and the denominator—higher labor force participation implies higher GDP. The equations define the public pension expenditure identity. This simple identity can be used to calculate the change in pension spending as a share of GDP between two years ($t_1$ and $t_2$). For any year $t$, let $O(t)$ be the old-age dependency ratio, $E(t)$ be the eligibility ratio, $G(t)$ be the replacement rate, and $L(t)$ be the inverse of the employment ratio. Assuming a constant total compensation share in GDP over time, the following calculations can be made:

\[
PE = \text{pensioners} \times \text{average pension} \\
\frac{PE}{GDP} = \text{pensioners} \times \frac{\text{average pension}}{\text{GDP workers}} \times \frac{1}{\text{workers}} \times \frac{\text{population } 65+}{\text{population } 15-64} \times \frac{\text{population } 15-64}{\text{population } 65+} \\
\frac{PE}{GDP} = \frac{\text{population } 65+}{\text{population } 15-64} \times \frac{\text{pensioners}}{\text{population } 65+} \times \frac{\text{average pension}}{\text{GDP workers}} \times \frac{\text{workers}}{\text{population } 15-64} \times \frac{\text{population } 15-64}{\text{population } 65+} \\
\frac{PE}{GDP} = \frac{\text{population } 65+}{\text{population } 15-64} \times \frac{\text{pensioners}}{\text{population } 65+} \times \frac{\text{average pension}}{\text{average wage}} \times \frac{\text{workers}}{\text{workers}} \\
\times \frac{\text{Compensation}}{\text{GDP}} \\
\text{Compensation share in GDP, assumed constant over time}
\]

Data Sources and Calculations

For OECD economies (Australia, Austria, Belgium, Canada, Chile, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Korea, Luxembourg, Mexico, the Netherlands, New Zealand, Norway, Poland, Portugal, the Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, the United Kingdom, the United States) 1980–2007 data are from the OECD Social Expenditure Statistics database (www.oecd-ilibrary.org/...
content/data/data-00167-en). This spending includes cash benefits for old-age, survivor, and disability pensions.

For some countries, public spending includes spending on special pension plans for public employees, including civil servants, subnational government employees, teachers, and members of the armed forces, which often follow special rules (including in Austria, Belgium, France, Germany, Greece, Portugal, and the United States). For Canada, these figures do not include teachers’ pension plans. For Mexico, the OECD data do not include state government plans. Earlier data (1970–79) for the majority of these countries (Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Japan, the Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, the United Kingdom, and the United States) come from Holzmann (1988). For the other OECD countries (Chile, Hungary, Iceland, Luxembourg, Mexico, Poland, Turkey), data for 1970–79 are imputed based on data from the International Labor Organization’s (ILO’s) “The Cost of Social Security” (1979, 1981, 1985, 1996). For years without observations, spending figures are estimated using a linear interpolation between the two observed points.

For Bulgaria, Latvia, Lithuania, and Romania, the primary source of data for 1990–2008 is the European System of Integrated Social Protection Statistics from Eurostat. For these countries, data for 1970–89 are imputed based on data from the ILO’s The Cost of Social Security. For years without observations, spending levels are estimated using a linear interpolation between the two observed points.

For other emerging market economies, the most recent spending as a share of GDP comes from IMF documents (Colombia, Egypt, Jordan, Saudi Arabia), country authorities’ estimates (Argentina, Brazil, China, India, Indonesia, Pakistan, the Philippines, Russia, South Africa, Thailand, Ukraine), or the ILO’s World Social Security Report 2010/11 (Malaysia). For some countries, these data might include social security spending other than pensions (Brazil). Because these data provide few data points, the years before 2010 are imputed based on demographics.

For cases in which data for 1990 and beyond are not available for these countries, they are imputed based on data from the ILO’s “The Cost of Social Security.” For years without observations, spending figures are estimated using a linear interpolation between the two observed points.

**Projected Pension Spending, 2010–50**

The latest available number (from the OECD, European Commission, Eurostat, ILO, IMF, World Bank documents, or country authorities’ estimates, as explained above) is the starting point for the projections. Spending is projected based on the authorities’ estimates when available. For most European economies, the authorities’ projections are available in their Stability and Convergence Programmes. These reflect, in part, efforts by the European Commission and the EU Economic Policy Committee to construct consistent projections for many
European economies (European Commission, 2012). The methodology applies the rate of increase of the share of GDP in the authorities’ estimates to the initial spending point. For example, for countries for which the latest data point available is from the OECD for 2007, and for which the authorities’ estimates for 2007, 2010, and 2030 are available, the projections for 2010 and 2030 are calculated as follows:

\[
\left( \frac{PE}{GDP} \right)_{\text{OECD, 2010}} = \frac{PE}{GDP} \left( \frac{PE}{GDP} \right)_{\text{OECD, 2007}} \\
\times \left( \frac{PE}{GDP} \right)_{\text{Authorities, 2010}} \\
\times \left( \frac{PE}{GDP} \right)_{\text{Authorities, 2007}}
\]

and

\[
\left( \frac{PE}{GDP} \right)_{\text{OECD, 2030}} = \left( \frac{PE}{GDP} \right)_{\text{OECD, 2007}} \\
\times \left( \frac{PE}{GDP} \right)_{\text{Authorities, 2030}} \\
\times \left( \frac{PE}{GDP} \right)_{\text{Authorities, 2007}}
\]

For cases in which the authorities’ estimates start after the latest observed figure, the spending figure is projected forward using demographic changes only. For example, if the last actual observed year of spending is 2007, and the authorities’ estimates start in 2008, then

\[
\left\{ \frac{PE}{GDP} \right\}_{\text{OECD, 2010}} = \frac{PE}{GDP} \left( \frac{PE}{GDP} \right)_{\text{OECD, 2007}} \times \frac{PE}{GDP} \left( \frac{PE}{GDP} \right)_{\text{Authorities, 2010}} \\
\times \frac{PE}{GDP} \left( \frac{PE}{GDP} \right)_{\text{Authorities, 2008}}
\]

Of course, this methodology suggests that the spending figures may not always match the authorities’ figures because of the use of a different base—OECD pension spending might differ from official estimates because of broader coverage of pension spending. For example, for the United States, OECD pension spending includes spending in state and local plans, whereas the authorities’ estimates include only the national social security plan. Nevertheless, the advantage of this
methodology is that it provides a relatively similar definition of spending (the OECD definition) that allows for cross-country comparisons.

For countries without readily available projections—mostly the emerging market economies outside Europe—projected spending reflects the impact of changing demographics and is adjusted to account for reforms that would affect replacement rates and eligibility ratios (Brazil, Chile, Colombia, Egypt, Jordan, Mexico). When no information about reforms is available (Argentina, China, Indonesia, Malaysia, Pakistan, the Philippines, Russia, Saudi Arabia, South Africa, Thailand, Ukraine), the following assumptions are made: (1) the coverage ratio (pensioners as a share of the population 65 and older) is constant, as is the replacement rate; and (2) changes are driven by the employment ratio and the old-age dependency ratio:

\[
\left( \frac{PE}{GDP} (t_2) = \frac{PE}{GDP} (t_1) \times \frac{O(t_2)}{O(t_1)} \times \frac{L(t_2)}{L(t_1)} \right).
\]

For China, a key assumption is the evolution of the funded component (the second pillar) of the system. Sin (2005) assumes full implementation of the second pillar and finds declining public spending on pensions as a share of GDP over time. In contrast, the baseline projections included in this chapter are closer to those from Oksanen (2010), which project substantial increases in pension spending during 2010–30, assuming the generosity of the unfunded state pension (first pillar) remains at its current level.

**Population, 1970–2050**

Population estimates, which affect the old-age dependency, eligibility, and inverse of the employment ratios in the identity, are from United Nations (2012).

**Number of Workers**

The number of workers is defined as the population ages 15 and older that is economically active. For every country in the sample the economically active share of the population is identified for each five-year age group (15–19, 20–24, . . . , 75–79, and 80+) separately for men and women for 1970–2050.

The share of the population that is economically active combines the fourth (data for 1950–2010) and sixth (data from 1990–2020) editions of the ILO’s Economically Active Population database. A consistent series for 1970–2020 is obtained by combining these two series—using the latest edition as the base and interpolating employment activity from 1990 to 1970 using the observed changes in the earlier data. Data for 2025–50 are projected using a fixed-effects regression on a five-year cohort \(c\) for every five-year period \(t\) during 1950–2020 \( (EA_{c,t} = \alpha EA_{c-1,t} + \beta EA_{c+1,t-1} + \gamma EA_{c+2,t-2} + \gamma YEAR)\). In other words, the projections assume that the economic activity rate in year \(t\) for cohort \(c\) depends on the economic activity
of the group five years younger than cohort $c$ in 2020, and on the observed economic activity rate of cohort $c$ in 2015, 2010, and 2005. This regression is performed for all countries in the ILO database. The result is a consistent series of economic activity for men and women by five-year age groups during 1970–2050.

**Number of Pensioners**

All individuals older than the statutory retirement age are considered “retired.” In addition, to account for early retirement, the share of the population ages 50–64 that was economically active at ages 45–49 but is no longer active is added to the “retired” pool—this calculation follows three different cohorts, 50–54, 55–59, and 60–64, separately for men and women. Finally, the total number of “retired” is multiplied by pension coverage (percent of those above the statutory age of retirement receiving a public pension) from ILO (2010) to obtain the number of pensioners. This adjustment is made to public pension coverage to reflect that not all retirees receive public pensions.

**Compensation to GDP**

Total employee compensation as a share of GDP (the last ratio in the pension expenditure identity) comes from the UN System of National Accounts 1993. The latest observed share of compensation in GDP is used, and it is assumed to remain constant throughout 1970–2050.

**REFERENCES**


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Designing Equitable and Sustainable Pension Systems
CHAPTER 3

The Role of the Public and Private Sectors in Ensuring Adequate Pensions: Theoretical Considerations

NICHOLAS BARR

THE BACKDROP

After brief discussion of background issues in the opening part of the chapter, the second section sets out the central lessons from economic theory and some of their main implications for policy. The third section discusses the role of government and is followed by a section that provides examples of good pension design. The fifth section sets out the widening range of options available to countries as their fiscal and institutional capacity increases, and the final section offers some brief conclusions.

Objectives of Pension Systems

Pension systems have multiple objectives. For the individual or family, the major ones follow:

• Consumption smoothing, that is, redistribution from one’s younger self to one’s older self. Pensions should allow a person to transfer some portion of consumption from his or her productive middle years to his or her retirement years.

• Insurance. In a world of certainty, individuals save during working life to finance retirement. However, people do not know how long they are going to live. Thus, a pension based on individual savings imposes the risk that the person will outlive those savings. The purpose of annuities is to allow people to insure against that risk. Pensions can also insure against disability and can protect spouses and young children should a worker die before retirement.

Public policy has additional objectives:

• Poverty relief is necessary if a person’s earnings record does not provide an adequate pension.

This chapter draws on writing with Peter Diamond, including Barr and Diamond (2008, 2009, 2010a, 2010b).
• **Redistribution** can be achieved by paying pensions to low earners that are a higher percentage of their previous earnings, thus subsidizing the consumption smoothing of lower earners. Because lifetime earnings are uncertain, such a system provides some insurance against low earnings. Redistribution toward families can also occur, for example, by paying a higher pension to a married couple than to a single person.

**Principles of Analysis**

Of the principles of analysis discussed in Barr and Diamond (2008, Chapter 10), three stand out: the need for a holistic approach, the need to frame analysis in what economists call a second-best context, and the need to consider the redistributive effects of pensions. The first two are discussed here, the third in the section on the role of government.

*Analysis requires a holistic approach*

Pensions have effects on the labor market, economic growth, the distribution of risk, and the distribution of income, including by generation and gender. Analysis needs to consider the pension system as a whole, including its multiple objectives and all of the constituent parts of the system. It is a mistake, for example, to be overly concerned about an actuarial earnings-related pension, given the need for a poverty-relief element elsewhere in the system. What is relevant for analysis is the combined effect of the system as a whole.

*Analysis should be framed in a second-best context*

What economists call first-best analysis is the world of rational economic men and women. The assumptions of that model include perfect information, rational behavior, complete markets (e.g., the ability to buy an indexed annuity that pays out at some future date), and no distortional taxation. As emerges repeatedly in the next section, the market for pensions is characterized by multiple and serious failures of these assumptions, including the following:

- Imperfect information, addressed by the economics of information (for which the 2001 Nobel Prize was awarded);
- Nonrational behavior, addressed by behavioral economics (for which the 2002 Nobel Prize was awarded);
- Incomplete markets and incomplete contracts (for which Peter Diamond’s work was cited in the 2010 Nobel Prize); and
- Distortional taxation, which is inherent in any system that includes poverty relief, and hence has to redistribute from richer to poorer people; this topic is addressed by the literature on optimal taxation (for which the 1996 Nobel Prize was awarded).

These failures are relevant not only to the analysis of pensions but to many other markets (Barr, 2012).
First-best analysis is useful as an analytical benchmark, but is a bad basis for policy design.

**ECONOMIC THEORY AND IMPLICATIONS FOR POLICY**

These analytical principles give rise to a series of lessons for policy design. This section discusses the most important of these lessons, together with their implications for policy: imperfect information and nonrational behavior are pervasive; output is central; different pension systems distribute risks differently; and transition costs matter. A final lesson is that despite the availability of sound principles for pension design, no single best pension system for all countries is attainable.

**Imperfect Information and Nonrational Behavior Are Pervasive**

**Imperfect information.** Individuals are imperfectly informed in several ways. First, they frequently have only a limited understanding of the risks and uncertainties they face, for example, about future benefits from different types of pension or about their longevity.

Second, individuals are generally badly informed about complex pension products. Many do not understand basic concepts in finance: Orszag and Stiglitz (2001) quote the chairman of the U.S. Securities and Exchange Commission as stating that more than 50 percent of Americans did not know the difference between a stock and a bond. The problem also has distributional implications because the worst-informed people are disproportionately among the least well off; that is, information poverty and financial poverty are highly correlated.

A further issue is that information is frequently asymmetric, leading to potential problems of inappropriate products being sold to ill-informed consumers. It is clear that one of the roots of the global financial crisis was that the sellers of financial products often had a better idea of their riskiness than did the buyers.

**Nonrational behavior** arises with pensions in two strategic ways: people may do a bad job of working out their optimal consumption-smoothing and insurance strategy (bounded rationality), or they may know the right strategy but fail to carry it out (bounded will power).

**Bounded rationality.** Sometimes a menu of choices is too complex for a person to make good decisions, even when provided with the necessary information. Such problems are more likely if the time horizon is long, the outcome involves complex probabilities, or the details are inherently complex, all of which characterize most pension products.

Bounded rationality leads to poor choices in a variety of ways:

- **Presentation.** Choices are influenced by the way in which they are presented. The order in which alternatives are set out can make a difference, and choices can be influenced by the number of alternatives a person is given.
• **Familiarity.** A worker may invest heavily in the stock of his or her employer. If the firm goes bankrupt, the worker loses both wage income and a significant portion of pension savings. Such behavior shows a failure to understand the benefits of diversifying risk.

• **Immobility.** Complexity and conflicting information can lead to passive behavior, where people freeze like a deer caught in the headlights. More alternatives can result in lower participation. In Sweden, a small fraction of a worker’s contribution goes into an individual funded account; the great majority of new workers, able to choose from more than 700 pension funds, make no choice at all.

**Bounded willpower.** Many people know they should save more but do not do so. Evidence suggests that in some circumstances people have a higher discount rate in the short term (i.e., a tendency to instant gratification) and a lower one in the medium term. The problem is that when the future arrives, it becomes the present; hence, short-term gratification continues. The resulting problems include the following:

• **Myopia.** Some workers pay little attention to the future. They may not make careful choices and may be influenced by current inducements, for example, entry into a prize drawing for a foreign holiday, when choosing a pension provider. And many people retire as soon as they are allowed, even if that leaves them (or, later, their surviving spouse) in poverty.

• **Procrastination.** People agree that they should save more for retirement but delay saving, do not save, or do not save enough, just as people delay losing weight or giving up smoking.

• **Inertia.** Whether someone is automatically enrolled in a savings plan or has to take explicit action to join should not matter. In practice, automatic enrollment leads to considerably higher participation.

**Implication for policy: Uncritical adherence to choice and competition is ill-advised.** First-best theory suggests that a system in which workers choose from competing pension providers will (1) maximize each worker’s welfare by allowing him or her to choose a portfolio that best reflects the worker’s time preference and risk aversion; and (2) exert downward pressure on administrative costs.

What is observed is very different as the result of procrastination, inertia, and immobility. The analysis above helps to explain these outcomes:

• **The costs of choice.** As discussed below, charges for individual accounts tend to be high and largely a fixed cost per account (managing a small account is not much cheaper than managing a large one), and thus bear most heavily on small accounts and in smaller countries that cannot exploit economies of scale.

• **The benefits of choice.** It might be worthwhile to incur these administrative costs if the ability to make choices were beneficial to workers. For example, the ability to choose one’s preferred food or music or smart phone increases a person’s welfare. As discussed, however, problems of imperfect information, bounded rationality, and bounded will power are serious for complex,
long-term contracts such as those for pensions, and all the more so in poorer countries where citizens have little financial market experience. In the case of complex products, the benefits of choice are small and may be negative, both because the person may make a bad choice and because of the transactions costs (time, effort) in making a choice.

- Poor choices by workers should not be surprising. The principles of finance, including the advantages of diversification and the trade-off between risk and return, are not intuitive. In addition, the noise in returns makes it difficult to tell whether good outcomes are the result of a manager’s skill or of random luck.

There are good reasons for arguing that consumers will not choose well even if they have the necessary information and skills. The gain from choosing more effectively (in the form of higher returns and lower charges) in any particular month is small, whereas the transaction costs—the time required to make an educated choice—are significant. Thus, workers, particularly low earners, for whom the gain in any month is smallest, have little incentive to keep up with the changing details of alternative investments and alternative charges.  

In sum, there are good reasons to be skeptical about the gains from individual choice in mandatory accounts. The considerable difficulty that occurs in making investment choices, even in countries with generations of individual experience in investing, should be a major concern in countries with limited histories of individual investment. The major criticism is, therefore, not of pension providers but of the model selected.

Output Is Central

The role of output. There are two (and only two) ways of seeking security in old age. One is to store current production for future use. With the exception of housing, this approach is inadequate for most consumption needs: it is expensive; it does not address uncertainty (e.g., about how the saver’s tastes might change); and it does not work for services that derive from human capital, notably medical services (for fuller discussion, see Barr, 2012).  

The second approach is for individuals to exchange production when younger for a claim on future production. There are two broad ways to do so: a worker could save part of his or her wages so as to accumulate assets that would be exchanged for goods produced by younger people after his or her retirement; or the worker could obtain a promise—from children, employer, or government—that he or she would be given goods produced by younger workers after his or her retirement. The two main ways of organizing pensions broadly parallel these two

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1This is true even for the simplest financial arrangements. Banks may offer higher interest rates on new accounts while leaving the terms of existing accounts unchanged, relying on the inertia of existing savers. In some countries regulation restricts the freedom of banks to offer different interest rates in this way.
The Role of the Public and Private Sectors in Ensuring Adequate Pensions

A fundamental purpose of pensions is to allow people to continue to consume after they have stopped working. Pensioners are not interested in money per se, but in consumption. Thus, future output is central. PAYG and funding are simply financial mechanisms for organizing claims on that future output. In macroeconomic terms, the differences between the two approaches should not be exaggerated.

The salience of output remains true in an open economy. In principle, pensioners are not constrained to consumption of domestically produced goods, but can consume goods produced elsewhere so long as they can organize a claim on those goods. If British workers use some of their savings to buy Australian firms, they can in retirement exchange their share of the firm's output for Australian goods, which they then import to the United Kingdom. This approach is useful but not foolproof. It does not work if Australian workers all retire; thus the age structure of the population in the destination of foreign investment matters. In addition, if large numbers of British pensioners exchange Australian dollars for other currencies, the Australian exchange rate might fall, reducing the real value of the pension. Thus, the ideal country in which to invest has a young population and products one wants to buy and political and financial stability and is large enough to absorb the savings of other countries with aging populations. Countries with aging populations include almost all of the Organization for Economic Cooperation and Development (OECD), and many others, including China.

Overlooking the importance of output leads to faulty, or at least oversimplified, analysis. Two important examples are discussed below.

**Implication for policy:** Funding is not an automatic solution to demographic change. Though the point was shown to be flawed many years ago, it is widely believed that funding necessarily assists pension finance in the face of demographic change.

Suppose that a large workforce in period 1 is followed by a smaller one in period 2. In a pure PAYG system, all else constant, contribution revenues decline, creating upward pressure on the contribution rate, downward pressure on the level of pensions, or both.

It is argued that funding can ease the problem: each member of the large workforce in period 1 builds up pension savings; the pension of a representative worker exactly equals those savings; if there is a large number of such workers, it is argued that this is not a problem because the average worker accumulates enough to pay for his or her own pension. That argument is correct as far as finance goes but may not provide workers with the consumption they expect. Unless a decline in the number of workers has no effect on output, output will fall, and hence consumption

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2 This author's first paper on the topic was published in 1979; for a more recent restatement, see Barr (2002).
or investment, or both, will fall. Lower rates of return or higher prices deny pensioners the consumption they expected; or mandatory increases in pension saving by workers reduce their consumption by more than they would choose; or the increase in the combined consumption of workers and pensioners is at the expense of investment, and hence puts future growth at risk. As noted, PAYG and funding are both mechanisms for organizing claims on future output; because demographic change generally affects that output, it causes problems for pension systems however their finance is organized (for fuller discussion, see Barr, 2012).

Even more clearly, suppose that the birth rate is stable but the life expectancy of pensioners increases. With pure PAYG the resulting increase in the number of pensioners requires a higher contribution rate or lower monthly benefits. With funding and no change in interest rates, the sustainable level of monthly benefits is lower if retirement is longer.

What matters is not financial accumulation but output. If output increases, it becomes easier to meet the claims of both workers and pensioners. The solution to population aging lies not in funding but in output growth that meets consumption demand.

**Implication for policy: Funding does not necessarily contribute to output growth.** There are two potential links between funding and growth, each of which needs exploration. First, funding may increase national saving or may improve the effectiveness with which capital markets allocate savings to their most productive investment use (or it may do both).

Whether funding increases saving depends on the reaction of private savers and government:

- **Workers’ responses.** If workers are required to contribute an additional amount per month to a pension fund, they may partly or wholly offset those savings by reducing their voluntary savings.

- **Government responses.** If additional mandatory savings go into pension funds, government may borrow more, for example, to pay for PAYG pensions previously financed by workers’ contributions that now go into funded accounts.

Thus, the positive effects of the introduction of mandatory pension saving may be partly or wholly offset by private or public responses.

Second, does funding improve the effectiveness of financial markets? In two cases the answer is no. In advanced countries with highly developed financial markets, mandatory pension saving is unlikely to lead to significant improvement. At the other extreme, in countries with very limited capacity, the existing financial infrastructure is weak, making mandatory membership in pension plans highly risky. Between the two extremes is a range of country capacity in which there is a possibility of improving capital markets, but also a risk that returns might be low or that government might have to bail out the pension system if private institutions fail. Inadequate markets can yield low returns and are likely to have high administrative costs. But net gains are also possible given that
capital markets that work better increase economic efficiency and hence economic growth.

An alternative approach is to encourage voluntary pensions as a stimulus to market development, particularly in a large economy.

Does higher saving increase output? The simplest argument is that a move to funding (1) increases savings, which (2) increases investment, which (3) increases output:

• As just discussed, a move to funding does not necessarily increase national saving.
• The link between higher saving and increased investment is not automatic. Instead, saving could drive up the prices of assets in limited supply, for example, urban land.
• An increase in investment may not greatly increase output. Inefficient capital markets can lead to a low marginal product of investment, as in the communist countries, where rates of investment were very high, but growth rates low, and in some countries eventually negative.

Thus, funding may increase output, but not always.

**Different Pension Systems Allocate Risks Differently**

Pensions help to transfer consumption from the present to the future during a person’s lifetime. But the future is uncertain, including as a result of the risks outlined in Box 3.1. Different pension systems allocate these risks differently. It is useful to recognize the varying underlying philosophies in different systems. Different pension arrangements are discussed in ascending order of risk distribution.

**BOX 3.1**

**Multiple Risks**

The future is inherently uncertain, and includes systemic risks, market risks, and risks connected with individual behavior.

Systemic risks emanate from macroeconomic turbulence, demographic risk (e.g., longer life expectancy and lower fertility rates), and political risk.

Market risks arise in various ways. Workers face earnings risk connected with labor market and health risks. They also face investment risk; for example, accumulations held in the stock market are vulnerable to market fluctuations. A third risk arises in annuities markets because a person’s annuity at a given age will be affected by the life expectancy of his or her birth cohort and by the discount rate used by the annuity provider.

A further set of risks relate to individual behavior. Individuals may make bad choices, for example, investing too heavily in equities too close to retirement. Fund managers may be incompetent or fraudulent. In addition, as the financial crisis demonstrated, managers may have different incentives from plan participants (see, for example, Woolley 2010).
**Funded defined-contribution plans.** In this arrangement, individual workers set aside a portion of their earnings to accumulate financial assets. These assets finance retirement either through an annuity or a series of withdrawals. In a pure plan, the risk of fluctuations in the return on assets during working life falls on the individual. If the worker buys an annuity at retirement, he or she faces the risk in pricing the annuities, reflecting both mortality projections and projected future returns. Once the annuity is purchased, risk is generally borne by the annuity provider. If the retiree does not buy an annuity, he or she faces mortality and return risks. In sum, the risks of different outcomes up to retirement fall on the individual because benefits adjust to what is in a worker’s individual account at the time of retirement. Annuitization shifts risks after retirement to insurers, but still puts the risk of the pricing of annuities at the start of retirement on the retiree.

**Funded mandatory defined-benefit plans.** In this arrangement, individual workers receive benefits based on their earnings history and length of service. Thus, both the return on assets and cohort mortality risks can be addressed by adjusting contributions. Because there is a single fund for all benefits, and changes in contribution rates are normally uniform across workers, such plans have a collective dimension. A plan need not be fully funded at all times—fluctuations in the degree of funding are a device for shifting risks across cohorts. In a pure defined-benefit plan the risk of varying returns falls on the plan sponsor. If the sponsor is a firm or industry, the risk of financing higher contributions can be spread across current and future workers via changes in wages, across shareholders through changes in profit distributions, and across customers through changes in the prices the firm charges for its products. Thus, the risk is allocated more broadly than in a defined-contribution plan. If the sponsor is the government, the risks are shifted to current and future taxpayers.

In a pure defined-contribution plan, therefore, benefits adjust to available resources; in a pure defined-benefit plan, resources are adjusted to meet the benefits that have been promised. In practice, firms and governments typically make adjustments to both resources and benefits. A second element is the collective aspect of having a single fund rather than individual accounts. Thus, a typical defined-benefit plan distributes risk more widely than does a typical defined-contribution plan. In addition, a central fund has lower administrative costs and sidesteps poor decision making by workers, although it is at risk of poor investment decisions by the fund managers. However, a central fund does not provide workers who have different levels of risk aversion with the opportunity to have different degrees of asset returns.

It is important that corporate pensions remain close to fully funded because corporations can fail, leaving the workers with less than had been promised, or leaving it to government to insure the workers. In contrast, in countries with well-managed economies, governments can have defined-benefit systems that are less than fully funded.

**PAYG defined-benefit systems financed by social security contributions.** In such plans, the risk to the income of the plan comes from fluctuations in the earnings of covered workers. In a pure arrangement (i.e., one financed entirely by
contributions, hence not able to run a deficit), risks are allocated among current workers through changes in contributions.

If the plan can run surpluses (partial funding) or deficits (borrowing against future contributions or using previous surpluses), the risks can be shared with future workers or eased by the presence of accumulated past contributions. Any accumulation involves risk in rates of return. The risk of the evolution of mortality rates remains—if people live longer, the cost of paying a given level of benefits will increase.

**Systems financed from general tax revenues.** In a system financed from general revenues or through a mix of social insurance contributions and general revenues, the risks are allocated across all taxpayers and hence, through government borrowing, across generations. Thus—crucially—a system with a PAYG element allows intergenerational risk sharing.

In practice, plans are not pure, and countries frequently adjust both contributions and benefits, thereby distributing risks between workers and pensioners.

**Implication for policy: How risks are distributed becomes an essential question.** When designing a new system or considering reform of an existing one, a central issue for policymakers to consider is where risks fall and how they should be allocated. As with income redistribution, different answers are possible, but ignoring the question is a major error.

**Transition Costs Matter**

A move toward funding requires that a larger fraction of workers’ contributions go into their funded pensions, leaving less to finance PAYG pensions, which then must be financed from some other source such as government borrowing. Thus, a move toward funding raises public spending during a transition period until a new steady state is reached. However, that period is long. Chile moved to mandatory individual funded accounts in 1981, but in 2008 public pension spending was still 5.2 percent of GDP (OECD, 2011).

**Implication for policy: Pay proper attention to the scale of transition costs.** It can be argued that the move toward funded pensions in central and eastern Europe in the late 1990s was based on optimistic fiscal projections, which, at least in part, explains why pension reform in some countries is being slowed (e.g., Poland) or abandoned (e.g., Hungary; see Simonovits, 2011).

**Implication for policy: Do not exaggerate the scale of implicit pension debt.** A related mistake is to exaggerate the fiscal costs of PAYG pensions. The concept of implicit pension debt is often used, but can be abused. Considering only the total of future liabilities (i.e., future pension payments) is misleading. This approach ignores (1) explicit assets (i.e., any accumulated funds); (2) the implicit asset of the government’s ability to levy taxes; and (3) the considerable improvement in people’s well-being from increased old-age security. Just as public debt never needs to be fully paid off so long as the debt-to-GDP ratio does not get too large, so publicly provided pensions need not be fully funded, as long as the unfunded obligations are...
not too large relative to the contributions base. The mistake, in short, is to argue that implicit pension debt should be minimized rather than optimized.

**Sound Principles of Design but No Single Best System for All Countries**

As discussed, pensions have multiple objectives, including consumption smoothing, insurance, poverty relief, and redistribution. The pursuit of those objectives must surmount a series of constraints:

- **Fiscal capacity.** Greater fiscal capacity makes it easier to find additional resources for a pension system.
- **Institutional capacity.** Stronger institutional capacity makes feasible a wider range of options for pension design.
- **The empirical value of behavioral parameters.** For example, the responsiveness of labor supply to the design of the pension system, and the effect of pensions on private saving, must be accounted for.
- **The shape of the pretransfer income distribution.** A heavier lower tail increases the need for poverty relief.

There is no single best system because (1) policymakers will attach different relative weights to the objectives, including the importance of poverty relief and how risks should be allocated within and across generations; and (2) the pattern of economic, institutional, and political constraints will differ by across country. If the objectives differ and the constraints differ, the optimum will generally differ.

**WHAT ROLE FOR GOVERNMENT?**

Just as there is no single best pension system, there is no single package of tasks for government. What government does will depend on, among other things, the design of the pension system, which, itself, will depend in part on government capacity. Nevertheless, some government tasks are clear. This section discusses some of the different ways in which pensions redistribute income, a task in which government is inescapably involved given that different pension designs have different distributional effects, the different blends of private and public arrangements that are possible, and lessons from international experience.

**Pensions and Redistribution**

Pensions redistribute resources in many ways, including across generations, by gender, and between people at different income levels.

Any pension system will affect the intergenerational distribution of income. Suppose policymakers are establishing a brand new pension system. If they introduce a PAYG system, the contributions of today’s workers pay for the pensions of today’s retirees; thus, the first generation of retirees receives a pension. If, instead, policymakers introduce fully funded pensions, the contributions of today’s workers
go into their own pension savings accounts; thus, the first generation receives little or no pension. The same argument applies in a country that already has a PAYG system: a move toward funding through higher contributions or toward lower benefits redistributes from current generations to future ones. Thus, any choice about how a pension system is financed is inescapably also a choice about the intergenerational distribution of income.

The fact that any policy choice between PAYG and funding necessarily affects redistribution across generations cannot be ignored. The gain to pensioners in later generations should not be presented as a Pareto improvement because it does come at the expense of the first generation.

Thus, a country considering a move toward mandatory funding has to consider whether the move would have desirable intergenerational redistributive effects. A decision to introduce funding will benefit a future generation of workers who, other things equal, can pay lower contributions. The question is whether there is a good reason to impose a larger contribution (because of the move to funding) on today’s workers so that, other things equal, future workers can pay a lower contribution. If, as frequently occurs in countries in Asia, today’s workers are relatively poor and subject to economic uncertainty, but growth rates are high, then workers in future generations are likely to be much better off. Imposing higher contribution rates on today’s workers so that future workers can have lower contribution rates or higher pensions may not be the right objective.

**Any choice of pension system redistributes resources by gender.** A requirement to price annuities on the basis of joint-life tables (i.e., to charge unisex premiums) redistributes, on average, from men to women because women tend to live longer than men.

Such redistribution, however, is only a small part of the story. Consider the following questions. How is consumption shared within the family? How should it be shared? How should the earnings of husband and wife be taxed? To what extent should taxes, current benefits (e.g., subsidized child care, or child benefits), and future benefits (such as pensions) encourage mothers with young children to accept paid work or discourage them from doing so? Should taxes and benefits be designed to encourage marriage? How should survivor pensions be organized? How should pensions be arranged for couples who divorce?

The main reason for posing these questions is to make it clear that none has an unambiguously correct answer. For example, should policy favor paid work or care activities? The matter is further complicated because it is often not clear whether a particular outcome, for example, a woman forgoing paid work to look after young children, is the result of choice or constraint. The conclusion is that, in this aspect of pensions as in others, there is not—and cannot be—a single optimal policy.

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3A situation is described as Pareto efficient if resources are allocated in such a way that no reallocation can make any individual better off without making at least one other individual worse off. A policy that makes someone better off and nobody worse off is referred to as Pareto improving.
Different designs have different redistributive effects by income level. One archetypal design (broadly that in New Zealand) has a flat-rate noncontributory pension plus individual saving accounts. In such a system, the degree of redistribution will be greater, all else equal, (1) the more progressive the tax system that finances the flat rate pension, and (2) the larger the flat-rate pension relative to the earnings-related pension. A different archetypal design has an earnings-related formula with a redistributive tilt. In the United States, for example, workers with higher earnings during their careers receive less pension per dollar of contribution from Social Security than do workers with lower earnings.

Conclusions are twofold. First, any pension system has redistributive consequences. Second, no single pension system is fairer than any other. For all the reasons discussed above, there is no single, unambiguously correct answer.

What Is Meant by “Private”?

“Public” and “private” pensions are discussed as though the choice is binary. A pure public pension could, for example, be a mandatory national PAYG system. A pure private pension would be voluntary membership in a fully funded individual account that is privately managed and with no tax advantages. In reality, between the two poles is a range of intermediate cases, so that in practice, pension systems vary widely with respect to the roles of government and the private sector.

Dimensions of the issue

- Is the system compulsory? A pure private pension plan will be voluntary, for example, 401(k) pension plans in the United States. If the system is compulsory, is it mandated by government (as, for example, in Chile), or by the industry or firm (as in many occupational plans)? Second, what is the size of the compulsory contribution? A system that has only a small compulsory contribution comes close to being voluntary.
- What is the extent of regulation—light or extensive?
- Who manages pension assets?
- Is financing public or private? A pure private plan will have no tax advantages.
- Who bears the risk? As discussed, different pension arrangements allocate risks differently. With voluntary saving in a fully funded individual account, all the risk falls on the individual saver. In other private arrangements (e.g., an occupational defined-benefit scheme), risks can be allocated more widely.

Problems with undue reliance on private solutions

Undue reliance on voluntary participation typically results in people not saving enough (see the earlier discussion of bounded will power). Appropriate roles for government range from “nudging” (for example, automatic enrollment) to mandated participation. If the problem of bounded will power is ignored, the resulting problem is elderly poverty.
Undue reliance on individual choice of pension provider is also suboptimal. Because of bounded rationality, people may choose badly or not choose at all. The government’s role, in ascending order of the degree of intervention, could include the following:

- Nudging through automatic enrollment (see the later discussion of the U.S. Thrift Savings Plan and of KiwiSaver in New Zealand);
- Mandatory membership in privately organized individual accounts, for example, as in Australia; and
- Mandatory membership in a public system of insurance and consumption smoothing as, for example, in Canada and Sweden.

If the problem of bounded rationality is ignored, adverse outcomes include selling of inappropriate financial products to ill-informed consumers, excessive charges, and elderly poverty.

**Problems with undue reliance on government solutions**

Government failure can arise in various ways. Governments may make profligate promises, or ones that seem reasonable when made but turn out in hindsight to have been based on overoptimistic assumptions. Or government may appropriate resources in funded accounts as, for example, in Argentina and Hungary (on the latter, see Simonovits, 2011). Or pensions may be poorly administered such that contributions are not collected effectively or benefits not paid accurately or promptly. Ignoring the possibility of government failure can lead to worse old-age security through lower pensions, greater worker and pensioner uncertainty about the security of future or current pensions, or both.

A second potential problem arises if governments make poor decisions about the way in which funded schemes under their control should invest funds. Government proclamation of the assets that pension funds must invest in is prone, at best, to attempting to honor multiple objectives; for example, government is legitimately concerned not only with old-age security but also with other objectives such as keeping employment rates high, pursuing economic growth, and so forth. At worst, asset choices by government are subject to political interference for nontransparent reasons. If these problems are ignored, investment outcomes will be poor, resulting in lower pensions. Not many countries do a good job; two that do are Canada and Norway (Canada Pension Plan, 2011; Norges Bank Investment Management, 2011).

**The choice of pension design will depend on a country’s objectives and constraints**

A system with a significant private element, for example, individual accounts, could make sense in a country that

- Gives poverty relief a relatively lower weight;
- Gives individual freedom a relatively high weight;
- Is not excessively risk averse;
• Can regulate financial markets effectively;
• Trusts financial markets; and
• Is suspicious of government failure.

A more public system could make sense in a country that
• Gives social solidarity a greater weight;
• Gives risk allocation a greater weight;
• Does not have major concerns about government failure; but
• Does have concerns about the conduct of financial markets.

INTERNATIONAL EXPERIENCE

Lessons Learned

Implementation matters. Good policy design is important. But the best design will fail to achieve its objectives without sufficient financial, political, and administrative capacity. Policy design that exceeds a country’s implementation capacity is bad policy design. Implementation, the importance of which is often not understood, requires skills that are just as demanding as policy design and needs to be considered from the start, not as an afterthought. Government has a central role in implementation of both public and private pension arrangements.

Financial capacity. Consumption by pensioners comes at the expense of consumption by workers, spending on investment, and other uses of resources. From a macroeconomic perspective, therefore, pensions are, in part, a device for allocating output between workers and pensioners. Clearly, the amount that is spent on pensions must be compatible with a country’s financial capacity.

Technical capacity for PAYG systems. Mandatory public pensions require significant public sector capacity. A public pension requires that government be able to
• Collect contributions effectively;
• Track individuals across changes of name, jobs, employment status, and location;
• Keep workers informed through regular statements;
• Calculate benefits accurately, including actuarial calculations to adjust benefit levels for the age at which they start for an individual;
• Pay benefits accurately and promptly;
• Project future contributions and benefits to adapt the system slowly to evolving economic outcomes; and
• Coordinate between central and subnational governments, if both are to have a role.
Simply listing these requirements emphasizes their enormity.

Technical capacity for funded individual accounts. Private pensions require that governments have the capacity to maintain macroeconomic stability, to regulate
financial markets, and to protect consumers in areas too complex for them to protect themselves. Regulation is subject to at least three strategic problems: that the regulatory regime collapses or is ineffective, that the state assumes de facto regulatory control, or that the management and regulation of pension funds crowds out other demands for scarce skills.

Private pensions also require private sector capacity (Barr and Diamond, 2008, Appendix 9.1), including the ability to collect contributions, keep records, inform workers, select portfolios, invest funds, and determine and pay benefits.

**Implication for policy.** Do not underestimate the importance of implementation, nor delay consideration of how a pension will work in practice. A common mistake is overoptimism about institutional capacity. A particularly egregious error is to argue that because benefits will not need to be paid until later, there is no urgency to work out the arrangements for doing so.⁴

**Both mandatory and voluntary pension systems critically depend on effective government.** As discussed, government has a central role in running a mandatory system. However, voluntary pensions do not relieve government of responsibility. Private pensions, whether mandatory or voluntary, depend on government to set rules and to enforce them. Government must be able to enforce compliance with contribution conditions, to protect asset accumulations, to maintain macroeconomic stability, and to ensure effective regulation and supervision of financial markets, including insurance and annuities markets. Such regulation is vital to protect individuals in areas too complex for them to protect themselves. It requires tightly drawn-up procedures and a cadre of people with the capacity and will to enforce those procedures. More generally, private markets function best when government, in its legislative role, has put in place clear rules and where enforcement is even handed, not corrupt, prompt, and predictable.

Similar requirements hold for mandatory pensions that rely on private providers. Chile offers an illustration. Its system is sometimes described as relying on unfettered markets rather than government, but this is a misreading. The description overlooks the fact that, at the time the reforms were introduced, a substantial government surplus helped to finance the transition. The individual accounts are handled by private firms that specialize in such work, and those firms are tightly regulated by an agency set up specifically for this purpose. Regulations, which have evolved, restrict portfolios, the structure of charges to workers, and the process of competition between firms.

**Administrative costs matter.** As discussed, funded individual accounts that allow workers to choose among pension providers generally have high administrative costs. Moreover, such costs are largely a fixed cost per account, and thus bear most

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⁴Even though great attention was paid to administrative requirements when planning the pension reforms in Poland that were implemented in the late 1990s, the reforms faced considerable administrative problems in the early days (Chłoń-Domińczak, 2004, especially pp. 165–71).
heavily on small accounts and in smaller countries with limited options for economies of scale, and even more so in countries where most people have low earnings. The cumulative effect of administrative charges is considerable. For example, an annual charge of 1 percent of a worker’s account would reduce the accumulation at the end of a 40-year career by roughly 20 percent (Barr and Diamond, 2008). Sweden has a central clearing house to reduce costs and rules limiting charges by funds, but still has charges that reduce balances at the end of a career by 14 percent (Swedish Pensions Agency, 2011).

Centralized investment by a government agency can minimize transaction costs either for individual accounts, as in Singapore, or with a diversified portfolio for a defined-benefit system, as in Canada. The international history of the quality of investment is very mixed. Some countries have done poorly with centralized investment. With recent focus on incentives and the transparency of the investment process, some countries have garnered returns comparable to those of private investors. Good quality investment is more likely with full and transparent accounting, including a clear and explicit remit; independent, nonpolitical management; and detailed, audited accounts that are published regularly. However, putting in place a system that can ensure good quality investment is difficult, particularly if experience with pension investment is limited.

Examples of Pension Design

What do these various lessons imply for pension design? This section discusses four useful policy directions: noncontributory basic pensions; later and more flexible retirement; simple, low-cost savings plans; and notional defined-contribution (NDC) pensions.

Noncontributory basic pensions

The idea. A noncontributory basic pension, also called a citizen’s pension or a social pension, is financed from taxation and paid at a flat rate on the basis of age and residence rather than on individual contributions.

The contributory principle assumes that workers have long histories of stable employment. At least three reasons indicate why history has not borne this out. First is the changing nature of work: people are less likely to be in full-time employment for the whole of their careers; they have spells of full-time employment, of self-employment, and of part-time work, along with spells outside the labor force. Thus, the contribution record of a representative worker is less complete today than in earlier decades. Second, family structures have become more fluid, with a weaker association between marriage and children, and divorce more common. Third, women's labor force participation has increased.

The changing nature of work means that, on average, workers will have less-complete contribution records, so that the contributory principle no longer provides poverty relief as effectively as it once did. The second and third reasons suggest that basing a woman’s entitlement on her husband’s contributions (regardless of whether it was ever desirable) is no longer feasible.
Noncontributory pensions strengthen poverty relief: they can cover everybody and can pay a pension high enough to keep people out of poverty. They also have advantages for gender balance because it is women who tend to have the most fragmented contribution records. In addition, the benefit is fairly well targeted, because age is a useful indicator of poverty, and noncontributory pensions can be made internationally portable on a pro rata basis.

Various instruments can be used to ensure that noncontributory benefits are affordable, in particular, the size of the monthly pension and the age at which the pension is first paid. The pension can also be subjected to an affluence test, such that retirees with the highest incomes do not receive the benefit.  

**International examples.** The United Kingdom illustrates the issues with coverage in a contributory system. Until 2010, workers needed more than 40 years of contributions to receive a full basic state pension. In 2005, only 80 percent of men and 35 percent of women had full contribution records. The problem was not that the authorities could not collect contributions but that the contributory principle for poverty relief no longer fit current labor markets and family structures. For those reasons, the British government relaxed the contributory requirements.

Several OECD countries have noncontributory pensions, including Australia, Canada, Chile, the Netherlands, and New Zealand; Canada and the Netherlands have among the lowest rates of elderly poverty in the world. Chile introduced a noncontributory pension in 2008 with the explicit purpose of addressing elderly poverty (Box 3.2). Duflo (2003) shows that if the grandmother lives with adult children and grandchildren, the noncontributory pension in South Africa benefits the wider family, including health gains for the grandchildren.  

Noncontributory pensions can be workable in countries with large rural populations and in developing economies (Barr, 2012). More specifically, Barr and Diamond (2010b), written at the request of the government of China, make recommendations about pension reform. Sections 7 and 8 of that report suggest that China should introduce a noncontributory pension (called a citizens’ pension) for all older people. The suggestion was for a national system that would cover urban workers, rural workers, and migrant workers. The pension would be based on age and residence and subject to a pensions test, that is, the noncontributory pension would be progressively withdrawn in proportion to any pension a person has from the mandatory contributory pension system. Thus, the system would screen out pensioners who previously had high formal sector earnings.

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5 For example, in 2010 95 percent of Canadian pensioners received the full Old Age Security pension, which is noncontributory; only the top 2 percent of income recipients received no Old Age Security pension at all.

6 More generally, Fishback and others (2007) show the improved health outcomes that followed surprisingly rapidly after the introduction of a federal safety net in the United States as part of the New Deal.
Later, but more flexible, retirement

The idea. People are living longer healthy lives, which is very good news. But a given pension beginning at a given age is increasingly expensive with greater life expectancy. The problem is not that people are living too long but that they are retiring too soon. The obvious solution is that the pensionable age should rise in a rational way as life expectancy increases. The argument for later retirement is stronger because many people enjoy their work and may not want to retire.

Alongside later retirement is a separate argument for more flexible retirement. When retirement was invented, a typical 65-year-old worker was weak and infirm, and interfered with the productivity of younger workers. The purpose of pensions was to weed dead wood out of the labor force, so it made sense to make retirement mandatory and complete. Since then, however, countries have gotten richer and can afford to give people a period of leisure at the end of their working lives. That, however, means that the purpose of retirement has changed. Policy should take account of the fact that people vary widely in their preferences and personal circumstances. Many people do not want to retire fully as soon as they
are allowed—because of the extra earnings, because of possible extra pension benefits, or because they continue to enjoy working.

The most efficient and equitable approach is to increase the average retirement age to accommodate resource pressures, but to recognize differences across individuals by offering choice during a person’s time path from full-time work to full retirement. Making retirement more flexible would be good policy even if there were no problem in paying for pensions.

**International examples.** OECD countries are increasingly taking action on retirement age. The United States is raising its retirement age from 65 to 67. The U.K. Pensions Commission (2004a, 2004b, 2005) handled the politics of change with great skill; thus, the state pension age will rise from 65 to 66 in 2020, with further increases thereafter. The Netherlands is also in the process of increasing retirement age, and many other countries are discussing the issue.

**Simple, cheaply administered saving plans**

**The idea.** Earlier discussion suggests a number of lessons rooted in second-best analysis:

- **Make pensions mandatory or use automatic enrollment.** Bounded rationality and bounded will power explain why financial education and voluntary participation will generally be insufficient. Automatic enrollment turns inertia to the individual’s advantage—once automatically enrolled, most people will stay in the plan.

- **Keep choices simple** by offering a small number of clearly differentiated funds. In sharp contrast with theory, this type of constrained choice is a deliberate and welfare-enhancing design feature, respecting the constraint of bounded rationality.

- **Include a default option** for people who make no choice. That option should include life-cycle profiling, whereby young people’s savings are mainly in the stock market, with assets moving into government bonds as a person moves toward retirement age.

- **Keep administrative costs low.** To do so, account administration, that is, the back office tasks such as record keeping, should be decoupled from fund management, the investment decisions. Record keeping should be centralized to exploit administrative economies of scale. Investment decisions can be handled in two strategic ways: they can be outsourced to the private sector in tranches offered on a competitive basis (e.g., the U.S. Thrift Savings Plan, discussed below), or they can be run by government (for example, the Norwegian government’s petroleum fund; Norges Bank Investment Management, 2011). Either approach, however, makes significant demands on the quality of public and private institutions.

For voluntary pensions, an additional option is to allow people to commit now to action in the future, thus making use of procrastination (i.e., bounded will power) to assist policy. People are happy to promise to save more in the future, as in the “Save More Tomorrow” plan of Thaler and Benartzi (2004).
International examples. The Thrift Savings Plan, organized by the U.S. government for federal civil servants (www.tsp.gov), is an example of this approach. Workers are automatically enrolled and choose from six funds, for example, an equities fund, a government bonds fund, and so on. There is also a lifecycle option. A government agency keeps centralized records to keep costs low. Fund management is on a wholesale basis. Investment in private sector assets is handled by private financial firms that bid for the opportunity and that have to manage an identical portfolio for their private clients, providing some insulation against political interference. As a result, administrative costs are astonishingly low: as little as 6 basis points annually, or $0.60 per $1,000 of account balance.

In 2012, the United Kingdom introduced a similar system, the National Employment Savings Trust (NEST), established under the U.K. Pensions Act 2008, to provide a low-cost savings vehicle, particularly for low-to-moderate earners (http://www.nestpensions.org.uk/).

KiwiSaver individual accounts in New Zealand, introduced in 2007, are another variant, and the first example of automatic enrollment on a national scale, reinforced by a government match for contributions up to a ceiling, plus a one-time payment when the account is first opened. The combined effect of these factors was considerable. In 2007, 13 percent of workers belonged to an occupational plan and 5.5 percent to a personal plan. KiwiSaver achieved coverage of 44 percent within its first year, about three-quarters through occupational provision, the rest through personal plans (Rashbrooke, 2009).

The lessons from information economics and behavioral economics also apply to the decumulation phase, suggesting mandatory annuitization of at least part of a worker’s accumulation.

Partially funded notional defined-contribution plans

Simple, cheaply administered arrangements such as the Thrift Savings Plan are one way to organize consumption smoothing. As noted in the discussion on risk allocation, however, any such fully funded plan can allocate risks only among current participants, that is, among workers and pensioners currently in the system. In contrast, a partially funded system can allocate risk more widely than across individual accounts. This section discusses a partially funded notional defined-contribution (NDC) pension system as an example of the approach.

The idea. Pure NDC pensions are similar to pure defined-contribution plans in that contributions are notionally accumulated to determine a balance that is converted into an annuity at retirement, but different, in that they are not fully funded.

NDC arrangements work as follows:

- Each worker pays a contribution equal to a fraction of his or her earnings, which is credited to a notional individual account, that is, the state “pretends” that there is an accumulation.
• The cumulative contents of the account are credited with a notional interest rate, typically the rate of growth of average wages, or of the total wage bill.
• Workers’ contributions are partly used to pay the benefits of current pensioners on a PAYG basis and may also be partly used to accumulate a buffer fund.
• When a person retires, the value of his or her notional accumulation is converted into an annuity on an actuarial basis—the present value of the flow of pension benefits (given the worker’s age and the life expectancy of his or her birth cohort) is equal to the value of the person’s notional accumulation, using the notional interest rate as the discount rate.
• However, the account balance is for record keeping only; the system does not own matching assets invested in the financial market.

Thus, NDC plans mimic funded defined-contribution plans by paying an income stream the present value of which during the person’s expected remaining lifetime equals his or her accumulation at retirement, but with an interest rate set by legislated rules rather than market returns. As with defined-contribution pensions, NDCs have multiple ways of incorporating a redistributive element, including a minimum pension guarantee or by subsidizing the contributions of people who are out of the labor force because they are bringing up young children or are unemployed.

NDC plans have a range of potential advantages. They are simple from the viewpoint of the worker. They are centrally administered, and thus have lower administrative costs than systems that offer workers choice. They do not require the institutional capacity to manage funded plans. They avoid much of the risk of funded individual accounts because, to a significant extent, they are not subject to the volatility of capital markets. A partially funded NDC system with a sufficiently large buffer fund can allocate risk more widely than can fully funded arrangements, with advantages in both risk allocation and robustness in the face of economic turbulence. Finally, partially funded NDC plans can change over time into simple individual accounts, such as Thrift Savings Plan–type arrangements.

**International examples.** Countries with NDC pensions or similar arrangements include Latvia, Poland, and Sweden. Sundén (2009) explains how the partially funded NDC system in Sweden adjusts to changing demographic and economic conditions. Of particular interest, Sundén describes the phased adjustment of benefits in Sweden following the 2008 economic crisis, illustrating the ability of such arrangements to allocate risk.

Barr and Diamond (2010b, section 10) criticize the system of mandatory funded individual accounts in China with regard to both policy design and implementation, and suggest that the system should move toward a partially funded NDC arrangement:

> China introduced individual accounts as part of the pension reforms in 1997, with an expectation of full funding. However funding has not occurred in line with the

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7For a more detailed discussion, see Barr and Diamond (2011).
standard model. There are no institutions for workers to select individual portfolios nor to make direct investments in different assets. The need to pay current benefits has not left enough resources to purchase assets as originally designed, seriously undermining the credibility of the new system. Since full-scale funding with individual portfolios is not a viable option in the near term, what is needed is to reform the accounts into a credible, transparent system with the flexibility to evolve in whichever direction makes sense in the future. . . . We recommend that China set up the existing individual accounts as notional defined contribution accounts (along the lines of Sweden’s Inkomstpension); this approach allows for eventual evolution into a mix of funded and notional accounts . . . , or eventually possibly only a funded account. As in Sweden, there should be a fund backing the accounts in general, but not attributed to specific individual accounts. The immediate task is to make the current accounts function better given the current level of funding. (Barr and Diamond, 2010b, p. 45).

The following specific recommendations were made:

By the end of the next five-year period, China should aim to have a system of individual accounts similar to the Inkomstpension in Sweden, known internationally as NDC. Implementing individual accounts through partially centrally funded NDC arrangements has significant advantages in China’s current circumstances.

- It offers consumption smoothing to today’s workers in a similar way to funded DC plans, and thus maintains individual accounts as a central part of the pension system.
- Because no additional fund is built up the arrangement does not require today’s (poorer) workers to make larger contributions so that future (richer) generations of workers can make smaller contributions, thus avoiding unsatisfactory intergenerational redistribution.
- It does not require the considerable private-sector financial and administrative capacity of funded plans with individual choice, since the plan is run by the public authorities.
- It is less risky for workers, since the rate of return avoids the short-run volatility of assets in the capital market. This is particularly important at a time when banking and financial market institutions are still developing and given current global economic uncertainty.
- The arrangement is a basis for a future move to full funding, or both funded and notional defined contribution accounts should a future government decide that that suits China’s then economic and social circumstances. (Barr and Diamond, 2010b)

**Pension Design and Economic Development**

The previous section discussed options with desirable characteristics. This section, following Barr and Diamond (2009), discusses what is feasible, in particular, the widening array of options as fiscal and institutional capacity constraints subside.

Discussion is couched in the conventional terms of first-tier pensions (aimed mainly at poverty relief), second-tier pensions (mandatory, intended mainly to
provide consumption smoothing), and third-tier pensions (voluntary, toacommodate differences in individual preferences).

The discussion is limited in two important ways: First, it considers three stylized types of country: a low-income developing country, a middle-income developing country, and an advanced country; not all countries fall neatly into one of these categories. Second, the examples are only illustrations, and not intended to be a template.

The examples are based on two assumptions: that the level of benefits, the age at which a pension is first paid, and similar parameters, are consistent with fiscal sustainability; and that alongside pensions, some means-tested support for the elderly is provided.

Illustrative Pension Systems for a Low-Income Country

First tier. Choices are highly constrained:

• A very poor country may be unable to finance or administer a national system of poverty relief; in particular, such a country will generally not have the capacity to administer an income test, relying instead on family, charitable organizations, and local discretion to establish which individuals or households should receive welfare transfers.

• As capacity develops, it becomes possible to use general tax revenues for limited poverty relief through transfers to subnational governments or through a national system that targets by age.

Second tier. A low-income country will generally not have the capacity to manage a mandatory earnings-related system, which should thus be regarded as an aspiration for the future.

Third tier. Any voluntary saving plans should not be tax favored because fiscal resources are highly constrained, and tax advantages are typically regressive. It is, however, important to provide a simple, reliable opportunity for voluntary savings.

Illustrative Pension Systems for a Middle-Income Country

First tier. Countries in this category have a choice of

• A noncontributory, tax-financed pension (as, for example, in Chile); or

• A simple contributory PAYG pension, for example, a flat-rate pension based on years of contributions.

Second tier. The choice is between

• A publicly organized, earnings-related, defined-benefit pension, or possibly an NDC pension; and

• A defined-contribution pension as part of a provident fund (as in Malaysia and Singapore), or with sharply limited individual choice.
Policymakers should consider the extent to which any tax favoring is regressive.

**Third tier.** Voluntary, defined-contribution pensions are possible at the level of the firm or individual. Regulation is important, and any tax favoring should avoid undue regressivity.

**Options for Pension Systems in an Advanced Economy**

**First tier.** Countries should consider either

- A noncontributory, tax-financed pension; or
- A contributory pension aimed at poverty relief (as in many countries, including the United Kingdom and the United States), with an array of different designs.

**Second tier.** The menu includes (separately or in combination)

- A publicly organized, defined-benefit pension (as in Canada);
- An NDC system (as in Sweden);
- An administratively inexpensive saving plan with access to annuities (such as the Thrift Savings Plan in the United States or NEST pensions in the United Kingdom), or simple saving plans such as KiwiSaver in New Zealand;
- Mandatory, funded, defined-benefit pensions sponsored by industry (the de facto system in the Netherlands); or
- Funded, defined-contribution pensions (as in Chile and a small part of the system in Sweden).

**Third tier.** Voluntary, defined-contribution pensions can be organized at the level of the firm, the industry, or the individual; regulation (particularly of defined-benefit plans) is important and difficult, and any tax favoring should avoid excessive regressivity.

Clearly, choices expand as fiscal and administrative capacity grows. An advanced economy has a wide array of choices and, given the earlier conclusion that there is no single best system, it is not surprising that richer countries have undertaken a range of very different systems. However, the fact that a country is capable of implementing a complicated system does not mean that such a system is a good idea or necessarily superior to a less administratively demanding one. New Zealand has a simple pension system through choice, not constraint.

**CONCLUSION**

**A wide range of systems.** Countries have implemented very different pension systems, in part reflecting different relative weights for various objectives:
• **Mainly poverty relief.** An example is the system in New Zealand, which comprised a noncontributory pension plus (until 2007, when KiwiSaver was introduced) voluntary consumption smoothing.

• **Largely consumption smoothing.** An example is Singapore’s state-administered Central Provident Fund, which is mainly a savings plan.

• **Both objectives.** Canada has a combination of Old Age Security and Guaranteed Income Supplement aimed mainly at providing poverty relief, plus the earnings-related Canada Pension Plan aimed mainly at providing consumption smoothing. The Netherlands has a noncontributory PAYG universal pension in addition to funded occupational pensions.

• Chile has strengthened poverty relief by introducing a noncontributory pension alongside its existing system of individual funded accounts.

• The extent of mandatory funding varies widely: Chile relies substantially on funding, whereas countries such as France, Germany, and Italy are largely PAYG.

**But only four potential solutions to problems of pension finance.** If a country has problems financing its pension system, there are only four potential solutions. A country can undertake one or a combination of the following:

• **Reduce the level of pension benefits.** This policy reduces pension spending by lowering the living standards of pensioners, and hence raises the risk of elderly poverty.

• **Raise the age at which pension is first paid,** with no compensating increase in the level of the pension. This policy reduces pension spending not by lowering living standards in retirement but by reducing the duration of retirement.

• **Increase the contribution rate.** This policy reduces the living standards of workers. In many countries, because the retirement age has increased little, contributions are already high, limiting the scope for significant further increases.

• **Adopt policies to increase national output.** This policy increases the contribution base and hence makes it easier to finance a given level of pensions.

**Mistakes to avoid.** A country should not

• Reform piecemeal and in haste, but strategically and with a long time horizon;

• Set up a system beyond its capacity to implement;

• Introduce a mandatory, earnings-related pension system until it has robust capacity to keep records accurately for 40 or more years;

• Introduce individual funded accounts (whether mandatory or as an option in a mandatory system) until it can regulate investment, accumulation, and annuitization;

• Underestimate how administrative costs cumulate over a long life; and
• Underestimate transition costs, hence should not move toward funding if doing so risks breaching fiscal constraints.

What really matters. In many ways, two factors matter above all:

• Good government is important regardless of the type of pension system a country chooses to adopt. Effective government will be able to implement PAYG pensions responsibly. It will also generally be able to maintain the macroeconomic stability and regulatory standards on which funded pensions depend.

• Economic growth is also important for any pension arrangement. Output growth makes it easier to finance PAYG pensions by broadening the contributions base, and easier for funded pensions to deliver planned living standards in retirement by ensuring that output is sufficient for pensioners to buy without causing price inflation or asset market deflation.

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The Role of the Public and Private Sectors in Ensuring Adequate Pensions


Pension Reform and Equity: The Impact on Poverty of Reducing Pension Benefits

BAOPING SHANG

INTRODUCTION

A primary objective of public pension systems is to provide adequate levels of retirement income to ensure that people are not at risk of poverty in old age. On average, public transfers in Organization for Economic Cooperation and Development (OECD) countries, consisting of earnings-related pensions and means-tested benefits, account for about 60 percent of the total income of the elderly. Income from work and other sources (including private pensions and income from the returns on nonpension savings) each account for about 20 percent of the total (OECD, 2011). Although figures for the OECD as a whole are not readily available, the share of public transfers to the elderly poor is most likely higher. For example, coverage in voluntary funded pension plans among workers in the poorest decile is, on average, about 10–20 percent and much lower than that in the higher income deciles (Antolin, 2008).

Incomes of the elderly are generally lower than that of the working-age population as a whole, and elderly poverty rates are correspondingly higher. However, growing evidence suggests that poverty rates among older people have been declining, reflecting the substantial increase in the generosity of pensions in recent decades (OECD, 2011; Zaidi, 2011). But recent reforms to public pension systems aimed at containing the rise in public pension spending, for example, by reducing pension benefits, are projected to result in substantial declines in income replacement rates (the average pension benefit divided by the average wage) up to 2030.¹ The decline will be even larger between 2010 and 2060. Replacement rates in all but one country are projected to decline during that period, and the average decline is nearly 20 percent. These reforms could potentially have adverse impacts on poverty among the elderly if no additional compensating measures are adopted.

¹Projections for the 23 European Union countries for which data are available indicate that public pension replacement rates will decline in all but three countries, averaging a decline of about 9 percent between 2010 and 2030. The 23 European Union countries are Austria, Belgium, Bulgaria, Cyprus, the Czech Republic, Denmark, Estonia, Germany, Greece, Spain, Finland, France, Hungary, Italy, Luxembourg, Lithuania, Malta, Norway, Poland, Romania, the Slovak Republic, Slovenia, and Sweden.
The purpose of this chapter is to examine the potential effects of the projected decline in replacement rates on poverty among the elderly. The rest of the chapter is structured as follows: The next section describes the data and patterns of elderly poverty and public pension replacement rates in advanced and emerging European economies. It is followed by a section that provides econometric estimates of the impact of public pension replacement rates on elderly poverty. The subsequent section analyzes the implications on elderly poverty of the projected changes in public pension replacement rates in the coming decades. The final section concludes the chapter with a discussion of policy implications.

**PATTERNS OF ELDERLY POVERTY AND PENSION REPLACEMENT RATES**

The main data source for this chapter is the Eurostat indicators for poverty and public pension replacement rates. The data are available by gender and age group, and cover 32 advanced and emerging European economies. At-risk-of-poverty data are available for the period 1995–2012, whereas the aggregate replacement rate is only available for 2003–12. In addition, the availability of data varies by country and only a few observations are available for 2012.  

The at-risk-of-poverty rate is a measure of relative poverty in the elderly population (ages 65 and older). It is defined as the share of persons 65 and older with equivalized disposable income below the at-risk-of-poverty threshold, which is set at 60 percent of the national median equivalized disposable income. This type of relative indicator does not measure absolute poverty, but low income in comparison with other residents in the country; thus, it does not necessarily denote a low standard of living. In addition, measuring relative income poverty does not capture poverty’s multidimensional nature. A broader measure would consider the level of indebtedness, the extent of poor health, the number of people living in inadequate housing and poor environmental conditions, and the extent to which people have inadequate access to public services. Such a broad measure, however, is not readily available for a large number of countries for an extended period.

Three types of at-risk-of-poverty rates are available at Eurostat: (1) at-risk-of-poverty rate before pensions and other social transfers, (2) at-risk-of-poverty rate including pensions but not other social transfers, and (3) at-risk-of-poverty rate after pensions and other social transfers. This chapter defines pensions as the sum of the following social benefits: disability pensions, early-retirement benefits resulting from reduced capacity to work, old-age pensions, anticipated old-age

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2Turkey is dropped from the analysis because data are only available for a few years.

3Equivalized disposable income is the total income of a household, after taxes and other deductions, that is available for spending or saving, divided by the number of household members converted into equalized adults; household members are equalized or made equivalent by weighting each according to their age, using the so-called modified OECD equivalence scale. The 60 percent threshold is most often referred to by Eurostat, but alternative poverty thresholds are also available at Eurostat.
pensions, partial pensions, survivors’ pensions, and early-retirement benefits received for labor market reasons. “Other social transfers” refer to nonpension income support, which may or may not be targeted at the elderly.

The poverty rate among the elderly in this sample of countries is more than 85 percent in 2011 when pensions and other social transfers are not included, indicating that work income and income from private savings are low for most of the elderly. Pension income substantially reduces elderly poverty, to about 20 percent; other social transfers further lower elderly poverty to about 15 percent (Figure 4.1). Data also confirm that elderly poverty decreased between 1995 and 2011. Information for 12 countries with complete data between 1995 and 2011 shows that elderly poverty declined by nearly 30 percent during this period.

The female at-risk-of-poverty rate is slightly higher than that for males. Women are less likely to be in paid employment, tend to have lower pensions, and are more involved in unpaid family care. In addition, when they are in work, they usually earn less than men. In 2011, the female at-risk-of-poverty rate was higher than that for males except in two countries (Ireland and Malta), and the gap is, on average, about 6 percentage points (Figure 4.2). This gap mostly reflects the larger impact of pension benefits for males; private income and other social transfers have very similar impacts on both female and male poverty. Trends for the 12 countries with complete data indicate that the gap has been consistently narrowing—by more than 30 percent between 1995 and 2012.

Elderly poverty also varies significantly by educational attainment. Poverty rates for those with lower secondary education or less are twice the level of those having upper secondary and postsecondary but no tertiary education. They are four times the level of those that have completed the first and second stages of tertiary education (Figure 4.3). This suggests that it may be unrealistic to expect current

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Footnote: Anticipated old-age pensions are periodic payments intended to maintain the income of beneficiaries who retire before the legal or standard age as established in the pension scheme.
Figure 4.2  At-Risk-of-Poverty Rate by Gender, 2011 (Percent; including pensions and other social transfers)

Sources: Eurostat; and author’s estimates.

Note: AUT = Austria; BEL = Belgium; BGR = Bulgaria; CHE = Switzerland; CYP = Cyprus; CZE = Czech Republic; DEU = Germany; DNK = Denmark; EST = Estonia; GRC = Greece; ESP = Spain; FIN = Finland; FRA = France; GBR = United Kingdom; HUN = Hungary; HRV = Croatia; IRL = Ireland; ISL = Iceland; ITA = Italy; LUX = Luxembourg; LTU = Lithuania; LVA = Latvia; MLT = Malta; NLD = Netherlands; NOR = Norway; POL = Poland; PRT = Portugal; ROM = Romania; SVN = Slovenia; SWE = Sweden; SVK = Slovak Republic.

Figure 4.3  At-Risk-of-Poverty Rate by Educational Attainment (Percent)

Sources: Eurostat; and author’s estimates.

low-income and low-skilled workers (who are overrepresented among the elderly poor) to save more during their lifetimes to compensate for falling replacement rates.

Relative to other age groups, the elderly have higher at-risk-of-poverty rates (Figure 4.4). However, elderly poverty decreased significantly in 2010 and 2011.

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because pension income has been less sensitive to the economic downturn since the onset of global financial crisis, whereas the poverty of other age groups increased (Figure 4.4, panel 3). It is of interest that the elderly receive smaller social benefits than other age groups as demonstrated by the fact that the poverty rate of the elderly drops less than that of other groups when other social benefits are included (Figure 4.4, difference between panels 2 and 3).

The “aggregate replacement rate” is the best measure for approximating the generosity of pension benefits for the entire elderly population. The aggregate replacement rate is defined as the ratio of median individual gross pensions of persons ages 65–74 relative to median individual gross earnings of persons ages 50–59 (excluding other social benefits). The replacement rates for both males and females have been increasing since 2009 (Figure 4.5). This increase, however,

**Figure 4.4** At-Risk-of-Poverty Rate by Age Group (Percent)

![Figure 4.4](image)

Sources: Eurostat; and author’s estimates.

**Figure 4.5** Aggregate Replacement Rate by Gender (Percent)

![Figure 4.5](image)

Sources: Eurostat; and author’s estimates.
may reflect more of a decline in the earnings of the working-age group than an increase in the pension benefits of the elderly. The aggregate replacement rate was very similar for men and women until the onset of the global financial crisis, but a gap has since developed, with men experiencing a larger increase than women.

**RELATIONSHIP BETWEEN PUBLIC PENSION REPLACEMENT RATES AND ELDERLY POVERTY**

Few studies have attempted to quantify the impact on poverty among the elderly of reducing the generosity of pension benefits, given the difficulty of estimating the corresponding effects on other sources of income, either through changes in working and saving behavior or through changes in other social transfers. The literature, in general, uses two approaches, each with its advantages and disadvantages. The first approach uses household survey data to simulate the impact of changes in pension income on elderly poverty. It makes explicit, often simplifying, assumptions about other types of income. For example, asset income and employment income are assumed to grow at the same rate as GDP (Jackson, Howe, and Nakashima, 2010). This approach is transparent, but how well it represents reality is unclear. The second approach empirically estimates a reduced-form relationship between pension income and the elderly poverty rate using historical data that already take into account changes in other sources of incomes. It then simulates the impact of pension reform on poverty, assuming the relationship holds in the future (Zaidi, Grech, and Fuchs, 2006). One shortcoming of this approach, like most reduced-form models, is its lack of clearly specified channels. One of the key challenges for this approach is to address the potential endogeneity of pension replacement rates, that is, pension replacement rates are determined as part of the social protection system and thus are likely correlated with the characteristics of the rest of the social security system.

This chapter builds on the second approach to estimate the relationship between pension replacement rates and elderly poverty. The dependent variable is the at-risk-of-poverty rate after pensions and other social transfers for the 65 and older age group, and the key independent variable is the aggregate replacement rate. The analysis takes advantage of the panel nature of the Eurostat data and uses several panel data models to address the endogeneity problem, including a fixed-effects model, a fixed-effects model with a first-order autoregressive (AR(1)) error term, and a difference generalized method of moments (GMM) model, and an ordinary least squares (OLS) model is used as a reference (see Appendix 4A for more details).

The aggregate replacement rate can affect poverty through several channels. First, a lower replacement rate directly reduces the income of the elderly. Second, the elderly with reduced income as a result of lower replacement rates may qualify for a higher amount of other social benefits, which would offset some of the
effects of lower replacement rates. Third, some of the elderly may respond to lower replacement rates by increasing labor supply and thus increasing labor income. And fourth, in anticipation of lower replacement rates, people may choose to increase private savings, including participation in private pensions and accumulating other assets, to raise future retirement income. Because the at-risk-of-poverty rates after pensions and social transfers are based on income from all sources, including private savings and pensions, work income, public pensions, and other social transfers, the reduced-form model estimation implicitly takes all four channels into account.

Table 4.1 reports the econometric estimates for two age groups, ages 65 and above and ages 25–54, under all four specifications. As expected, the aggregate replacement rate has no effect on poverty of those ages 25–54. The coefficients under all specifications, except OLS, are small and insignificant. This outcome provides evidence that estimates from the simple cross-section OLS specification are biased.

As expected, the risk of poverty in old age is negatively related to the pension’s income replacement rate. A simple OLS model appears to overestimate the elasticity between the aggregate replacement rate and elderly poverty with a coefficient of −1.43, indicating that potential bias is introduced by the likely correlation between the replacement rate and country fixed effects, which may include the generosity and progressivity of other social transfers.

The elasticity estimate from panel data models is about −0.4, which implies that a 10 percent reduction in the aggregate replacement rate would increase the elderly poverty rate by about 4 percent. This elasticity is based on the at-risk-of-poverty threshold of 60 percent of the national median equivalized disposable

**TABLE 4.1**

<table>
<thead>
<tr>
<th></th>
<th>OLS model</th>
<th>Fixed effects model</th>
<th>Fixed effects model with an AR(1) error term</th>
<th>Difference GMM</th>
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<tr>
<td>Log aggregate</td>
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<td>−0.46***</td>
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<td></td>
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<td>Male</td>
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<td>−0.45***</td>
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<td>replacement rate</td>
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</tr>
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<tr>
<td>Adjusted R squared</td>
<td>0.28</td>
<td>0.27</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sources: Eurostat; and author’s estimates.
Note: AR(1) = first-order autoregression; GMM = generalized method of moments; OLS = ordinary least squares.
* *, **, and *** indicate statistical significance at the 10 percent, 5 percent, and 1 percent levels, respectively.
income; it would change under alternative thresholds as the concentrations of elderly population differ. In addition, elderly women have a higher poverty rate than elderly men, even after controlling for aggregate replacement rate and country effects. An increase in per capita GDP is associated with higher elderly poverty, likely capturing the fact that average income (for the working-age population) grows faster than pension income during periods of economic growth.

**IMPACTS OF THE PROJECTED DECLINE IN REPLACEMENT RATE ON ELDERLY POVERTY**

According to the 2012 Ageing Report from the European Commission, sizable decreases in pension generosity are projected for the coming decades in many European countries as a result of pension reforms in recent years that were mostly directed to strengthening the financial sustainability of pension systems by decreasing coverage and benefits (European Commission, 2012).

Of the 23 European Union member states for which data are available, an average 8.8 percent decline in the replacement rate is projected between 2010 and 2030 (Figure 4.6). Only 3 of the 23 countries are projected to have an increase in the public pension benefit ratio (Belgium, Cyprus, and Italy). In six countries (Estonia, Malta, Poland, Romania, the Slovak Republic, and Sweden), the decline is projected to be more than 15 percent. A rather substantial decline in the public pension benefit ratio is projected for the period 2010–60, amounting to an average reduction in the replacement rate of nearly 20 percent. A reduction of 20 percent or more is projected in seven countries (Estonia, Greece, France, Poland, Romania, the Slovak Republic, and Sweden). Only Cyprus is projected to have a slightly increasing public benefit ratio over the projection horizon.

**Figure 4.6** Projected Changes in Pension Replacement Rates (Percent)

Sources: Eurostat; European Commission; and author’s estimates.

Note: AUT = Austria; BEL = Belgium; BGR = Bulgaria; CHE = Switzerland; CYP = Cyprus; CZE = Czech Republic; DEU = Germany; DNK = Denmark; EST = Estonia; GRC = Greece; ESP = Spain; FIN = Finland; FRA = France; GBR = United Kingdom; HUN = Hungary; HRV = Croatia; IRL = Ireland; ISL = Iceland; ITA = Italy; LUX = Luxembourg; LTU = Lithuania; LVA = Latvia; MLT = Malta; NLD = Netherlands; NOR = Norway; POL = Poland; PRT = Portugal; ROM = Romania; SVN = Slovenia; SWE = Sweden; SVK = Slovak Republic.
In light of the large projected decline in replacement rates in recent pension reforms, it is thus important to assess what effect these reforms could have on pension adequacy and elderly poverty. An elasticity of $-0.8$ between the public pension replacement rate and elderly poverty indicates that elderly poverty would, on average, increase by nearly 0.5 percentage point (3 percent) between 2010 and 2030. There are considerable variations, however, by country. Elderly poverty is projected to increase in all but three countries, with the increase exceeding 1 percentage point in seven countries (Bulgaria, Estonia, Malta, Poland, Romania, Sweden, and Slovenia) (Figure 4.7).

The increase in elderly poverty is substantially larger between 2010 and 2060. Elderly poverty is projected to increase in all countries but Cyprus, and on average, rise by 1.1 percentage points, or roughly 7 percent. Again, variations are substantial across countries, and projected increases range from 0.08 percentage point in the Czech Republic to nearly 3½ percentage points in Poland. The percentage point increase in poverty is highest in Bulgaria, Estonia, Greece, Poland, and Sweden, with the increase in elderly poverty exceeding 2 percentage points. The poverty increase in France and the Slovak Republic is moderate, despite the large reduction in their replacement rates, because of their low initial poverty rates in 2011. Similarly, the large poverty impact for Estonia, despite the moderate reduction in its replacement rate, is due to its high initial poverty rate of more than 20 percent in 2011.

Because the elasticity estimate is based on current social protection systems, the projections assume the same social protection system design in the future.

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Figure 4.7  Poverty Impact of Changes in Pension Replacement Rates

Sources: Eurostat; European Commission; and author's estimates.

Note: AUT = Austria; BEL = Belgium; BGR = Bulgaria; CHE = Switzerland; CYP = Cyprus; CZE = Czech Republic; DEU = Germany; DNK = Denmark; EEM = European Economic and Monetary Union; ESP = Spain; FIN = Finland; FRA = France; GBR = United Kingdom; HUN = Hungary; HRV = Croatia; IISL = Iceland; ITA = Italy; LUX = Luxembourg; LTU = Lithuania; LVA = Latvia; MLT = Malta; NLD = Netherlands; NOR = Norway; POL = Poland; PRT = Portugal; ROM = Romania; SVK = Slovak Republic; SWE = Sweden.
including, for example, the progressivity of public pensions and other social benefits. The projections, however, are not intended to predict elderly poverty in the future given that changes in the social protection system and economic structure could help offset the effects on poverty. Rather, the purpose of the projections is to provide a sense of how poverty among the elderly could evolve if future social protection systems remain similar to those of the past. The following section provides a discussion of options to achieve this.

DISCUSSION AND CONCLUSION

Most of the recent pension reforms are projected to lead to a reduction in public pension benefits. The analysis in this chapter suggests that measures are needed to mitigate the adverse impact of pension reform on the well-being of the elderly, for example, through the design of social security systems or labor market policies.

The most direct way to limit the impact of pension reforms on old-age poverty is to lower pension benefits only for those with higher income—that is, to increase the progressivity of public pension benefits. However, this policy should be weighed against any possible adverse effects on the labor market. Similarly, other social transfers could be scaled up to provide additional assistance to the elderly. As discussed earlier, other social transfers currently are shown to have a relatively small impact on elderly poverty.

Although the efforts to better target these benefits to the poor could have a substantial effect on elderly poverty while helping contain the fiscal costs of these benefits, it may be challenging to increase voluntary pensions and other private savings during working lives to offset the reduction in public pension benefits for the low skilled and less educated because of their low earnings and low participation in voluntary pension plans. Automatic enrollment in voluntary pension plans, however, may help increase coverage (Benartzi and Thaler, 2013; Beshears and others, 2008).

The elderly poor can also respond to lower public pension benefits by increasing their labor supply. A number of barriers to old-age employment will need to be overcome for this to be successful:

- Employers often believe that older workers are less productive and less able to adapt to change. Legislation against age discrimination has been effective in many countries, and public information campaigns could also help correct this misperception (OECD, 2011).

- In some countries, older workers cost too much and retirement provides a convenient way of adjusting the size of the workforce, and strict employment-protection legislation can make it costly to hire older workers (Daniel and Heywood, 2007; OECD, 2004). Labor market reforms and reforms to the seniority-based wage structure could help limit these impacts (IMF, 2013).

- Employment opportunities for older workers are often limited. In addition, older workers are less likely than their younger counterparts to take part in
training (OECD, 2011). Encouraging the elderly to work may require many of the effective Active Labor Market Programs and training programs to be expanded to include the elderly population (IMF, 2011).

- Available employment opportunities may also be unattractive to the elderly because of poor working conditions or unsuitable and inflexible working-time arrangements; improving working conditions for elderly workers could help mitigate this effect (OECD, 2011).

Several options could help reduce the higher old-age poverty among women. Policies that help promote labor force participation of women, for example, strengthening child care benefits, could enhance their ability to save during working lives and entitle them to higher replacement rates at retirement (IMF, 2011). Increasing the replacement rates for survivors’ pensions could help reduce old-age poverty among women because life expectancy is higher for women and they often live into widowhood while receiving survivors’ pensions (Hoff, 2008; Anzick and Weaver, 2001).
APPENDIX 4A. METHODOLOGY TO ESTIMATE THE RELATIONSHIP BETWEEN PUBLIC PENSION REPLACEMENT RATE AND ELDERLY POVERTY

This chapter uses a panel data econometric model to estimate the relationship between pension income replacement rates and elderly poverty. The dependent variable is at-risk-of-poverty after pensions and other social transfers for the 65 and older age group, and the key independent variable is the aggregate replacement rate. The econometric model takes the following form:

\[
\text{Poverty}_{i,j,t} = \beta_3 + \beta_1 \times R_{i,j,t} + \beta_2 \times X_{i,j,t} + Year_i + Country_i + \epsilon_{i,j,t},
\]

in which \(i\) indicates country; \(j\) indicates gender; and \(t\) indicates year. The variable \(X\) includes gender and real per capita GDP (in log terms), \(R\) denotes the aggregate replacement rate (in log terms) and captures the generosity of pension benefits, and \(\text{Poverty}\) denotes the at-risk-of-poverty rate (in log terms). \(Year\) fixed effects control for common shocks across countries in the sample. \(Country\) denotes the unobserved country-level effects, and \(\epsilon\) is an error component. Log transformation is applied to both at-risk-of-poverty rates and the aggregate replacement rate to reduce the impact of outliers on the estimates of the regression coefficients. Coefficient \(\beta_1\) is thus an elasticity measure that represents the percentage change in the elderly poverty rate due to a 1 percent change in the pension income replacement rate.

Because the aggregate replacement rate is not exogenously determined and is likely to be correlated with unobserved country characteristics, addressing endogeneity is a key challenge. This analysis takes advantage of the panel nature of the Eurostat data on the at-risk-of-poverty rate and aggregate replacement rate and compares several model specifications:

- **A simple OLS model.** Because replacement rate is likely correlated with country fixed effects, a simple OLS estimate would be biased. This chapter uses the OLS estimate as a reference point.
- **A fixed-effects model.** A fixed-effects model can effectively control for unobserved time-invariant country-specific effects. However, it does not address unobserved time-variant country-specific effects. In addition, it is not efficient when serial correlations are present.
- **A fixed-effects model with an AR(1) error term.** This model can improve the efficiency of the fixed-effects model when the error term follows an AR(1) process.
- **A difference GMM model.** A difference GMM approach is appropriate when elderly poverty depends on its own past realizations; aggregate replacement rates are not strictly exogenous, meaning correlated with past and possibly current realizations of the error; and heteroskedasticity and autocorrelation occurs within individuals but not across them.
REFERENCES


CHAPTER 5

Intergenerational Equity and the Gender Gap in Pension Issues

NORIYUKI TAKAYAMA

INTRODUCTION

This chapter focuses on two of the many pension-related challenges facing most countries around the world: increasing intergenerational equity and reducing the still-prevalent gender gap. An aging population and related slower economic growth are creating serious intergenerational equity concerns for pensions, while the growing participation of women in the labor market, along with their changing role with regard to family responsibilities, requires societies to revisit their pension provision for women.

The next two sections deal with, respectively, pension equity issues between generations and how to close the pension gap between men and women.

INTERGENERATIONAL EQUITY ISSUES

Although the issue of intergenerational equity of pensions has been discussed intensely, little common understanding of the relevant underlying concepts seems to have emerged (e.g., see Roemer and Suzumura, 2007). The discussion cannot be limited to the framework of social security pensions; issues that must also be considered include income transfers within families before pension systems were established and in their early stages, social infrastructure, subsidized child rearing (including education), and technological development.

Intergenerational pension equity might matter if younger generations were forced to bear excess burdens created by preceding generations. As long as each successive generation of workers enjoys a higher standard of living than preceding generations, securing equity might not become acute.\(^1\) If living standards stagnate, then younger workers may wonder why they should support the older generations through a pension system. Intergenerational equity considerations vary between pension systems. These variations are discussed in the following subsections.

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\(^1\) An increased number of retired people can be supported if output grows. Economic output depends on the supply of workers, which means increasing the labor force participation of young adults, women, and early retirees. Economic output also depends on the higher productivity that can result from improved health status, educational attainment, and so on. Increasing both labor force participation and productivity is likely to induce more equitable income transfers between generations.
Pay-as-You-Go Defined Benefit Plans

Many countries have established social security defined-benefit (DB) pension systems on a pay-as-you-go (PAYG) basis. These systems have generally succeeded in considerably reducing the number of elderly persons living in poverty because old-age pension benefits provide a basic floor of income after retirement.

The PAYG DB system has worked for many years as a tax-and-transfer system involving significant amounts of income redistribution between generations.\(^2\)

The political difficulty is that seniors are strong voters, while younger people (and future generations) have little or no political power.\(^3\) Thus, it is tempting for politicians to ignore the interests of future generations. Indeed, politicians are likely to make many promises to retirees, as long as the pension system is operating with a surplus, rather than introduce unpopular or painful measures—such as increasing the contribution or tax rate, raising the eligibility age, or reducing the income replacement rate of pensions—even when these measures are needed to maintain a pension system’s financial sustainability. Politicians typically operate according to two time lags: (1) the lag until a majority of them realize that circumstances have changed unfavorably and (2) the lag until they adopt painful policy measures.

Continued economic growth mitigates the potential difficulties of maintaining healthy PAYG pension financing. But if the economy fails to expand at the same time the share of senior citizens in the population increases, younger workers will see a decline in their real after-tax income in the absence of benefit cuts or increases in the statutory retirement age. They will not be able to achieve a higher standard of living than their parents, and the existing level of intergenerational transfers from workers to the retired will become difficult—or impossible—to maintain. The United States and Sweden publish the balance sheets of their social security pensions annually.\(^4,5\) This yearly information keeps the public aware of the need to change the long-term financial conditions of the systems as circumstances change. Other countries should publish their balances annually. Appendix 5A discusses how Japan has adapted its pension system to changing circumstances.

\(^2\)A PAYG system is sustainable only if participation is compulsory. If people can opt out, transfers between generations cannot be maintained. Moreover, in many low-income countries, PAYG DB plans are restricted to military and civil servants. If a disproportionate share of government revenue is appropriated for pension benefits for these two groups, less is available to meet other needs (e.g., education, health, and infrastructure investment), inducing more inequitable income transfers between generations (Takayama, 2011).

\(^3\)There are several proposals for revising voting systems. Demeny (1986) proposed a system that takes the number of non-adult children into account. Another proposal is to assign voting rights to adults in proportion to life expectancy (Oguro and Ishida, 2012). Others refer to the Iroquois law of seven generations in political decisions (e.g., see Frischmann, 2005).

\(^4\)Specifically, the United States reports the value of unfunded obligations of social security.

\(^5\)Several case studies on using the balance sheet approach to reform pensions are included in the Project on Intergenerational Equity (2005, 2006), Takayama (2005), and Holzmann and Jousten (2013). The studies include Canada, China, Germany, Italy, Japan, Sweden, and the United States. However, the balance sheet approach is still in a primitive stage, with little consensus among experts about how to measure legacy costs, which assets and liabilities should be included, which discount rate would be appropriate, and how many years in the future should be included.
Automatic adjustment

In a PAYG system, pension benefits are financed primarily by the contributions of those of working age. It may be perceived as a socialized system of intergenerational transfers between parents and children. Without a socialized system, ordinary parents and their children would have responded flexibly to changing circumstances. The retired parents expect to live a decent life, and working children should be adequately rewarded for their labor. A PAYG DB social security pension plan and the family-based income transfers between aging parents and their children should follow similar designs. The PAYG DB system should prescribe the rules for satisfying the needs of both groups: contributors and beneficiaries.

The benefits and contributions in a PAYG DB plan should be changed in a timely and proper way to respond to changing circumstances. Because of the uncertainty of possible outcomes in the future, reforms must be ongoing to keep the system viable.

The most serious issue in a PAYG pension system is how to reduce political risk. Automatic adjustments are one good way of doing so (Whitehouse and others, 2009). Unless automatic adjustments are implemented, pension reforms are likely to be delayed in the political process, and people will be forced to accept sudden changes in a time of crisis, as was the case in Greece. Box 5.1 provides more information.

BOX 5.1

Automatic Adjustments

Sweden devised an automatic balance mechanism to ensure the long-term viability of its social security pension system. If excess liabilities on the balance sheet are verified, the notional rate of return is automatically adjusted downward. Germany, which uses a points-based system, and Japan have introduced indexation formulas to adjust pension benefit levels based on demographic changes.

In 2006, Denmark introduced automatic indexation of the normal pensionable age to longevity. This approach avoids political risks while ensuring equity between generations because the average period for which individuals will receive old-age pension benefits will be the same for all generations. Denmark’s Ministry of Social Welfare anticipates that the normal pensionable age will reach 70 years by 2040 (Ministry of Social Welfare and Ministry of Health and Prevention, Denmark, 2008).

In 2011, stakeholders in the Netherlands (labor unions, businesses, and the government) agreed to adopt Denmark’s indexation to longevity. Later in the same year, Italy also decided to introduce indexation to longevity beginning in 2018, when the normal pensionable age will reach 67 years (Mazzaferro, 2012).

1 A point system measures relative contribution performance: for instance, a person contributing at the average will earn one point in a period, while someone contributing twice as much will earn two points. The monetary value of a point (and, by extension, the total entitlement represented by the point balance at retirement) is determined by government at or close to retirement, depending on the fiscal space and other consideration. Thus, a point system ensures proportional pensions within a cohort but allows flexibility in the average pension benefits of subsequent cohorts.
Notional Defined- Contribution Plans

In the 1990s, Sweden introduced a notional defined-contribution (NDC) plan to replace its PAYG DB plan. Italy, Poland, and Latvia followed suit.

In an NDC plan, pension benefits are directly linked to individual contributions. On an aggregate basis, however, some adjustment to benefit levels is required to maintain long-term financial sustainability (thereby enhancing equity between generations), because NDC plans are financed on a PAYG basis.

Funded Defined-Benefit Occupational Plans

At first glance, funded DB occupational plans seem to be free of intergenerational equity issues. It is assumed that any risks involved in these plans are allocated only within each generation. However, these plans face different risks, such as investment risk and the risk of sponsor company bankruptcy. The rate of return on investments is intrinsically volatile. Poor investment performance can create unfunded pension liabilities, for which the sponsor companies must assume responsibility.

Sponsors experiencing financial difficulties or facing bankruptcy have to cut wages, let some of their employees go, and limit new hiring. Through these measures, benefit entitlements for current pensioners are often protected at the expense of younger workers. Thus, occupational DB plans are subject to intergenerational equity issues whether they are PAYG or funded.

Changes often occur in the income transfers between generations in funded DB occupational plans because all businesses experience ups and downs. Companies such as General Motors Corporation, Japan Airlines, and Tokyo Electric Power Company have not been immune to changing conditions. The employer-sponsored plans in these companies were forced to reduce pension benefits for current and future pensioners. Such reductions are a compromise between generations that enable the sponsoring companies to survive.

Funded Defined- Contribution Plans

An individual counting on a funded DC plan faces investment risk (i.e., a volatile rate of return), the risk of future earnings trajectory, inflation risk, and the risk of living longer than expected. Very few generations escape all of these risks in their lifetimes, and instruments to minimize the risks are generally absent. Because it is the individual who bears these risks under such arrangements, pension benefits in old age might end up below individual expectations. By definition, the contribution rate (financial or notional) in DC plans is fixed, and any adjustments are made on the benefit side. Recipients of pensions have less time to adjust to

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6Unexpected longer life expectancy is another major cause of increased unfunded liabilities in occupational plans.
7Occupational DB plans have been terminated in many countries, such as Australia, the United Kingdom, and the United States, because businesses are no longer prepared to shoulder this risk.
8Practice frequently deviates from theory: the contribution rate may be adjusted to changing circumstances.
GENDER GAP

Women are likely to receive a lower amount of pension benefits from social security than men. For example, in 2010 in Japan, the average monthly old-age benefit for women from the major pension program (Kosei Nenkin Hoken, or KNH [Employees Pension Insurance]) was ¥104,000 (US$1,175), about 60 percent of the amount for men (see Figure 5.1). Several reasons underlie the difference in the level of pension benefits between men and women. Women’s average wage rates are lower than those of men, and they are likely to work fewer hours per week and to work as nonregular employees. They also tend to work fewer years because they spend time caring for their children and for frail elderly dependents. In addition, women often work in the informal sector, which offers no entitlement to pension benefits. Moreover, divorced women

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9 Instruments include indexed bonds and annuities.

10 However, the replacement rate for women tends to be higher than for men if minimum pensions or flat-rate basic benefits are implemented. Moreover, the gender gap in total pension wealth from social security will be smaller than the gender gap in monthly benefit levels, because women generally live longer.
are often discriminated against when it comes to pension benefit entitlements. Finally, women are likely to live longer than men and are typically younger than their husbands, so an overwhelming majority of recipients of survivors pensions are women, and the level of survivor benefits is usually not adequate to ensure decent standards of living. Thus, women usually face a greater risk of poverty in old age because the principal income source for a majority of elderly women is a pension benefit from social security.

The following subsections discuss these issues, as well as the potential for more equitable treatment in the pension system and implications of the incentive structure. Pension policies do not always take priority over other public policies. To achieve greater gender neutrality in pensions, measures to remove persistent gender differences in labor market participation and to change the unequal division of caring roles are critically important.\(^\text{11}\)

**OLD-AGE BENEFITS**

**Pensions for Lower Wage Earners**

In many countries, women are disadvantaged in the wages and salaries they earn in comparison with men. Their access to higher education, good jobs, and on-the-job training often remains limited, mainly by social pressures and constraints. The most effective policy option for women’s stronger labor market attachment is to remove these pressures and constraints.

Meanwhile, pensions can partly remedy the wage gap observed during beneficiaries’ active years, which would benefit women who earn lower incomes. The contribution rate can be set at a lower level for low-wage earners, which might encourage employers to increase their demand for these workers. The funds required to compensate for the lower contribution rates of these workers can be financed by a higher contribution rate for middle and high wage earners (i.e., a cross-subsidy) or by a transfer from general revenue.

If a country implements a two-tier benefit system that includes a flat-rate basic benefit (as in the United Kingdom and Japan) or a progressive benefit formula of the type in the United States, the gap in pension benefits will be smaller than the gap in wages. Alternatively, a Swedish-type residence-based minimum pension can compensate for the wage gap.

**Pensions for Nonregular Employees**

In the past, entitlements to pensions related to social security earnings were often limited to regular employees working full time. A growing number of countries have expanded their coverage of earnings-related pensions to part-time and other nonregular employees. However, this expansion has encouraged employers to offer a lower wage rate to atypical employees working less than full time. It has also encouraged

\(^{11}\)Gender neutrality in the labor market requires equal opportunities in paid work and equal pay for equal work.
Them to switch to contract-based work with self-employed persons, increasing the number of pseudo-self-employed workers. Additionally, if system implementation is weak, the expansion of coverage to nonregular employees tends to increase the number of people working in the informal sector. Another method used by employers to avoid paying the necessary social security contributions is to move production lines to other countries with lower wages and less well developed social security systems.

**Pension Credits for Child Rearing and Caring for the Elderly**

Benefits for those on maternity or parental leave are usually smaller than the wages or salaries they were earning. If these benefits are included in the basis for these workers’ pension benefit calculations, most mothers will ultimately receive a lower old-age pension.

To solve this problem, a growing number of countries are providing special pension credits in this situation. A typical method is to exempt the parents on leave from making social security contributions and for the government to make their contributions for them according to their previous salary, using money from general revenues or contributions made by other insured persons. With these credits, pensions can be neutral with regard to childbearing and the care of infants.

Longer career interruptions for child rearing can cause labor market reentry difficulties, leading to lower salaries. Some countries offer special advantages to women who work as nonregular employees (for example, as part-time workers) while engaging in child rearing. Germany treats them as if they were earning 1.5 times their actual wages (up to a limit) until their children are 10 years old. These advantages, however, will reduce a mother’s incentive to remain, or resume being, a full-time regular employee. Canada and the United Kingdom calculate career average earnings by dropping the years spent in child rearing. This calculation may be more advantageous to higher-earning women.

Other countries promise an additional old-age pension benefit to those who raise children. The purpose of this benefit is to maintain a higher fertility rate. However, few countries have a lower contribution rate for those involved in child rearing, although several countries have explored this possibility.

Pension credits for those who care for the frail elderly are rare, but a growing number of countries have set up social insurance systems for long-term care. Without such a system, many women are likely to accumulate fewer years of paid work because they care for aging parents or in-laws. Consequently, their old-age pension benefits will be lower.

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12 For example, France provides a 10 percent increase in the final pension amount to both parents who raise three or more children.

13 In Poland, caring credits are financed by a transfer from general revenue and are paid on the basis of the minimum wage. Workers with earnings higher than the minimum wage are thus penalized for taking time off to care for children. This provision also creates disincentives for men, who typically have higher earnings, to take child care leave (Fultz and Steinhilber, 2003).
Intergenerational Equity and the Gender Gap in Pension Issues

Pensions for Full-Time Spouses

Pension arrangements for dependent full-time spouses vary from country to country and by stage of economic development. Pension systems can be designed based on the individual or based on a household unit. A purely individualistic system does not make allowances for full-time spouses and does not provide survivor pensions. Under such a system, lower wage earners will receive lower pensions.

However, many countries (including Japan, the United Kingdom, and the United States) have household-based social security pensions. If a husband earns a salary and makes contributions to social security, his dependent wife is also entitled to an old-age pension benefit. Typically, the pension for a dependent wife is about half the benefit her husband receives. Another option is to split the husband’s earnings equally when determining entitlement to pension benefits; however, this approach may reduce men’s incentives to marry (see, e.g., Burkhauser and Holder, 1982). Financing these pensions can be a contentious issue (Box 5.2).

Pensions for Divorced Wives

Divorce after many years of marriage used to mean a very low pension benefit for an ex-wife with a short earnings history. Several countries, such as Canada, Germany, and Japan, have implemented a provision that provides pension benefits to a divorced wife by equally splitting the combined earnings of the spouses during their marriage. This provision has increased the incentive for women to legally divorce.

Normal Pensionable Age

Many countries used to have lower statutory pensionable ages for women than for men. This provision favored women and encouraged them to retire earlier than men. Labor force participation rates for women in their sixties are usually lower than those for men in their sixties, as shown in Table 5.1. A lower retirement age for women usually means fewer years of social security pension contributions, resulting in lower pension benefits.

Women live longer than men on average. Under unisex mortality tables, women’s social security pension wealth is likely to have a higher current discounted value.

As a result of calls for gender equity, among other reasons, a growing number of countries are adopting the same normal pensionable age for men and women.¹⁴

Survivor Benefits

The overwhelming majority of recipients of survivor benefits are women, and they have a higher level of poverty. Some countries still have compelling needs to increase the level of survivor pensions; others, such as Japan, have already done so.

¹⁴A shift from a DB plan to a DC plan typically disadvantages women. This kind of shift results from strong appeals for individualism along with a curtailment of redistributional elements. Moreover, the coverage of women in occupational pensions is much lower than that of men, which accentuates the pension gender gap. James, Edward, and Wong (2003) advocate joint annuities to reduce the gap.
In Japan, a female survivor can enjoy full flat-rate benefits plus three-quarters of the earnings-related old-age benefits of her deceased spouse.

In a traditional DB pension system, survivor benefits are financed by the overall income of the system. If survivor benefits are increased, contribution rates will have to be increased as well, or old-age pensions will have to be reduced. Alternatively, stricter qualifications for disability pensions could help fund a higher level of survivor benefits. Survivor pensions benefit couples, while single persons have no access to them; thus, any change to the system will have winners and losers.

### TABLE 5.1
Labor Force Participation Rates of the Elderly in Japan (Percent)

#### 1. Males

<table>
<thead>
<tr>
<th>Year</th>
<th>60–64</th>
<th>65–69</th>
<th>70+</th>
</tr>
</thead>
<tbody>
<tr>
<td>1975</td>
<td>79.4</td>
<td>63.9</td>
<td>31.6</td>
</tr>
<tr>
<td>1980</td>
<td>77.8</td>
<td>60.1</td>
<td>28.4</td>
</tr>
<tr>
<td>1985</td>
<td>72.5</td>
<td>55.6</td>
<td>26.8</td>
</tr>
<tr>
<td>1990</td>
<td>72.9</td>
<td>54.1</td>
<td>26.3</td>
</tr>
<tr>
<td>1995</td>
<td>74.9</td>
<td>54.2</td>
<td>26.1</td>
</tr>
<tr>
<td>2000</td>
<td>72.6</td>
<td>51.1</td>
<td>24.3</td>
</tr>
<tr>
<td>2005</td>
<td>70.3</td>
<td>46.7</td>
<td>21.1</td>
</tr>
<tr>
<td>2010</td>
<td>76.0</td>
<td>48.9</td>
<td>19.6</td>
</tr>
</tbody>
</table>

#### 2. Females

<table>
<thead>
<tr>
<th>Year</th>
<th>60–64</th>
<th>65–69</th>
<th>70+</th>
</tr>
</thead>
<tbody>
<tr>
<td>1975</td>
<td>38.0</td>
<td>27.7</td>
<td>9.3</td>
</tr>
<tr>
<td>1980</td>
<td>38.8</td>
<td>25.8</td>
<td>9.6</td>
</tr>
<tr>
<td>1985</td>
<td>38.5</td>
<td>26.8</td>
<td>10.0</td>
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<tr>
<td>1990</td>
<td>39.5</td>
<td>27.6</td>
<td>10.4</td>
</tr>
<tr>
<td>1995</td>
<td>39.7</td>
<td>27.2</td>
<td>10.3</td>
</tr>
<tr>
<td>2000</td>
<td>39.5</td>
<td>25.4</td>
<td>9.8</td>
</tr>
<tr>
<td>2005</td>
<td>40.1</td>
<td>24.0</td>
<td>8.7</td>
</tr>
<tr>
<td>2010</td>
<td>45.7</td>
<td>27.4</td>
<td>8.4</td>
</tr>
</tbody>
</table>

Sources: Statistics Bureau, Ministry of Internal Affairs and Communications, Japan, Labor Force Survey.
In a DC pension system, a joint-life annuity option may be a solution for providing surviving spouses with an adequate benefit.

**CONCLUSION**

Little common understanding exists regarding intergenerational equity of pensions, and as long as the standard of living for younger workers is generally higher than that of retired workers, the issue will probably not be considered critical. Intergenerational equity considerations vary among the different pension schemes according to their risk structures.

Continued economic growth mitigates difficulties in maintaining a financially healthy PAYG pension system. However, if the economy does not expand but the share of senior citizens in the population increases, the real after-tax pay of current workers will decline. Younger people will not be able to achieve a higher standard of living than their parents, and the existing level of intergenerational transfers from workers to the retired will be hard to maintain.

The long-term financial sustainability of a PAYG pension system is better reflected in changes over time in excess liabilities accrued from contributions made in the past (i.e., accrued-to-date net liabilities) than in annual changes in the account balance. Holding excess pension liabilities below a certain percentage of GDP is important for avoiding the incentive compatibility problem.

The system of contributions and benefits in a PAYG pension plan should be adjusted according to changing circumstances. Automatic adjustments of pension benefit levels and indexation to longevity are two ways to reduce the political risk inherent in making changes to the system.

In employer-sponsored DB plans, entitlements to pension benefits for current pensioners are often protected at the expense of younger workers. DB plans create equity issues between generations regardless of whether they are PAYG or funded.

A funded DC plan might face investment risk (i.e., a volatile rate of return), the risk of future earnings trajectories, inflation risk, and the risk of living longer than expected. Very few generations avoid all of these risks in their lifetimes, but instruments to minimize them are generally not in use.

With regard to the gender gap, women’s responsibilities at home and their employment conditions have been changing for many years. The same pension system can have different effects on the gender gap among different cohorts of working-age women.

Gender issues for pensions are very complicated, and solutions require trade-offs between equity and incentives to work. Certain options benefit some women at the expense of others. Singles and couples have different preferences, and the interests of single-earner couples often conflict with those of dual-earner couples.

Social values vary from person to person, and it is not easy for societies to reach a compromise regarding gender issues on pensions. Rigorous empirical studies using panel data are needed to give some insight into the impact of alternative pension policies on equity between men and women, incentives to work in the formal economy, and care activities. Careful evidence-based policy options are needed instead of heated discussions based on specific ideologies or vested interests.
APPENDIX 5A. REFORMING THE JAPANESE PENSION SYSTEM

Today’s Japan might be an extreme case of an aging society, with the level and dynamics of its aging as well as the fiscal consequences of the aging process. Owing to the long-lasting economic slump, the expected lifetime income for current younger generations could be about 30 percent lower in real terms than that of current older generations (Figure 5A.1). During the past 20 years, the wage and salary profile for younger generations has been flattened (Figure 5A.2). A majority of younger workers in Japan believe that they will not be better off than their parents’ generation.

To make matters worse, the fertility rate in Japan remains very low, about 1.3 to 1.4 children per woman. Kaneko (2008) estimates that if this rate remains unchanged, nearly 40 percent of women born in 1990 would have no children and about 50 percent would have no grandchildren (Figure 5A.3). The Japanese family structure would change drastically, which could intensify tensions between generations and weaken the public sense of intergenerational solidarity.

Excess Pension Liabilities as a Percentage of GDP

The long-term financial sustainability of the PAYG pension system is better reflected in changes over time in excess liabilities accrued from contributions made in the past (i.e., accrued-to-date net liabilities) than in annual changes in the account balance (Holzmann and Jousten, 2013). Figure 5A.4 shows social security pension liabilities as a percentage of GDP in the European Union. Political will is required to reduce these hidden and implicit liabilities.

Tables 5A.1 and 5A.2 show the balance sheet of Japan’s major social security pension system for private sector employees (Kosei Nenkin Hoken, or KNH) before and after the 2004 reform. Part 1 of Table 5A.1 shows assets and liabilities accrued from past contributions, and part 2 shows those that will accrue from

Figure 5A.1  Reduction in Lifetime Wages (Million Japanese yen)

![Graph showing reduction in lifetime wages](image)

Source: Hori and Iwamoto (2012).
Note: College-educated white collar workers in manufacturing industry, in terms of 2005 wages, assuming a zero discount rate.
future contributions. Table 5A.1 indicates that the pension funding sources before the 2004 reform were almost sufficient to finance future benefits, and the only task left was to trim future benefits by 4.5 percent.
Table 5A.1 part 1 shows a different picture though: pension liabilities were estimated to be ¥800 trillion, while pension assets were only ¥300 trillion. In other words, the accrued-to-date net liabilities (i.e., the legacy cost) were about ¥500 trillion, which was more than 60 percent of part 1 liabilities, equivalent to about 100 percent of Japan’s 2004 GDP. Thus, the true crisis in the Japanese social security system at that time was how to handle the ¥500 trillion of excess liabilities from contributions made in the past.

In 2004, a pension reform bill was passed that had the following main points:

- The KNH contribution rate would be increased by 0.354 percentage point every year beginning in October 2004, and is to reach 18.30 percent by 2017. After 2017, it will be kept at 18.30 percent.

- Social security pension benefits will be further reduced by 0.9 percent in real terms every year for 20 years. Consequently, the replacement rate for the “model” male retiree and his dependent wife will gradually decrease from 60 percent to 50 percent by 2023. This reduction introduces a demographic factor that takes into account the decreasing number of actively working people and longer life expectancy.

- Transfers from general revenue were increased from one-third to one-half of the basic benefits by 2009.

The bill left the normal pensionable age at 65.
The policy measures adopted in the 2004 pension reform would reduce the legacy liabilities by ¥80 trillion (16 percent) to ¥420 trillion. The reform would induce excess assets of ¥420 trillion in the part 2 balance sheet, offsetting excess liabilities of the same amount in the part 1 balance sheet, as shown in Table 5A.2. The huge excess assets shown in the part 2 balance sheet indicate that future generations might be forced to contribute more than the benefits they would receive in the future.

Figure 5A.5 presents KNH pension wealth and its contribution assets after the 2004 reform by different cohorts at 2005 prices. It shows that older generations enjoy windfall gains in the KNH system, while pension wealth for generations

### TABLE 5A.1

<table>
<thead>
<tr>
<th></th>
<th>Balance Sheet of the KNH before the 2004 Reform (¥ trillion, as of March 31, 2005)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Part One</td>
<td></td>
</tr>
<tr>
<td>Assets</td>
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</tr>
<tr>
<td>Financial reserves</td>
<td>170</td>
</tr>
<tr>
<td>Transfers from general revenue</td>
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<tr>
<td>Liabilities</td>
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<tr>
<td>Pensions due to past contributions</td>
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<tr>
<td>Excess liabilities</td>
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<tr>
<td>2. Part Two</td>
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</tr>
<tr>
<td>Assets</td>
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</tr>
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<td>Contributions</td>
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</tr>
<tr>
<td>Transfers from general revenue</td>
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<tr>
<td>Liabilities</td>
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<tr>
<td>Pensions due to future contributions</td>
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<td>Excess liabilities</td>
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### TABLE 5A.2

<table>
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<th>Balance Sheet of the KNH after the 2004 Reform (¥ trillion, as of March 31, 2005)</th>
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<td>1. Part One</td>
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<td>Assets</td>
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<tr>
<td>Financial reserves</td>
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<tr>
<td>Transfers from general revenue</td>
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<td>Excess liabilities</td>
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<td>Contributions</td>
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<td>Liabilities</td>
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<tr>
<td>Pensions due to future contributions</td>
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<tr>
<td>Excess assets</td>
<td>420</td>
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</table>

born after 1985 will be about 80 percent of their contributions. This could create an incentive compatibility problem or a dropout problem for future generations. A pension system is a zero-sum game—it has winners and losers. Ensuring that excess pension liabilities as a percentage of GDP do not increase over time is important to avoid the incentive compatibility problem.

REFERENCES


CHAPTER 6

Attitudes toward the Role of the Family, the Individual, and the State in Providing Retirement Income: Survey Evidence from Emerging East Asia

RICHARD JACKSON

INTRODUCTION

As the world’s societies age, policymakers are trying to peer into the future and anticipate the retirement needs and preferences of tomorrow’s growing elderly populations. Nowhere is this more difficult to do than in emerging East Asia, where rapid development has opened up a widening gap between the experiences and expectations of older and younger generations, formal retirement institutions are still maturing, and massive age waves loom over the horizon.

To better understand the changing contours of retirement in emerging East Asia, the Center for Strategic and International Studies (CSIS) commissioned a survey in China, Hong Kong SAR, the Republic of Korea, Malaysia, Singapore, and Taiwan Province of China. CSIS also commissioned the same survey in the United Kingdom to provide a point of comparison with an advanced Western economy. The survey, which was executed in the summer and fall of 2011, was based on nationally representative samples in all countries except China, where it was limited to urban areas. The respondents consisted of current and retired main earners, who were presumed to be the household members most likely to be responsible for retirement planning. Respondents were asked a series of normative questions designed to identify key social and cultural assumptions likely to affect the future direction of retirement behavior and policy, as well as detailed questions about their own personal retirement experiences and expectations.

1For convenience, the term “country” is used in this chapter to refer to all of the distinct territorial and economic entities in which the survey was conducted. This includes Hong Kong SAR, which is a Special Administrative Region of the People’s Republic of China, and Taiwan Province of China. Use of the term country is not meant to imply any judgment about the sovereignty or status of any of these entities in international law or practice.

2For a fuller discussion of both the survey methodology and findings, see Jackson, Howe, and Peter (2012). The “top-line” results for the survey’s normative questions, together with crosstabs by age, gender, educational attainment, and household income, are available at gapindex.csis.org.
The Role of the Family, the Individual, and the State in Providing Retirement Income

The overall picture that emerges is one of societies—and retirement systems—in the midst of a breathtaking transformation. Although the survey reveals that the extended family continues to play a far more important role in retirement security in East Asia than it does in the West, it also suggests that the traditional “Confucian ethic” expectation that families should support their own elderly members is rapidly eroding. Only a small minority of respondents in each country believe that grown children should have primary responsibility for providing income to retired people. Moreover, looking ahead to their own retirement, current workers do not expect to receive the same level of support from the extended family that current retirees do. In rapidly urbanizing, industrializing, and modernizing societies, one might expect to find a strong desire for the state to step in and substitute for the family, as happened in the West beginning in the early twentieth century. But this is not the case in most of the East Asian countries surveyed. Except in China and Malaysia, respondents favor individual, savings-based responsibility for retirement income rather than government responsibility. The preference for individual responsibility for retirement income is mirrored by strong preferences, which rise with each new cohort, for individual control over how retirement savings are invested and for individual choice in deciding when to retire—or whether to retire at all.

Just as with any survey, the findings of this one should be interpreted with caution. CSIS took care to ensure that the survey samples were broadly representative and properly weighted by age, gender, and educational attainment. Still, all surveys are subject to potential pitfalls. Both the wording of the questions and the order in which they are asked can affect the responses, sometimes significantly. The answers to seemingly straightforward questions can also be skewed by cultural biases or current events of which the survey author may be unaware—a particular concern in surveys like this one that are conducted across many countries. Interpreting the answers to normative questions can involve additional challenges because respondents may sometimes feel obliged to express socially approved views. These caveats notwithstanding, surveys have enormous potential to inform policymaking because they allow us to answer, or at least attempt to answer, crucial questions about which the macro-level data are silent. How are retirees in East Asia now coping with the cultural and social crosscurrents of rapid modernization? How are workers now planning for their own future retirement? And what type of retirement system would the citizens of different countries actually prefer, if given the choice?

The next two sections of this chapter look more closely at evolving attitudes toward the role of the family, the individual, and the state in retirement security. The subsequent section turns to current workers’ expectations for their own future retirement and examines the extent to which these expectations reflect ideal preferences. The final section discusses the strategic implications of the survey’s findings for policymakers.

ATTITUDES TOWARD FAMILY RESPONSIBILITY

It is difficult to overstate the current importance of the extended family’s role in retirement security in East Asia. Between 35 and 65 percent of the elderly in the six countries surveyed report living in the same household with one or more of
their grown children, with Korea at the low end of the spectrum and Singapore at the high end. Among major Western countries, there are only six in which the share exceeds 15 percent and only three—Italy, Poland, and Spain—in which it exceeds 25 percent (Jackson, Howe, and Nakashima, 2010). Also in striking contrast to the West, net financial support within families flows from the young to the old. In the United Kingdom, 16 retired elders report giving more financial support to their grown children than they receive from them for every retired elder who reports receiving more than he or she gives. In China, Korea, and Taiwan Province of China, the number of retired elders who, on net, are helped financially by their grown children exceeds the number who, on net, help their grown children by nearly two to one. In Singapore, the ratio is five to one, in Hong Kong SAR ten to one, and in Malaysia more than fifteen to one.

Yet at the same time, the survey reveals considerable tension between the role that the family now plays and the role that people would like it to play. When asked who, ideally, should have primary responsibility for providing income to retired people—government, former employers, retirees themselves through their own savings, or the grown children of retirees or other family members—only small minorities of respondents answered “the grown children of retirees or other family members.” Even in Singapore, which exhibits the broadest support for the traditional ethic of filial piety, the share was just 22 percent. In Taiwan Province of China the share was 7 percent and in Korea it was 5 percent. The lowest share of all was in China, where only 4 percent of respondents believe that primary responsibility for providing retirement income should fall to the family—not much more than the 1 percent who believe this in the United Kingdom. In most countries, the preference for family responsibility is higher among the elderly, among women, and among less-educated respondents. But in no country does it constitute even close to a majority view among any major segment of the population.

The extended family can, of course, provide other types of support to the elderly besides income support, the most important being personal care for the frail elderly. Not surprisingly, significantly more respondents in all of the countries surveyed believe that grown children or other family members should continue to play the leading role in providing for this dimension of retirement security than in providing for income support. Yet even here, the share is under one-third in every country except Singapore.

To some extent, the weak support for family responsibility for retirement security may simply reflect the demographic realities of declining family size. Virtually all of today’s elderly in East Asia have at least one grown child to whom they can potentially turn for support, and the great majority have two or more children. The family

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3In this chapter, the elderly are defined as adults ages 60 and older, midlife adults as those ages 40–59, and young adults as those ages 20–39. The division of respondents into retirees and current workers is based on self-identification by the respondents. Respondents were told that retirement means “no longer working or working less than when you were younger and having no plans to work full-time again.” They were then asked whether they are “currently retired.”
prospects for today’s young adults are dramatically different. In all but one of the
countries surveyed, a large share of 20–39-year-olds report that they neither have nor
expect to have children. The exception is China, which may limit family size through
its one-child policy, but where virtually everybody still expects to have a family (see
Figure 6.1).

If family size were the main determinant of attitudes toward family responsi-
bility, however, one would expect that respondents who have or expect to have
children would be more likely to support it than those who do not. But this is not
the case. It thus seems that the explanation must lie in broader economic, social,
and cultural developments—in particular, in East Asia’s rapid pace of develop-
ment and the diffusion of more individualistic “Western values” that has accom-
panied it.

To be sure, many people in East Asia still profess an unconditional belief in
the traditional ethic of filial piety. When asked which view about children’s re-
sponsibility toward their parents comes closest to theirs, at least one-third of re-
spondents in every country surveyed agreed that children, even when grown,
“should always honor and respect their parents and support them in any way that
they can.” In Malaysia and Singapore, well over one-half of respondents agreed
that they should. The more important finding, however, is that many respondents
begged to differ. At least 30 percent of respondents in every country except Sin-
gapore instead said that “there is too much emphasis on honoring and respecting
parents” and that “both parents and children would be happier if they were more
independent and self-sufficient.” In Korea and Taiwan Province of China, this
was the majority view (Figure 6.2).

Within this overall picture, the survey reveals some interesting differences in
attitudes by age. One might expect that young adults, being the most highly edu-
cated and Westernized members of East Asian societies, would chafe most at the

Figure 6.1  Share of Respondents Ages 20–39 Who Neither Have nor Expect to Have Children
(Percent)

Table: Share of Respondents Ages 20–39 Who Neither Have nor Expect to Have Children

<table>
<thead>
<tr>
<th>Country</th>
<th>Share (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>8</td>
</tr>
<tr>
<td>Malaysia</td>
<td>20</td>
</tr>
<tr>
<td>Singapore</td>
<td>26</td>
</tr>
<tr>
<td>Taiwan Province of China</td>
<td>28</td>
</tr>
<tr>
<td>Korea</td>
<td>31</td>
</tr>
<tr>
<td>Hong Kong SAR</td>
<td>48</td>
</tr>
</tbody>
</table>

Source: Jackson, Howe, and Peter (2012).
responsibilities of filial piety—and that support for family responsibility for retirement security would decline linearly with age. This is indeed the pattern in Singapore and Korea. But in China, Hong Kong SAR, Malaysia, and Taiwan Province of China, young adults are actually more likely than midlife adults to believe that grown children or other family members should have primary responsibility for providing income and personal care to retired people—and in some cases, they are as likely or more likely to believe this than the elderly themselves.

This surprising finding may be attributable, in part, to simple life-cycle dynamics. Midlife adults, who are sometimes referred to as the “sandwich generation,” often face the double burden of supporting and caring for their aged parents while still raising and educating their children. Most young adults, however, have yet to experience the full burden of filial piety. But the higher level of support for family responsibility among young adults may also be a leading indicator of a generational shift in values that they will carry with them as they traverse the life cycle. This is a phenomenon familiar to sociologists who have studied the development process around the world. The initial shock of modernization frequently overwhelms tradition—but afterward, tradition sometimes experiences a revival among younger generations (Wallace, 1956).

Unless this shift gathers momentum, however, it is doubtful that it will do much to shore up family-centered retirement security. The share of young adults ages 20–39 who favor family responsibility for retirement income still represents a small minority of all young adults—less than one in six in every country surveyed. And even if the shift does gather momentum, its full effect will not be felt until today’s young adults mature. For at least the next couple of decades, future retirees will have to rely much more heavily on alternative sources of income support than do current retirees.
ATTITUDES TOWARD INDIVIDUAL AND STATE RESPONSIBILITY

If not the family, then who, ideally, should be mostly responsible for providing income to retired people—government, former employers, or retirees themselves through their own savings? From a Western perspective, one might expect the most common answer to be government—and indeed, this was the case among respondents in the United Kingdom, where the share favoring government responsibility exceeded the shares favoring employer or individual responsibility by a wide margin. Yet government was not the most common answer in most of the East Asian countries surveyed. In Korea, a majority of respondents said that retirees themselves should be mostly responsible for providing their own income, and in Hong Kong SAR, Singapore, and Taiwan Province of China pluralities did. In Malaysia, the survey at first seems to suggest that the public favors government responsibility over individual responsibility. However, excluding government employees, who are both overrepresented in the sample and more likely to favor government responsibility, the balance shifts slightly in favor of individual responsibility. Only China leans decisively the other way, toward government responsibility. Meanwhile former employers, the third possible substitute for family support, barely register in most countries. Except in China and Malaysia, fewer than one in ten respondents chose this option (Table 6.1).

It is tempting to suppose that the preferences of respondents in different countries may simply reflect the types of retirement systems to which they are accustomed. In Singapore, which has a “provident fund” based on personal savings and no tradition of government-funded retirement support, respondents lean toward individual responsibility. So do respondents in Hong Kong SAR and Taiwan Province of China, which also have national pension systems based in whole or in large part on personal savings. China, in contrast, has a predominantly pay-as-you-go (PAYG) national pension system, a long tradition of employer retirement support dating back to the days of the “iron rice bowl,” little tradition of funded pension savings, and the highest levels of support for government and employer responsibility for retirement income of any country surveyed. This hypothesis, however, cannot explain the results for Malaysia and Korea. Like Singapore, Malaysia has a provident fund based on personal savings—but it also has significantly weaker support for individual responsibility. Like China, Korea has a predominantly PAYG national

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4The shares for the United Kingdom were: “government” (49 percent), “former employers” (13 percent), and “retirees themselves through their own savings” (35 percent). Although comparable data are not available for other Western countries, the results of a Eurobarometer survey that asked about preferences in pension provision are suggestive (Christensen, 2006). On average across 15 Western European countries, 65 percent of respondents said that pensions should be provided “mainly by state or public schemes,” 27 percent said that they should be provided “mainly by occupational schemes,” and just 8 percent said that they should be provided “mainly by private arrangements.”

TABLE 6.1

“Who, Ideally, Should Be Mostly Responsible for Providing Income to Retired People?” (Percent of respondents choosing different options, by age group)

<table>
<thead>
<tr>
<th>Country</th>
<th>Age Group</th>
<th>Retirees Themselves, through Their Own Savings</th>
<th>Government</th>
<th>Former Employers</th>
<th>Grown Children or Other Family Members</th>
<th>Other¹</th>
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</thead>
<tbody>
<tr>
<td>China</td>
<td>20–39</td>
<td>10</td>
<td>54</td>
<td>23</td>
<td>6</td>
<td>7</td>
</tr>
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<td></td>
<td>40–59</td>
<td>10</td>
<td>65</td>
<td>17</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>60 and older</td>
<td>5</td>
<td>71</td>
<td>17</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>All</td>
<td>9</td>
<td>63</td>
<td>19</td>
<td>4</td>
<td>6</td>
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<td>Hong Kong SAR</td>
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<td>36</td>
<td>2</td>
<td>16</td>
<td>3</td>
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<td>Korea</td>
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<td>Taiwan Province of China</td>
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<td>All</td>
<td>45</td>
<td>36</td>
<td>9</td>
<td>7</td>
<td>3</td>
</tr>
</tbody>
</table>

Source: Jackson, Howe, and Peter (2012).

¹Includes “Don’t know/Not sure.”

pension system and little tradition of funded pension savings—but it also has the highest level of support for individual responsibility of any country surveyed.

Perhaps, then, a deeper dynamic is also at work—one that reflects differences in each country’s stage of institutional and market development. Broad and deep capital markets, well-defined property rights, and effective government regulatory oversight that ensures market transparency and accountability are all essential prerequisites for a successful savings-based retirement system. To the extent that the public has confidence that these conditions are present, individual responsibility for retirement income may become a more attractive option. To the extent that the public perceives they are absent, government responsibility may become a more attractive option. In other words, the more effective the overall institutional and market environment is at fostering and safeguarding individual savings, the less demand there will be for government retirement benefits. Conversely, when markets are underdeveloped and regulatory oversight is weak, the demand for government retirement benefits is likely to grow.

Looking beyond the national averages to differences in attitudes by age, it is possible to discern some potentially important trends. In China, for instance, working-age adults are significantly more likely to favor individual responsibility
than the elderly and significantly less likely to favor government responsibility, whereas in Singapore the age tilt is precisely the opposite. In the former, the level of comfort with markets is growing, while in the latter, the level of comfort with government is growing.

Along with age, income can naturally affect attitudes toward retirement provision. In most countries, the level of support for individual responsibility for retirement provision rises with household income. In Malaysia and Taiwan Province of China, respondents with incomes of more than five times the median household income are roughly 50 percent more likely to favor it than respondents with incomes of less than half the median. In Korea and Singapore, they are nearly twice as likely, and in Hong Kong SAR they are nearly three times as likely. The shares of upper-income respondents favoring government responsibility are correspondingly low—less than one-quarter everywhere except in China, where even a majority of the affluent support it.

Although support for individual responsibility rises sharply with income in most countries, this does not mean that this support is limited to the affluent. In fact, in all of the countries with a preference for individual responsibility, the survey reveals surprisingly broad support, even at low income levels. At all income levels in Singapore and Taiwan Province of China, even the very lowest, the share of respondents saying that retirees themselves should have primary responsibility for providing their own retirement income is higher than the share saying that government should. In Hong Kong SAR and Korea, the share is higher for respondents at every income level above the median.

Support for individual responsibility varies among different segments of the population in other ways as well. In every country, self-employed respondents are more likely than average to favor it than employed respondents. This may be because a disproportionate share work in the informal sector, are less likely to participate in national pension systems, and must, in any case, rely on their own retirement savings. More “market-oriented” respondents, who are defined here as those who receive (if already retired) or expect to receive (if still working) at least some of their income from stocks or bonds, are also more likely than average to support individual responsibility. In Malaysia, the country’s more market-oriented Chinese minority is much more likely to support individual responsibility than the Malay majority—in fact, it is nearly twice as likely. In China, rural migrants are twice as likely to support it as respondents with an urban hukou—that is, those who are officially registered as urban residents. Like self-employed workers, rural migrants disproportionately work in the informal sector and are much less likely than urban residents to participate in the national pension system.

One difference that was expected to be found but was not is a clear gender tilt. In Western countries, women are generally more risk averse than men, especially in matters of financial planning—which suggests that they should be more likely to support government responsibility for retirement income than individual responsibility (Croson and Gneezy, 2009; Twigg, 2011). This gender tilt is evident in the United Kingdom, where 39 percent of male respondents believe that retirees themselves should be mostly responsible for providing their own income, compared
with just 28 percent of female respondents. But apparently this pattern does not always hold in East Asia. In China and Korea, men are indeed more likely than women to support individual responsibility for retirement income. But in Hong Kong SAR and Singapore there is little difference—and in Malaysia and Taiwan Province of China, women are actually much more likely to support it than men.

Interestingly, support for individual responsibility for providing retirement income does not extend to personal care. When respondents were asked who, ideally, should be mostly responsible for providing personal care to retired people when they are disabled or need help with everyday living, “retirees themselves, by paying for caregivers” came in a distant second in Korea and Taiwan Province of China and third everywhere else. The most common answer was “government, by paying for caregivers” in every country except Malaysia and Singapore, where it was edged out by “grown children of retirees or other family members” (Figure 6.3). Korea, which has the lowest level of support for government responsibility for retirement income, has the highest level for personal care. Malaysia, which has the second highest level of support for government responsibility for retirement income, has the lowest level for personal care.

How can this apparent paradox be accounted for? At least two explanations are possible. The first is that governments in most of the countries surveyed already pay for at least some long-term care, and several have recently enacted or are debating major benefit expansions. This naturally creates an expectation of government support. It is perhaps no coincidence that the share of respondents who favor

**Figure 6.3** “Who, Ideally, Should Be Mostly Responsible for Providing Personal Care to Retired People When They Need Help with Everyday Living or Are Sick or Disabled?” (Percent)
government responsibility for personal care is highest where government now does the most to finance it (Korea) and lowest where it now does the least (Malaysia). The second explanation is that the economics of financing personal care and retirement income are fundamentally different. The need for personal care is inherently unpredictable, and when it does occur the cost can be large and lumpy. Conversely, because most people expect to retire someday, retirement is an event for which they are more willing to plan, prepare, and assume responsibility.

THE EXPECTATIONS OF FUTURE RETIREES

Looking to the future, the survey suggests that evolving social and cultural attitudes about responsibility for retirement security will translate into a diminished role for the extended family, though the degree to which the role of the family recedes will vary greatly by country and by type of support.

The expectation that grown children will personally care for the frail elderly remains very strong among today’s working generations, even though most people no longer view this arrangement as ideal. In every country surveyed except Korea, at least two-thirds of those current workers who have or anticipate having children expect to be personally cared for by their children if they become sick or disabled when they are retired or elderly. Expected rates of multigenerational living also remain very high in China and Taiwan Province of China and actually increase in Malaysia, although they decline steeply relative to the rates for today’s elderly in Hong Kong SAR, Singapore, and Korea (Figure 6.4). The decline in Korea, where

Figure 6.4  Share of Respondents Living or Expecting to Live with Grown Children When They Are Retired or Elderly (Percent)

Source: Jackson, Howe, and Peter (2012).
the tradition of family responsibility for retirement security appears to be under more stress than anywhere else, is especially dramatic. In Korea, only 10 percent of current workers who have or anticipate having children expect to live with them when retired or elderly, just one-fourth the rate of multigenerational living among today’s elderly—and, incredibly, less than the expected rate of multigenerational living (19 percent) among current workers in the United Kingdom.

The dimension of retirement security in which the role of the extended family recedes most sharply and consistently is income support. In every country, the share of current workers who expect to be dependent on their grown children for income when they are retired or elderly is much lower than the actual share among today’s elderly. In only one country—Malaysia—do more than twice as many current workers expect to be net recipients of income from their grown children as expect to be net providers. In China, Korea, and Taiwan Province of China, the expected ratio of net recipients to net providers is less than one to one. In other words, the expected direction of net income transfers reverses in these countries, with more current workers anticipating that they will be giving financial support to their grown children than receiving it (Figure 6.5).

Current workers’ declining expectation of receiving income from the extended family is in dramatic contrast to their growing expectation of receiving alternative sources of retirement income. In almost every country surveyed, expected rates of pension receipt, both public and private, rise cohort over cohort among future retirees—and in some countries they do so dramatically. In Korea, the share of respondents who receive or expect to receive income from the country’s national pension system increases from 47 percent among current retirees to 72 percent among future retirees. In Taiwan Province of China, it increases to 82 percent.

**Figure 6.5** Ratio of Respondents Who Are Net Recipients of Financial Support from Their Grown Children to Respondents Who Are Net Providers

![Figure 6.5](image_url)
from 60 percent, and in Hong Kong SAR to 90 percent from 63 percent. The striking exception is China, where the rapid growth in the number of rural migrants and private sector employees, who are less likely to participate in the national pension system, has, perhaps uniquely among the world’s emerging markets, left today’s working-age adults less well covered by formal retirement arrangements than today’s elderly (Figure 6.6).

Along with rising rates of pension receipt, the survey’s expectational data also point to a dramatic increase among future retirees in rates of income receipt from all classes of financial assets, including bank deposits, annuities and life insurance contracts, and stocks and bonds (Table 6.2). The cohort-over-cohort increase in the share of respondents who expect to receive retirement income from stocks and bonds is especially striking. In China, the receipt rate rises from 4 percent among current retirees to an expected 19 percent among current workers ages 40–59 and to an expected 32 percent among current workers ages 20–39. In Korea, the expected receipt rate among workers ages 20–39 rises to 20 percent, in Taiwan Province of China to 42 percent, in Malaysia to 49 percent, in Singapore to 65 percent, and in Hong Kong SAR to 66 percent. By this measure, young adults in most East Asian countries are not only far more market oriented than today’s retirees, but also far more market oriented than their peers in the United Kingdom, where barely one-third of 20–39-year-olds expect to receive income from stocks or bonds.

The growing market orientation of today’s working generations appears to be part of a broader mindset that stresses the value of individual initiative. This mindset is evident in the importance that younger respondents place on personal

Figure 6.6  Share of Respondents Who Receive or Expect to Receive at Least Some of Their Retirement Income from a National Pension System: Actual Share for Current Retirees versus Expected Share for Current Workers (Percent)

Source: Jackson, Howe, and Peter (2012).
control over their retirement savings. The share of respondents who say that individuals should have some control or complete control over how their retirement savings are invested rises cohort over cohort, whereas the share who say that “government and employers know best what to do with retirement savings” falls, sinking among 20–39-year-olds to slightly less than 15 percent in China, to 10 percent in Taiwan Province of China, and to less than 5 percent everywhere else.

This mindset is also evident in more flexible attitudes toward work and retirement. Midlife and young adults in most of the countries surveyed are less likely than the elderly to say that people should “retire at a fixed age and not work again” or that they should “work as long as they are able”—and more likely to say that they should “be free to start and stop working whenever they are able and willing.” Compared with today’s retirees, current workers plan to retire at significantly later ages. Whereas the majority of current retirees in every country retired before age 60, between half and two-thirds of current workers in every country except Malaysia expect to retire after age 60 (Figure 6.7). Much larger shares of current workers also expect to receive at least some income from work during their retirement years. In fact, at least one-half do in every country except Malaysia and Taiwan Province of China (Figure 6.8). Just as in the West, today’s working generations in East Asia are beginning to question whether the traditional “three box” life cycle of education, work, and retirement fits their life plans.

Finally, interest in entrepreneurship is growing among young adults in most East Asian countries, where it sometimes seems that almost everyone wants to be his or her own boss. The survey suggests that today’s rising generations will carry

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6Except for Malaysia and Hong Kong SAR, the six countries surveyed generally rank high on most standard measures of entrepreneurial activity. According to the Global Entrepreneurship Monitor (Bosma and others, 2012), the share of adults ages 18 to 44 who expect to open a business within the next three years averaged 21 percent across all six countries between 2001 and 2008, compared with an average of 15 percent in the Organization for Economic Cooperation and Development countries. In China, the share was an astonishing 44 percent.
Figure 6.7  Share of Respondents Who Retired or Plan to Retire after Age 60 (Percent)

Source: Jackson, Howe, and Peter (2012).
Note: “Current workers” excludes workers who do not plan to retire.

Figure 6.8  Share of Respondents Who Receive or Expect to Receive at Least Some of Their Retirement Income from a Job or a Business They Own (Percent)

Source: Jackson, Howe, and Peter (2012).
Note: “Current workers” excludes workers who do not plan to retire.

this entrepreneurial bent with them throughout their working lives and into their retirement years. The share of respondents who expect to receive income from a business they own when they are retired or elderly rises cohort over cohort, climbing past one-quarter among 20–39-year-olds in every country surveyed except Malaysia and reaching one-half in China and Singapore. In China, remarkably, nearly twice as many young adults expect to receive income from a business they
own when they are retired or elderly as expect to receive income from their grown children. In Korea, three times as many do.

**LESSONS FOR RETIREMENT POLICY**

Most experts would agree that today’s emerging markets face two crucial retirement policy challenges. The first is putting in place a robust floor of protection against poverty in old age and the second is building a contributory pension system that will both ensure adequate income replacement and be sustainable as populations age. Some experts might add a third challenge: encouraging longer work lives and maximizing the productive potential of the growing number of elderly. The CSIS survey offers some useful lessons for East Asian policymakers on all three fronts.

**Poverty Protection**

In Western societies, the retirement years are often referred to as the “golden years”—a time of well-deserved, and typically highly subsidized, leisure. For a large share of today’s retirees in East Asia, however, retirement is anything but golden. People who have retired in the past decade or so have done so at an awkward juncture in the development of their countries. Traditional family support systems are beginning to weaken, yet government and market substitutes are not yet fully developed. Meanwhile, the meteoric pace of economic growth has opened up a chasm between the living standard of the old and that of the more affluent rising generations. The median household income of respondents ages 60 and older was less than 80 percent of the median for all respondents in all six of the countries surveyed, less than 60 percent of the median in four of the countries surveyed, and less than 40 percent of the median in one—Korea.

Although this income gap can be expected to narrow as younger and more affluent generations arrive in old age, the survey suggests that significant minorities of tomorrow’s elderly will still be at risk of poverty. Even though rates of pension receipt are expected to rise steadily in every country expect China, the persistence of large informal sectors in much of the region means that substantial gaps in coverage remain, even among younger adults. In Hong Kong SAR, Singapore, and Taiwan Province of China, between 10 and 15 percent of respondents ages 20–39 do not expect to receive benefits from their country’s national pension system. That share rises to 24 percent in Korea, 26 percent in Malaysia, and 40 percent in China. Not surprisingly, those workers who do not expect to receive a national pension benefit are also less likely than other workers to expect to receive an employer pension benefit or income from financial assets.

Even those workers whose retirement prospects appear more secure may not be as well prepared as they seem. It is important to note that the growing role played by financial assets in the retirement plans of younger workers in East Asian countries is expectational—and in some cases, perhaps merely aspirational. Things may not work out as planned if public and private policies fail to adequately encourage
The Role of the Family, the Individual, and the State in Providing Retirement Income

and reward long-term saving. The same can be said of younger workers’ embrace of more flexible attitudes toward work and retirement. It remains to be seen whether rigid government and employer policies that enforce mandatory retirement ages and lock older workers out of regular employment will be reformed in ways that accommodate this generational shift.

Until recently, governments in East Asian countries could assume that the great majority of workers who reached old age without a pension or adequate personal savings would be supported by their grown children. But as the survey reveals, this assumption can no longer be taken for granted. To be sure, all of the countries surveyed now offer at least some kind of tax-financed, means-tested support to the indigent elderly. But the benefits are generally meager, and in some countries, notably China and Malaysia, the reach of the programs is limited. It is imperative that governments put in place adequate noncontributory old-age safety nets, or what are sometimes called “social pensions.” Policymakers should bear in mind that providing for a robust floor of old-age poverty protection is not just a matter of ensuring social adequacy. In rapidly aging societies, the failure to do so could potentially lead to social unrest and political crisis.

Income Replacement

In addition to a noncontributory old-age safety net, every emerging market also needs a broad-based contributory pension system that ensures adequate income replacement for the majority of the elderly. The preference of the public in most East Asian countries for individual savings-based responsibility for retirement income should be welcome news to policymakers as they consider how best to ensure the adequacy and sustainability of their pension systems in the face of dramatic population aging.

The higher the rate of return on contributions to a pension system, the greater are the benefits that the system can pay at any given contribution rate—or, conversely, the lower is the contribution rate that is required to pay any given level of benefits. In eras of rapid workforce and productivity growth, the rate of return to a PAYG system, which is equal to the growth rate in worker payroll, typically exceeds the rate of return to a funded system, which, in principle, is equal to the global rate of return to capital. Up to now, the economic advantage in East Asia has clearly lain with the PAYG model of retirement financing. But as workforces in East Asia grow more slowly or contract, and as wage growth converges with rates in the advanced economies, the advantage may increasingly shift to the funded model of retirement financing.

To be sure, support for individual savings-based responsibility for retirement income is far from universal in East Asia. A significant minority of the public in all of the countries surveyed believe that government should have primary responsibility for providing retirement income—and in China, a large majority believes this. But just because respondents may favor primary government responsibility does not mean that they oppose a greater role for individual retirement savings. When asked for their opinion about possible government responses to the challenge of supporting a growing elderly population, overwhelming majorities of respondents in every country, including China, said that government should “require workers to save more for their
own future retirement.” In every country, moreover, the share saying this exceeded the share saying that government should “require workers to contribute more to pay for government retirement benefits.” In some countries, the margin in favor of additional mandatory savings was enormous: 45 percentage points in Korea, 51 percentage points in Singapore, and 58 percentage points in Malaysia (Figure 6.9).

Unlike most Western countries, where the cost of financing mature PAYG national pension systems can be an obstacle to expanding or transitioning to funded alternatives, most East Asian countries are institutionally well positioned to do so. Hong Kong SAR, Malaysia, and Singapore already have savings-based national pension systems—and Taiwan Province of China, with the recent introduction of its fully funded “New Labor Pension,” is moving in this direction. Korea’s National Pension System is financed on a PAYG basis, but the system is not yet mature and the government has accumulated a large trust fund reserve that, potentially, could help finance a transition to a fully funded system. Expanding funded retirement provision may be more difficult in China, where the Basic Pension System is not only financed on a PAYG basis, but, like national pension systems in most Western countries, has also accumulated large unfunded liabilities. Yet even in China, there are obvious potential vehicles for increasing funded retirement savings—most notably, the Basic Pension System’s second-tier notional personal accounts and China’s new employer-based system of Enterprise Annuities.  

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Figure 6.9  “As the Population Grows Older and There Are More Retired People to Support, Please Tell Me Whether You Think The Government Should or Should Not Do Each of the Following” (Percent)

![Figure 6.9](chart.png)

Source: Jackson, Howe, and Peter (2012).

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7For a discussion of transition issues in South Korea and China, see Howe, Jackson, and Nakashima (2007) and Jackson, Nakashima, and Howe (2008).
Although reliance on funded retirement provision offers a potential economic advantage to East Asia’s rapidly aging societies, it also poses significant policy challenges. To begin with, the economic advantage may not be realized at all to the extent that government (or financial industry) policies prevent pension system contributors from earning a market rate of return on their savings. Policies of “financial repression” can take many forms, including setting below-market interest rates, restricting investment in foreign securities, and channeling contributions into government social investment projects. The need for reform is undoubtedly greatest in China, where the financial markets are still subject to pervasive government control. Yet even in a country such as Singapore, which has among the freest financial markets in the world, contributors to its government-managed Central Provident Fund earn far less than a market rate of return (Iglesias and Palacios, 2000; Park, 2011). The good news is that public intolerance for policies that impose an implicit tax on thrift is likely to grow as younger cohorts with higher levels of educational attainment and financial literacy climb the age ladder.

Then there is the challenge of managing market risk. PAYG pension systems are, of course, not without their own risks—in particular, the political risk that government will reduce promised benefits. The Korean government has already slashed replacement rates twice since its National Pension System was established in 1988, and China’s 1997 reform of its Basic Pension System greatly reduced its generosity for future generations of retirees. Still, managing market risk in a funded pension system can involve daunting policy choices. Ensuring that contributors earn a market rate of return on their savings need not and should not mean allowing them free investment choice. In any national pension system, whether it is financed on a funded or a PAYG basis, government has a compelling interest in maximizing the welfare of participants. To this end, a well-designed system might require that all contributions be invested in a globally diversified life-cycle index fund. Unfortunately, this is an instance in which public opinion in East Asia, which overwhelmingly supports individual control over the investment of retirement savings, may run counter to sound policy.

Finally, there is the challenge of preserving retirement savings. Here, the survey suggests that public opinion is more closely aligned with sound policy than might be expected. Despite the long tradition of lump-sum severance pay in most East Asian countries, the survey reveals a surprisingly high level of support for converting retirement savings into a monthly income stream. In every country except Singapore, the share of respondents saying that, if given the choice, they would prefer to receive all of their retirement benefits in monthly payments exceeds the share saying that they would prefer to receive all of it in a single lump-sum payment—and in most countries, it does so by a wide margin (Figure 6.10). People in East Asia appear to understand intuitively that lump-sum payouts are an atavistic relic of paternalistic employment systems and are inadequate in societies in which people retire so early and live so long.
There are many reasons to abolish the early mandatory retirement ages that are enforced in the formal sectors of most countries in emerging East Asia. As life expectancy rises, early retirement is becoming increasingly expensive to finance, whether on a PAYG or a funded basis. As workforces grow more slowly and begin to contract, economies may also face growing labor shortages. At the same time, the higher educational attainment and productivity of today’s working generations renders later retirement ages feasible. In rapidly developing economies, it may make economic sense for firms to compel unskilled older workers to retire to make room for more skilled younger ones. But as more highly educated and productive younger cohorts climb the age ladder, such practices are becoming a costly anachronism.

As already noted, majorities of current workers in most of the countries surveyed anticipate working longer than today’s retirees did. In most countries, moreover, there is substantial public support for raising the retirement age. In the West, proposals to raise the retirement age typically meet with widespread opposition from unions, senior benefit lobbies, and the public at large. In a Eurobarometer survey of 15 European countries, at least 70 percent of the public opposed it in every country except Ireland (Christenson, 2006). The public in East Asia has a markedly different view. When asked whether government should raise the retirement age, more than 40 percent of respondents said yes in China and Malaysia, more than 50 percent said yes in Hong Kong SAR and Singapore, and a stunning 85 percent said yes in Korea. Only in Taiwan Province of China did a large majority of respondents give the negative response that is typical in Western countries (Figure 6.11).
The Role of the Family, the Individual, and the State in Providing Retirement Income

During the past few years, several East Asian countries, including Singapore, Korea, and Taiwan Province of China, have recognized the new economic realities and begun to schedule gradual increases in their retirement ages. These reforms are a step in the right direction—and one upon which policymakers should hasten to build.

CONCLUDING REMARKS

Too often, policymakers assume that the retirement needs and preferences of tomorrow’s retirees will be much the same as those of today’s. This assumption is questionable in all societies because new generations always bring with them new expectations shaped by their unique life experiences. But the assumption is especially dubious in emerging East Asia, where the generation gap between 30-year-olds and 60-year-olds now yawns wider than anywhere else in the world. During the next several decades, retirement in East Asia will be utterly transformed. The role of informal family support networks will recede and the role of formal government or market substitutes will grow. Unless policymakers understand the public’s evolving preferences, they will struggle to develop effective policy responses. Although the survey discussed in this chapter by no means provides all the answers, it may help to point the way.

REFERENCES


Who Will Pay? The Dynamics of Pension Reform and Intergenerational Equity

Kenichiro Kashiwase and Pietro Rizza

INTRODUCTION

Pension reform is a challenging fiscal issue. With the aging of the population, if pension systems are not reformed, many advanced and emerging market economies face rising public pension spending. Potential measures to secure the long-term sustainability of pension systems include parametric reforms that increase the pensionable age and contribution rate, reduce the income replacement rate, or alter the way benefits are indexed. These reforms, however, can have very different implications for intergenerational equity. In the end, pension reforms require somebody to pay more—so that enough savings are generated over time—either in the form of higher contributions or reduced benefits. The lifetime burden generated by a pension reform varies across generations, and its magnitude depends on the size of the additional burden imposed by that pension reform each year and the number of years during which individuals are subject to the reform. Policymakers concerned with equity considerations should thus be knowledgeable about who would bear the burden of different reforms.

Generational accounting is one approach that can be used to study the generational fairness of policies (Auerbach, Gokhale, and Kotlikoff, 1991). An analysis based on generational accounting usually includes all public sector taxes and expenditures in the computation of the net taxes (i.e., the generational account) that each living person and future generations will have to pay, assuming that current policies remain unchanged in the long term. This approach can be used to evaluate the impact on intergenerational equity of reforms that help close a given fiscal gap. This evaluation usually compares current newborns—the generation born in the current year or the year of a reform—with future newborns—generations born in subsequent years. The different amount of net taxes between current and future newborns is the measure of the burden imposed by the reform.

1The rationale for using this forward-looking approach is the need to compare two generations over their entire lifetimes. By contrast, evaluations of fairness that include currently living generations would require a backward- and forward-looking approach. The standard forward-looking approach ignores what these living generations previously paid in contributions and received in benefits.
newborn and future newborns is meant to quantify the burden to be imposed on future generations, should the adjustment be postponed.

However, this approach does not take into account equity considerations among currently living generations—current retirees and current workers—following a pension reform. If pension benefits are too generous compared with contributions paid during the working life, and if the overall population is aging (common in many advanced economies), the pension system might become unsustainable and will require a parametric reform. Such a reform frequently involves an increase in lifetime net taxes on current workers (either by increasing contributions or by reducing future benefits) while leaving current retirees unaffected. This result, in turn, leads to an increase in disparity between currently living generations.

This chapter adds to the existing generational accounting literature by developing new measures of generational fairness, focusing in particular on currently living generations. The chapter shows how different parametric pension reforms, although ensuring long-term financial sustainability, may induce significant degrees of unfairness among living generations.

The rest of the chapter is organized as follows: The next section provides a brief overview of major pension reforms in the United States, Italy, and Japan during the last half century. Estimates of the generational equity of pension systems in the United States, Italy, and Japan, based on net taxes as a share of lifetime earnings for current retirees and working generations, as well as current and future children, is provided in the third section. The fourth section concludes. The appendix presents an analytical framework with which to study the impact of parametric pension reforms on intergenerational equity across living and future generations.

A BRIEF HISTORY OF PENSION REFORMS IN THE UNITED STATES, ITALY, AND JAPAN

United States

The U.S. Social Security system was introduced in 1935 when the Social Security Act was signed into law. The program began collecting contributions in 1937, and special trust funds were created for the revenue collected. The system reached maturity in the 1970s. Two major parametric reforms around that time contributed to large increases in spending. First, the government introduced wage indexation of the initial retirement benefit in 1972. Second, a mechanism known as a cost-of-living adjustment (COLA) was introduced in 1975 to protect the value of retirement benefits from inflation. These reforms contributed to large spending increases between 1975 and 1982 and led to the short-term financing crisis in the early 1980s (Martin and Weaver, 2005). To address this issue, the U.S. Congress passed amendments to the Social Security law in 1983 and introduced many significant changes based on the recommendations of the Greenspan Commission. The 1983 amendments set forth a schedule to raise the pension eligibility age in increments from 65 years in 2003 to 67 years in 2025. Workers born in
For 2011 and 2012, the Social Security payroll tax on employees was reduced by 2 percentage points, which yielded a combined rate of 10.4 percent. Self-employed workers also paid 10.4 percent, reduced from 12.4 percent, for these two years.

Italy

The Italian pay-as-you-go (PAYG) pension system developed gradually. A pension system with limited coverage already existed before the minimum insured period for eligibility was introduced in 1952, when Italy's PAYG system started taking shape (Brugiavini, 1999; Franco, 2002; Renga, 2010). By 1969, Italy's PAYG system was fully developed following transition to universal coverage during the 1960s (Martinelli, Chiesi, and Stefanizzi, 1999; Renga, 2010).

Italy introduced two major pension reforms during the 1990s to address rising long-term public debt caused partly by the acute economic slowdown that started in the 1980s (Beltrametti, 1994, 1996; Franco, 2002). The 1992 reform (known as the Amato reform) established the normal retirement age as 65 years for men and 60 years for women, to begin in 2032. Indexation of pension benefits was changed to the cost of living based on the consumer price index, and the reference working period for computing pension benefits was extended. The years of contributions required for pension eligibility were also raised to 20. In 1995, another reform (known as the Dini reform) was approved, which radically changed the shape of the pension system. The reform introduced a notional defined contribution (NDC) system, increased the contribution rate for both employees and the self-employed, and set the normal retirement age in the range of 57–65 years for both men and women. Minimum years of contribution for eligibility were also reduced to five years. The 1995 reform introduced a lengthy transition period in which old (defined benefits) and new (defined contributions) rules applied to different individuals according to the number of years for which they had already contributed to the system. This differential treatment was partly eliminated by the 2011 pension reform, which extended the NDC scheme to all workers. The scheme was applied to the remaining years of work. The 2011 reform also linked the statutory retirement age to life expectancy and temporarily reduced or suspended pension indexation for those receiving the highest benefits.

Japan

In Japan, an employee pension insurance system existed in the 1940s, but it covered only a limited number of people. To extend coverage to the entire population,

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2For 2011 and 2012, the Social Security payroll tax on employees was reduced by 2 percentage points, which yielded a combined rate of 10.4 percent. Self-employed workers also paid 10.4 percent, reduced from 12.4 percent, for these two years.
the country introduced the PAYG National Pension system in 1961. With rapid aging of the population and weak economic growth following the bursting of a financial market bubble in the early 1990s, the system became unsustainable. In response, the government implemented critical reforms in 2000 and 2004 aimed at maintaining the public pension system’s sustainability for the next century. The 2000 reform introduced a gradual increase in the eligibility age for the old-age basic pension. Incremental increases from 60 years to 65 years would take place for the basic pension during 2001–13 for men and 2006–18 for women. The eligibility age for earnings-related pension benefits is also scheduled to rise from 60 to 65 years during 2013–25 for men and 2018–30 for women. The 2000 reform set forth a macroeconomic sliding formula that adjusts the benefit calculation when the pension system is estimated to fall short of financial sustainability any time during the next 100 years. The government’s most recent projection (MHLW, 2010a, 2010b) incorporates this adjustment for 2012–38, gradually reducing the income replacement rate from 62 percent in 2009 to 50 percent in 2038. To further strengthen the long-term sustainability of the pension system, the 2004 reform introduced a gradual increase in the payroll tax from 13.6 percent in 2003 to 18.3 percent in 2017 by an annual increase of 0.354 percentage points. The reform also raised individual contributions to the national pension program, for 2005 through 2020.

PENSION REFORMS: IMPACT ON NET PENSION LIABILITIES AND INTERGENERATIONAL EQUITY

Net Pension Liabilities

United States

Despite parametric pension reforms, the trust fund surplus in the United States peaked at 18 percent of GDP in 2009 and has since declined. Retirees from the so-called baby boom generation (born between 1946 and 1964) began collecting their retirement benefits in 2008, as the result of which outlays in the Social Security program are projected to rise from 4.2 percent of GDP in 2007 to 6.1 percent in 2037 (CBO, 2011). By that time, the trust fund surplus is projected to be depleted. Even after most baby boom cohorts exit by the mid-2060s, gains in life expectancy will continue to increase pension spending. Subsequently, outlays will rise to 6.4 percent of GDP by 2085 under the Congressional Budget Office’s scheduled benefit scenario (baseline), in which benefits will be paid regardless of the Old-Age and Survivors Insurance and Disability Insurance Trust Fund balances. Given these profiles, the country faces a net pension liability (NPL)—the sum of future primary pension balances and legacy debt—of 63 percent of 2009 GDP. The appendix provides information on this calculation.

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3The increase applied to the Employees’ Pension Insurance program. The pensionable age for the National Pension program has been 65 years since its inception. At least 25 years of contributions are required between the ages of 20 and 60 to receive minimum benefits from the National Pension program.

4The number of years included for this calculation is 200.
Italy does not have a formal trust fund account for its social security program. Payroll taxes are the main source of funding, and the central government finances any remaining funding gaps from general revenues. The major reforms of 1992 and 1995 involved very long transition periods (Baldacci and Tuzi, 2003). Consequently, the benefits of the reforms were modest in the medium term (Cackley, Moscovitch, and Pfeiffer, 2006). During this transition period, the old-age support ratio will continue to decline, with the ratio projected to reach 1.5 (the historical low) in 2050. Significant reductions in pension spending (relative to the size of the economy) are only expected to take place from 2040 onward (Figure 7.1, panel 3). By the mid-2060s,

**Figure 7.1** Public Pension Systems: Benefits and Contributions (Percent of GDP)

1. United States, 1937–2085
2. Japan, 1940–2105
3. Italy, 1960–2075

Sources: Congressional Budget Office, 2011; Haver Analytics; Italy, National Social Security Institute (Istituto Nazionale Previdenza Sociale); Japan, Social Security Agency, Administration Department; Japan, Ministry of Health, Labor, and Welfare; Japan, Ministry of Internal Affairs and Communications; and authors’ calculations.

1This figure assumes that pension benefits for public sector employees, managed by the Mutual Aid Associations, are financed by general government revenues. The government subsidy that helps finance 50 percent of the old-age basic pension benefit accounts for about 2 percent of GDP on average, during 2009–15.

2Figure does not incorporate the effect of the December 2011 pension reform. Payroll tax revenues are based on official statistics. The figure is based on the assumption that before 1980, the series grew by the rate of nominal gross wages. In 1998, social security contributions declined with the abolition of employers’ compulsory contributions to the health care system as a result of the introduction of the regional production tax (OECD, 2000).
the primary pension balance is expected to turn to surplus, provided that social security revenue grows in line with projected GDP growth.

**Japan**

The primary pension balance in Japan is expected to turn to deficit following the second baby boom generation’s transition to retirement in the mid-2030s. Although the deficit will remain thereafter, the trust fund balance in Japan will be sustained through 2100\(^5\) according to the most recent projections by the Pension Bureau (MHLW, 2010a, 2010b). Unlike the United States, Japan includes future government contributions (from general revenues) in the long-term calculation of this trust fund balance. The 2004 reform raised government contributions so as to finance half of the old-age basic pension benefit payments. If sustained, this contribution would cost the government 2 percent of GDP, on average, during 2009–2100. A prolonged decline in fertility among Japanese women, which has been well below the natural replacement rate, led the population to shrink in 2005 for the first time since World War II. As a result of Japan’s long period of population decline (National Institute of Population and Social Security Research, 2012) the labor force is also expected to contract. Beginning in 2030, pension contributions would grow at a slower pace than the overall economy, while pension spending would grow faster as the second baby boom generation (born in 1971–74) starts retiring. To meet its spending obligations, the government will need to cut deep into the trust fund surplus beginning in 2050. Japan’s long-term NPL over the next 200 years is estimated to be 82 percent of 2009 GDP.

**Intergenerational Equity**

To underscore the degree of inequity across different generations in these pension systems, this section shows net taxes calculated in two different ways: from an individual perspective (Figure 7.2, panels 1, 3, and 5), and from the cohort’s perspective (Figure 7.2, panels 2, 4, and 6). The individual perspective assumes that a representative agent from each birth cohort (or generation) lives to age 100. The comparison of intergenerational inequity using this perspective is helpful because differences in age-specific mortality rates across generations do not change the results. The cohort’s perspective, in contrast, takes into account the differences in mortality of any given birth cohort over time. Improvements in life expectancy are implicitly captured in the cohort’s perspective.

**United States**

The Social Security program in the United States paid its first monthly benefits in 1940. The first-ever beneficiary, who was born in 1874, had paid payroll taxes

\(^5\)The baseline scenario assumes consumer price index inflation of 1.0 percent and investment return of 4.1 percent (nominal) per year.
Figure 7.2  Net Tax Paid by Different Generations (Percent of lifetime earnings)

Sources: Congressional Budget Office; U.S. Social Security Administration; Rizza and Tommasino (2010); Japan Administration Department, Social Insurance Agency; Ministry of Health, Labor and Welfare; Ministry of Internal Affairs and Communications; and authors’ calculations.

Note: All values are discounted for the United States based on the 10-year government bond yields; for Italy based on the assumed long-term real rate of 3 percent plus inflation measured by the GDP deflator; and for Japan based on the nominal yield of seven-year Japanese government bonds. For the individual perspective, a representative from each generation lives through age 100. A positive number indicates that the sum of social security taxes paid is higher than the benefits received over the individual’s life. For the cohort’s perspective, individuals who were born in the same year are considered. Because of natural attrition due to death, the number of individuals who survive to receive benefits is always less than individuals who pay taxes in any given birth cohort.
for only three years and collected benefits for 35 years. The first generations of pensioners, as well as current retirees, pay, on average, negative net taxes (Figure 7.2, panels 1 and 2), indicating that lifetime contributions paid to the government are smaller than benefits received from the government. As is the case with other countries that established PAYG pension systems, the legacy costs must be paid by younger generations. The legacy costs in the United States relative to the size of its economy, however, are not as large as in Italy or Japan because retirement benefits were set very low at the program’s inception (SSA, 2005). The burden on younger generations of financing these legacy costs are thus lower in the United States. This partly explains why generational inequity (the gap in net taxes paid) between current retirees and workers is much smaller in the United States than in Italy and Japan (Figure 7.2).

Pension reform in the United States has focused more on the revenue than on the expenditure side. At the program’s inception, the payroll tax rate was 2 percent and increased 10 percentage points by 1990. Much of this adjustment was front-loaded. The payroll tax rate increased to 7¼ percent in the early 1960s. Subsequently, “current retirees” from that time experienced significant increases in net taxes. Individuals born between 1926 and 1929 experienced the largest percentage increase in the tax rate. Additional increases in payroll tax rates after the 1960s have mainly affected current working generations. This impact, however, was mitigated by increases in income replacement rates. For earners of the median wage retiring at age 65, the replacement rates started rising gradually from about 30 percent in 1970 to more than 50 percent in 1982, before declining again to about 42 percent during the 1990s and the first decade of the 2000s (Martin and Weaver, 2005). The combination of these parametric pension reforms helped contain increases in generational inequity between the currently retired and working generations.

Indeed, generational inequity is low between current retirees, workers, children, and future newborns, from both the individual and the cohort’s perspectives. An incremental increase (two months) in full retirement age during 2003–2025, which eventually raises the retirement age from 65 years to 67 years, has already started affecting the retirement decisions of cohorts born in 1938 and later. As a result of this change, the full retirement age will be 67 for generations born in 1960 and later. The gradual increase in the retirement age mitigates the size of the increase in net taxes for any given generation relative to its counterparts who were born immediately after or before.

---

6Ida May Fuller paid a total of $24.75 in payroll taxes during 1937–39, and started collecting benefits in January 1940 at age 65. Between then and her death in 1975, she collected a total of $22,888.92 in Social Security benefits (http://www.ssa.gov/history/idapayroll.html).

7During the 1940s, income replacement rates were about 20 percent, on average, for median earners retiring at age 65. The replacement rates rose to 28 percent during the 1950s and 1960s.
Italy

By contrast, the public pension system in Italy shows substantial intergenerational inequity, both from the individual and the cohort's perspectives, indicating that the treatment of current retirees, current working generations, children, and future generations differs significantly. Those differences are mostly due to the effects of the long transition periods of the 1990s reforms. The scheme for computing pension benefits remained unchanged for workers who had already contributed to the previous defined-benefit scheme for at least 18 years at the time of the 1995 reform. Workers who had already entered the labor market but had contributed for fewer than 18 years were to receive pension benefits calculated as a mix of the two schemes—the defined-benefit scheme and the NDC scheme—weighted in proportion to the number of working years before and after 1995. Those most likely to be affected were born between the 1960s and the 1970s. Hence, the retired generations in 2010 will continue receiving pension benefits under the old defined-benefit scheme, which is among the most generous programs in the advanced economies (Capretta, 2007). Net taxes for these generations are the lowest. By contrast, the current working generations face far less generous pension benefits, creating substantial generational inequity between these two groups. Generations who were born in the 1980s and thereafter will receive even smaller benefits, on average, under the full NDC scheme, creating further generational inequity for “children” against “retirees” as well as “workers” (Figure 7.2, panels 3 and 4).

This inequitable treatment has been partly offset by the reform approved in December 2011, which established that the NDC scheme would apply to all workers for all remaining years of contributions, regardless of when they entered the labor market. However, this change affects a very limited number of people. The 2011 reform also linked the retirement age to life expectancy, and it suspended or reduced pension indexation for retirees who receive large pension benefits. These measures help improve the system’s long-term sustainability (OECD, 2011c). However, the reform is unlikely to significantly alter the extent of the inequity between current workers and current retirees. The latter have been affected by the temporary intervention on benefit indexation for the highest pensions. Linking the retirement age to life expectancy will be neutral for those people fully under the NDC scheme (typically younger workers). All in all, the 2011 reform, while securing financial sustainability, has done little to restore intergenerational equity.

Japan

Retirees in Japan have paid less in pension contributions than they have received in benefits (Figure 7.2, panels 5 and 6). Net taxes paid by cohorts of current workers, children, and future generations are significantly higher because of the

---

8If wages grow at a slower pace than nominal GDP, the implicit replacement rate will tend to increase.
reforms in the 2000s. Adjustments by the macroeconomic sliding formula, which are in the authorities’ baseline projection, would lower the replacement rate. For single-earner households, the replacement rate is projected to decline from 60 percent in 2010 to 50 percent by 2038. Those ages 37 or younger in 2010 (birth cohorts of 1973 and thereafter) are fully subject to the lower replacement rate. Those who were born before 1973 will face declining replacement rates for some years during their retirement. The scheduled payroll tax increase raises net taxes on the current working generations by varying amounts, depending on their remaining years in the labor market and the payroll tax rates they face during those years. Similarly, the scheduled increase in the pension eligibility age raises the net taxes of current workers by a different margin. As a result of these parametric pension reforms, the current working generations pay much higher net taxes, on average, than already retired generations. The government would need to implement additional pension reforms in the absence of government transfers to subsidize the system, which already finances half of the old-age basic pension.

The comparison of the three countries shows that substantial legacy costs exist in Italy, which must be paid by current workers, children, and future generations. Even if each worker lives to 100 (from the individual perspective), current children and future generations pay positive lifetime net taxes, thus, they are net payers—their lifetime taxes outweigh their pension benefits. From the cohort’s perspective, which takes into account underlying age-specific mortality rates, “children” and “future generations” will have to pay relatively high positive lifetime net taxes compared with current retirees, but the gap with respect to current workers is much smaller thanks to pension reforms implemented in the past. In all three countries, current retirees are net receivers from the pension system, and all other groups from the cohort’s perspective are, on average, net payers. This outcome implies that the expected improvement in life expectancy does not justify (from an equity standpoint) additional benefit cuts for these generations, because additional cuts would raise their net taxes further and increase generational inequity with current retirees.

Searching for Options for Intergenerationally Equitable Pension Reforms

When introducing reform measures, policymakers would like to determine how not to widen the inequity between different generations. Parametric pension reforms, which aim to reduce the net pension liability of pension systems, are prone to aggravating intergenerational inequities because they usually grandfather existing pension beneficiaries—who have paid the smallest amount of net taxes into the pension system. The larger the size of the NPL, the more challenging it becomes to lower it in an intergenerationally equitable way.

One way to address this issue is to claw back pension benefits from current retirees through the tax system. Purely from the view of intergenerational fairness, pension clawback offers a useful mechanism for correcting existing inequities.
The pension benefits of older retirees who paid the least into the system could be clawed back at a higher rate. Younger retirees would be clawed back at a lower rate. The rate structure can be formulated to account for existing inequities and the expected remaining years of life at a given age. If implemented, this policy should remain in effect until intergenerational fairness is restored. Implementation of such a policy would require a precise measure of generational fairness, its calculation, and transparency. This policy could make the system more generationally equitable, but policymakers might find it difficult to implement.

Alternatively, policymakers could focus on generational fairness among current workers, children, and future generations, as opposed to fairness with current retirees. To achieve this objective, a country that needs to restore the system’s long-term sustainability should implement pension reforms without delay. Putting off necessary reforms creates more and more generations that never pay their fair share, increasing the costs to future generations. This situation echoes the origin of the legacy costs passed from older retirees onto succeeding generations, including current workers, children, and future generations.

In addition, policymakers need to consider reform measures that would spread the cost of restoring long-term sustainability more broadly across currently living and future generations. When the cost is broadly shared, a financial burden imposed on any one individual (thus, any particular generation) will be smaller, preventing existing inequities from widening significantly.

**CONCLUSION**

This chapter builds on the generational accounting model to analyze the degree of intergenerational inequity in pension systems in the United States, Italy, and Japan. Past studies using generational accounting models generally focused on assessing inequities between current workers and future generations. Pension reforms, however, affect both current retirees and current workers, and past pension reform efforts show that the generosity of pension systems has varied even across different living generations. The chapter finds that the net taxes paid by current retirees are substantially lower than those paid by current workers in Italy and Japan, suggesting a high level of intergenerational inequity. This is not the case in the United States. For all three systems, net taxes from the system for current workers and children as well as future generations are positive when age-specific mortality is taken into account, suggesting that these three cohorts have to pay the substantial legacy costs and losses from forgone revenue from the past. Current pension reforms are still not sufficient to address long-term sustainability, and there are substantial needs to create fiscal space for future spending needs suggesting that the system in each of the three countries requires additional reform. To avoid widening existing intergenerational inequity, clawing back pension benefits from current retirees may be effective. Implementation of such a policy, however, may be difficult because of its complexities. The second best approach would be to focus on generational fairness among current workers, children, and future generations. Policymakers should be mindful of the potential impacts of pension reforms on existing inequities.
APPENDIX 7A. AN ANALYTICAL FRAMEWORK FOR ASSESSING THE INTERGENERATIONAL EQUITY OF PENSIONS

Net Pension Liability and Long-Term Sustainability

Assume that a country has a PAYG pension system. Under this system, the government collects social security tax (SST) from workers and pays social security benefits (SSB) to retirees. Define the primary pension balance (PPB) at time \( t \) as

\[
PPB_t = SST_t - SSB_t,
\]

In a given base year \( T \), the system displays net pension liabilities (NPL), which comprise the sum of the primary pension balance (PPB) between the periods \( T \) and \( S \) and the legacy debt \( D_{T-1} \), which captures benefits received by earlier generations of retirees who began receiving benefits before having fully paid into the system.\(^9\) Both PPB and \( D_{T-1} \) are accrued at nominal interest rate \( r \) and discounted to time \( T \) at rate \( d \). Thus NPL is defined as follows:

\[
NPL_{T,S} = - \sum_{i=1}^{S} \left( \prod_{i=1}^{S} \left( 1 + \frac{r_{T+i}}{1 + d_{T+i}} \right) \right) PPB_{T+i} - \prod_{i=1}^{S} \left( 1 + \frac{r_{T+i}}{1 + d_{T+i}} \right) D_{T+i-1} - \prod_{i=1}^{S} \left( 1 + d_{T+i} \right) PPB_{T+i} - \prod_{i=1}^{S} \left( 1 + d_{T+i} \right) PPB_{T+i} - \prod_{i=1}^{S} \left( 1 + d_{T+i} \right) PPB_{T+i}
\]

The last expression indicates that the long-term NPL can be thought of as the present value of the pension trust fund position (TF) at time \( T+S \), either being an actual TF or a notional TF (Chand and Jaeger, 1996). The NPL in percent of GDP at base year \( T (\kappa_T) \) can be thought of as a long-term sustainability measure. Let \( \bar{\kappa}_{T,S} \) at time \( T+S \) denote a sustainable level of NPL. Once the proper projection horizon \( S \) and the target level \( \bar{\kappa}_{T,S} \) are defined, the government will need to implement pension reforms to reduce the imbalance when \( \kappa_{T,S} < \bar{\kappa}_{T,S} \). The size of the savings from a given reform and the cost of interest payments in each period determine the speed of adjustment in the Trust Fund account, and controls how fast the NPL declines.

\(^9\)The legacy debt can be thought of as the amount of government bonds issued to finance the imbalances in the pension system. In reality, government bonds are indistinct from one another. In this simplified framework, the government only runs a pension system; therefore, all debt refers to pension system imbalances. In other words, the analysis does not rule out the option of temporarily financing pension imbalances by means of debt.
Intergenerational Equity

Net taxes are computed as lifetime contributions minus benefits as a share of lifetime earnings. This figure is calculated for a representative from each generation (a single-year birth cohort). The estimation and calculation methods follow Pertile and others (2011), but this chapter focuses on two items: social security contributions and pension benefits because it is only interested in equity considerations related to pension systems. Moreover, whereas Pertile and others compare individuals 20 years old or older (born in different years), the chapter estimates contributions paid and benefits received for all currently living individuals.\(^\text{10}\)

The main indicator of intergenerational equity refers to the difference in (age-based average) net taxes (as a ratio of average lifetime earnings) between current working cohorts and current retired cohorts. Other comparisons could be made; however, the chosen comparison between workers and retirees has the advantage that it summarizes the main message of the analysis. Intergenerational equity (\(GAP_t = 0\)) between working and retired generations can be expressed as follows:

\[
GAP_t = \sum_{a=0}^{a^t-1} \left( \frac{NETAX_{a,t}}{LIFEARN_{a,t}} \right) \left(1 + \sum_{a=0}^{a^t-1} \left( \frac{NETAX_{a,t}}{LIFEARN_{a,t}} \right) \right) = 0,
\]

in which

\[
NETAX_{a,t} = \sum_{g=0}^{g^t} \left( \tau_{a^t-t, a} e_{a^t-t, a} g_{a^t-t, a} \prod_{l=1}^{t} \mu_{l-t, l} \right) - \sum_{g=0}^{g^t} \left( \theta_{a^t-t, a} \prod_{l=1}^{t} \mu_{l-t, l} \right).
\]

\[(7A.2)\]

The payroll tax rate is denoted by \(\tau\). Use \(w\) to denote the efficiency-adjusted wage received by workers at any given age at time \(t\), which comprises the average wage rate \(e\) and workers’ efficiency \(q\) over their life cycle. The average wage rate will grow by the underlying productivity of the overall economy. The age-dependent survival probability is denoted by \(\mu\). When workers retire, they receive social

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\(^{10}\)Pertile and others (2012) use actual data from the Italian national accounts starting in 1980 to compute taxes paid and transfers received by individuals at different ages, which is why the comparison among generations is limited to individuals 20 years old or older. However, this chapter calculates contributions paid and benefits received by different individuals before 1980 for all three countries based on estimates and assumptions.
security benefits, \( b_{t,a} = f(w_t, a^b, \phi, \Theta) \) which are a function of the following parameters, the retirement age \((a^b)\), a history of worker’s wage, an income replacement rate \((\phi)\), and the indexation mechanism \((\Theta)\). The government determines the benefit formula \( f() \) by choosing a set of parameters as well as the payroll tax rate \((\tau_p)\).

**REFERENCES**


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CHAPTER 8

Is the Egg Basket Worth Its Price? The Fiscal Implications of Pension Privatization in Eastern Europe

JAN DRAHOKOUPIL AND STEFAN DOMONKOS

INTRODUCTION

Eastern European countries were among the pioneers in introducing mandatory privately funded schemes into their pension systems. Their approach to pension privatization, however, changed significantly after 2008. As a consequence of the global economic recession, the region saw a number of pension “reform reversals.” However, the crisis was only one of the factors that contributed to the transformation of the political and economic context of pension reforms. The first wave of reforms was also accompanied by a learning process about the nature of reform transition costs as well as their benefits.

The second wave of reforms, after 2008, produced a wide variety of outcomes. At one extreme, Hungary, a pioneer of pension privatization, de facto nationalized its mandatory funded pension scheme. Poland and, eventually, the Slovak Republic, reduced the size of their mandatory private schemes substantially by lowering the percentage of contributions diverted to these schemes from their pay-as-you-go (PAYG) pillars. The Baltic states temporarily reduced or suspended contributions to their mandatory private schemes. In contrast, the Czech Republic

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1“Reform reversals” is used to refer to policy adjustments discussed in this chapter because the term has become widespread after its introduction by the World Bank. However, the term is used as a policy description and does not imply any possible value judgment.

2By late in the first decade of the 2000s, the overwhelming majority of central and eastern European countries had national pension systems composed of three parallel schemes, also known as three pillars. In the three-pillar model, the publicly run pay-as-you-go scheme is known as the first pillar. Mandatory private accounts allowing savers to partially opt out of the public system are known as the second pillar. Finally, voluntary private accounts are generally referred to as the third pillar of the pension system.
actually implemented pension privatization in this period, albeit at a more modest level than had been common in the first wave of reforms. Privatization is thus still on the agenda in this new economic and political environment; however, the learning process has changed the rationale for privatization, as presented by its proponents. A diversification argument has gained prominence, seemingly replacing the argument that the introduction of funded schemes can resolve the pressure of demographic aging. Accordingly, the policymakers of the post-2008 era should follow the advice of Don Quixote’s servant Sancho Panza that “it is the part of a wise man to keep himself today for tomorrow, and not venture all his eggs in one basket” (Whitehouse, D’Addio, and Reilly, 2009, p. 10).

This chapter discusses the policy lessons learned from the two waves of pension reform in eastern European member states of the European Union (EU). It focuses, in particular, on the changing approach to the fiscal implications of pension privatization. The next section provides an overview of the two waves of pension reform as well as the political and economic factors that conditioned the outcomes. The focus then turns to the problem of financing the funding gap related to the diversion of contributions from the public pension system to private schemes, a key issue that was sidestepped in the first wave of reforms, largely because of a lack of understanding of the problem. The funding gap was underestimated, mainly because of a mistaken argument that explicit debt can be ignored because it replaces implicit debt. The third section addresses the actual solutions to the funding gap problem, showing that it remained largely unresolved in the first wave of reforms, despite the learning process that accompanied the implementation of pension privatization. The final section then discusses the new rationale that informs the second wave of reform, the “diversification argument.” Its growing importance follows from a learning process in which many of the myths that influenced the policy debates in the first wave of reforms were dispelled. However, the diversification argument itself can be seen as old wine in new bottles because its underlying rationale is largely based on one of the myths of the first wave of reforms—that is, the assumption that prefunding can hedge against the macroeconomic shock induced by demographic aging. Once this and other misunderstandings are put aside, what remains as a rationale for pension privatization in the second wave is not so much a positive economics argument but a mistrust of the state and collective provision of social insurance. The comparison of the costs and benefits of diversification thus suggests that the second proverbial egg basket (mandatory private pension accounts) comes at a rather steep price.

**THE EASTERN EUROPEAN LOVE AFFAIR WITH PRIVATE PENSIONS: FROM PENSION PRIVATIZATION TO REFORM REVERSALS**

In the late 1990s to middle of the first decade of the 2000s, the majority of eastern European countries pursued pension privatization, reforming their PAYG pension systems by following the model laid out by the World Bank in its
influential 1994 report *Averting the Old-Age Crisis* (World Bank, 1994). The World Bank model was a three-pillar pension system comprising a publicly financed first pillar based on the PAYG principle, a mandatory fully funded second pillar based on private individual accounts, and a voluntary fully funded third pillar. The second pillar was to be created by diverting contributions from the first pillar (privatization). The second pillars created in the first wave of reforms were often not based on cross-party consensus, but in all cases they initially survived the incumbency of their opponents. The Czech Republic and Slovenia were the only countries that did not implement the World Bank–style pension reform in this first wave. They pursued only parametric reforms in their state-run PAYG schemes. An overview of pension-reform trajectories in all eastern European member states of the EU can be found in Table 8.1.

The economic crisis of 2008 marked a turning point in the evolution of pension systems in eastern Europe. Public deficits and demands on state spending increased as revenues fell. Reduced fiscal space made financing the missing revenue flowing into the second pillars particularly challenging. Therefore, most countries pursued some form of reform reversal, but the range of outcomes also indicated a commitment to privatized pillars. By the end of 2012, only Estonia had returned to the full level of precrisis second-pillar contribution rates.

**Fiscal Constraint Effects**

Variations in immediate policy responses can be linked to the differences in fiscal constraints. These responses varied because the crisis had very different impacts across eastern Europe (Myant and Drahokoupil, 2012). Early reformers with larger second pillars also faced higher financing needs to cover the gaps created by

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3 In the World Bank model, the first pillar was supposed to provide a flat subsistence pension, but none of the central and eastern European countries implemented the pure model. The implementation of pension privatization often went hand-in-hand with linking pensions from the public PAYG scheme to past covered income.

4 In Hungary, a coalition led by the conservative right-wing Fidesz came to power in 1998, only six months after the three-pillar model had been introduced by the social democrats. The government stopped the planned increase in the second pillar contribution rates from 6 percent to 8 percent of gross wages, but it did not reverse the reform. In the Slovak Republic, when the opponent of pension privatization, the social-democratic party Smer, took power in 2006–10, it implemented only minor changes in regulation of the second pillar. In Poland, the government of the Democratic Left Alliance, a party that voted against privatization in 1999, did not reverse the reform when it took power in 2001, nor did the conservative-nationalist coalition government led by the Law and Justice Party beginning in 2005.

5 Bulgaria and Croatia, which were the exceptions, apparently prioritized the financing of second rather than first pillars, as indicated by particularly low aggregate income replacement rates in their first pillars.

6 Romania, another late reformer, continued with its initial plan of increasing contributions to the second pillar, following a break in 2009. The contributions should grow from 2 percent of covered earnings to 6 percent by 2016. Nevertheless, as of 2013, the country is still half a percentage point behind the original schedule, with contributions to the second pillar reaching 4 percent instead of the 4.5 percent initially planned.
## Table 8.1

<table>
<thead>
<tr>
<th>Country</th>
<th>Pension Reform in Central and Eastern European Countries</th>
</tr>
</thead>
<tbody>
<tr>
<td>(year second pillar was</td>
<td>Main Reform Tendency during the Global Economic Crisis</td>
</tr>
<tr>
<td>launched)</td>
<td></td>
</tr>
<tr>
<td>Bulgaria (2002)</td>
<td>• Three-pillar pension system</td>
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<tr>
<td></td>
<td>• 22% for regular employees,</td>
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<tr>
<td></td>
<td>5% + up to 1% of accumulated savings in second pillar</td>
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<tr>
<td></td>
<td>as management fee</td>
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<td></td>
<td>• Conventional defined benefit</td>
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<tr>
<td></td>
<td>No changes in contribution rates, but part of private</td>
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<tr>
<td></td>
<td>occupational pension funds nationalized; 1.8 percentage</td>
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<tr>
<td></td>
<td>points increase in overall contribution rate.</td>
</tr>
<tr>
<td>Croatia [EU member as of</td>
<td>• Three-pillar system</td>
</tr>
<tr>
<td>July 1, 2013 (2002)</td>
<td>• 20%, 5%</td>
</tr>
<tr>
<td></td>
<td>No changes in contribution rates; those born</td>
</tr>
<tr>
<td></td>
<td>between January 1, 1952, and January 1, 1962, who</td>
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<tr>
<td></td>
<td>voluntarily joined the second pillar in the past could</td>
</tr>
<tr>
<td></td>
<td>opt to move back to being full members of the first</td>
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<tr>
<td></td>
<td>pillar only.</td>
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<tr>
<td>Czech Republic (2013)</td>
<td>• PAYG system</td>
</tr>
<tr>
<td></td>
<td>• 28%, 20% of which are for old-age pensions only,</td>
</tr>
<tr>
<td></td>
<td>complemented by third pillar</td>
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<tr>
<td></td>
<td>• Conventional defined benefit</td>
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<tr>
<td></td>
<td>Introduction of a voluntary second pillar as of</td>
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<tr>
<td></td>
<td>January 1, 2013, with 3 percentage point transfer from</td>
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<tr>
<td></td>
<td>statutory social security (first pillar) contributions</td>
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<tr>
<td></td>
<td>plus 2 percentage points additional contributions by</td>
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<tr>
<td></td>
<td>savers.</td>
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<tr>
<td>Estonia (2002)</td>
<td>• Three-pillar system</td>
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<tr>
<td></td>
<td>• 22%, 6%</td>
</tr>
<tr>
<td></td>
<td>• Conventional defined benefit</td>
</tr>
<tr>
<td></td>
<td>Contributions returned to 6 percent after temporary</td>
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<tr>
<td></td>
<td>lowering between 2009 and 2011.</td>
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<tr>
<td>Hungary (1998)</td>
<td>• Three-pillar system</td>
</tr>
<tr>
<td></td>
<td>• 33.5%, 8%</td>
</tr>
<tr>
<td></td>
<td>• Conventional defined benefit</td>
</tr>
<tr>
<td></td>
<td>De facto nationalization of the second pillar and</td>
</tr>
<tr>
<td></td>
<td>transfer of assets accumulated in second-pillar</td>
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<tr>
<td></td>
<td>accounts to the state in a one-off transfer in 2011;</td>
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<tr>
<td></td>
<td>those who chose to stay in the second pillar can make</td>
</tr>
<tr>
<td></td>
<td>voluntary payments to their pension accounts, but no</td>
</tr>
<tr>
<td></td>
<td>statutory social security (first-pillar) contributions</td>
</tr>
<tr>
<td></td>
<td>are transferred into second-pillar accounts.</td>
</tr>
<tr>
<td>Latvia (2001)</td>
<td>• Three-pillar system</td>
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<tr>
<td></td>
<td>• 20%, 8%</td>
</tr>
<tr>
<td></td>
<td>• Notional defined contribution</td>
</tr>
<tr>
<td></td>
<td>Contributions to second pillar set temporarily at 2</td>
</tr>
<tr>
<td></td>
<td>percent of covered income, increased to 4 percent in</td>
</tr>
<tr>
<td></td>
<td>January 2013.</td>
</tr>
<tr>
<td>Lithuania (2004)</td>
<td>• Three-pillar system</td>
</tr>
<tr>
<td></td>
<td>• 26.35%, 5.5%</td>
</tr>
<tr>
<td></td>
<td>• Conventional defined benefit</td>
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<tr>
<td></td>
<td>Contributions to second pillar set at 2 percent of</td>
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<tr>
<td></td>
<td>covered income, with further decrease in 2012 (1.5%) ;</td>
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<tr>
<td></td>
<td>an increase to 2.5 percent took place in 2013.</td>
</tr>
<tr>
<td>Poland (1999)</td>
<td>• Three-pillar system</td>
</tr>
<tr>
<td></td>
<td>• 19.52% for retirement insurance only, 7.3%</td>
</tr>
<tr>
<td></td>
<td>• Notional defined contribution</td>
</tr>
<tr>
<td></td>
<td>Contributions to second pillar set at 2.3 percent;</td>
</tr>
<tr>
<td></td>
<td>increasing to 2.8 percent beginning January 2013;</td>
</tr>
</tbody>
</table>
|                             | contribution rate to second pillar should stabilize at 3.5
|                             | percent of covered income by 2017.                     |
| Romania (2008)              | • Three-pillar system                                   |
|                             | • 29%, 2%                                              |
|                             | • Point system                                          |
|                             | After a temporary freezing of second-pillar            |
|                             | contribution rates, the rates reached 3.5 percent in 2012;
|                             | increasing to 4 percent as of 2013.                     |
| Slovak Republic (2005)      | • Three-pillar system                                   |
|                             | • 18% for old-age insurance only, 9%                    |
|                             | • Point system                                          |
|                             | Contribution rates decrease from 9 percent of covered   |
|                             | income to 4 percent beginning September 1, 2012;       |
|                             | membership in the second pillar is made optional with  |
|                             | default option being not to join.                      |

Sources: Authors.

Note: PAYG = pay-as-you-go.
the reforms because the number of those who entered the mandatory funded pillar had grown significantly since the initial introduction of the funded schemes. With the exception of Hungary, the levels of sovereign indebtedness in eastern Europe were modest. The fiscal space in the Baltic states, however, was limited by large output contractions and their commitment to defending fixed exchange rates through “internal devaluation”—that is, cuts in public sector wages and public expenditure (Kattel and Raudla, 2013). The Baltic countries maintained their second pillars, but they had to lower contributions temporarily but significantly to be able to deal with the fiscal consequences of the crisis.

Among the central and eastern European countries (CEECs),  Hungary was particularly vulnerable to the crisis given its dependence on credit from abroad. The government experienced significant problems financing its debt after October 2008 and was compelled to seek funding from the IMF and the EU. These economic constraints led decisively to the de facto nationalization of the second pillar in 2010. This move allowed the government to stabilize finances through revenue increases—the one-off transfer of accumulated assets amounted to 10 percent of GDP. The influx helped to balance the budget at a delicate time when the government had decided to terminate a Stand-By Arrangement with the IMF. Other CEECs did not face such constraints, but they all chose to pursue austerity policies to address their growing deficits (Myant, Drahokoupil, and Lesay, 2013). The broad commitment to pension privatization had begun to unravel throughout the CEECs. Poland decided on a permanent reduction of second-pillar contributions largely because it was approaching the self-imposed constitutional debt ceiling of 55 percent of GDP. The Slovak Republic had more room to maneuver, given its low indebtedness and quick return to growth, but the socialist government elected in 2012 decided to permanently reduce the second pillar as part of a concerted attempt to balance the budget. Finally, the Czech Republic actually jumped on the pension privatization bandwagon when others were reversing various reforms, but the second pillar it introduced was modest and voluntary.

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7The CEECs comprise the Czech Republic, Hungary, Poland, the Slovak Republic, and Slovenia.
8The savings accumulated in the private funds were automatically transferred to the state in June 2011. Although savers had the option of staying in the private system, the conditions set by the new law were so unfavorable that only 3 percent chose to remain (Simonovits, 2011). In January 2012, all pension contributions, including those paid by savers who remained in the second pillar, began to flow into the public PAYG system.
9Contrary to the initial plans, however, the pension wealth redirected to the state budget was not used exclusively for the repayment of government debt. Approximately 1,200 billion forints (42 billion euro), 43 percent of the pension wealth accumulated in private accounts, was used for purposes other than servicing Hungarian state debt. These expenditures included the acquisition of the country’s biggest oil refinery and covering the revenue shortfall caused by a governmental tax-cut program.
10The Slovak left-wing government that took office in April 2012 decreased second-pillar contributions from 9 percent of covered income to 4 percent in September 2012. However, the Slovak reform reversal looks toward a gradual increase in the contribution rates to the second pillar. From 2017 onward, contributions should grow by a quarter of a percentage point per year until they reach 6 percent in 2024.
11A right-wing coalition gained an exceptional majority in May 2010, making the reform breakthrough possible.
Other Effects on Reforms

The change in pension privatization policies cannot be fully attributed to the fiscal effects of the economic crisis. The crisis was one of several factors that contributed to the transformation of the political, economic, and ideational context shaping pension reforms. First, the initial wave of reforms stimulated a learning process in international policymaking networks and among experts in eastern Europe. The information about the actual costs and benefits of these programs was poorly distributed in the first wave because of numerous reform “myths” (Barr, 2000; Orszag and Stiglitz, 2001). The propositions of the World Bank’s *Averting the Old-Age Crisis* were subjected to a wide range of criticism (for example, Barr, 2000; Fultz and Ruck, 2000; Orszag and Stiglitz, 2001; Barr and Diamond, 2008). Thus, following the first wave of reforms, pension privatization was less often seen as a solution to demographic aging. Nor was it assumed any longer to have automatic growth-stimulating effects.

In eastern Europe, the issues of first-pillar stabilization and pension privatization were finally seen as two separate problems, which had not often been the case in the first wave of reforms. The maturation of the first-wave reforms also contributed significantly to the learning process about the actual implications of pension privatization. New data made it possible to evaluate the performance of pension funds using their rates of return, fees charged, and investment strategies. This maturation also exposed the problem of transition costs that had been poorly understood in the first wave of reforms and had been left largely unresolved. Transition costs could no longer be ignored because significant austerity measures seemed necessary to continue financing these reforms. The ability to deal with transition costs became a major concern for the architects of pension privatization in the Czech Republic.

Second, the World Bank changed its views on pension privatization. The Bank’s active promotion of pension privatization had a major influence on the first wave of reforms and became an important basis for the political support for reformers (Müller, 2001; Orenstein, 2008; Lesay, 2009), but the consensus on the issue within the Bank began to unravel well before the crisis. By 2008, its pension privatization advocacy campaign was effectively over (Orenstein, 2011). The IMF, which had had a more critical stance on private pensions, also did not promote privatized pensions in its assistance programs after 2008. The withdrawal of the World Bank from the privatization agenda made pension privatization essentially a domestic affair, with party politics significantly shaping the policy reactions. In this new economic and ideational environment, pension privatization became an initiative of the liberal right (Drahokoupil and Domonkos, 2012).

Third, requests by countries that had introduced second pillars to exempt the transition costs of privately funded schemes from the Maastricht criteria were rejected.

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12 In this context, the circular transactions in which sovereign bonds issued to cover transition costs were bought by pension funds attracted attention in Poland and Hungary.

13 The change of party positions on pension privatization can be attributed to the learning process about its actual implications and to a better understanding of the difference between implicit and explicit debt discussed in the next section (Drahokoupil and Domonkos, 2012).
by the EU several times in 2004–05 and 2010. The EU’s Maastricht criteria obligated new member states to maintain their public deficit and public debt at less than 3 percent and 60 percent of GDP, respectively. These obligations significantly limited fiscal freedom before the global economic crisis. The narrower fiscal space, in combination with growing transition costs, made debt financing difficult. Therefore, dealing with the funding gap became a matter of distributing the costs in the short term.

The funding gap became a priority on the policy agenda for these reasons. The actual solutions to dealing with transition costs in the first wave of reforms had often been misrepresented. Because of the crisis, policymakers could no longer evade the question of transition costs and their financing, as done before 2008.

THE FUNDING GAP: LESSONS ABOUT IMPLICIT AND EXPLICIT DEBT

Pension privatization in eastern Europe was legislated in states that already had mature PAYG systems. The working-age population and current pensioners thus had already accumulated pension rights that represented future liabilities on state budgets. PAYG systems pay out pensions from present revenues. Pension privatization diverted part of this revenue to the second pillar. The subsequent funding gap in the first pillar resulted from the loss of resources that had previously been designated to finance the pensions of those with accumulated pension rights. In this chapter, the term “funding gap” refers to the annual budget revenue shortfall attributable to the introduction of mandatory funded pillars minus the decrease in claims on the PAYG scheme, also caused by the introduction of the second pillar. From a policymaking perspective, the transition costs of pension privatization include the funding gap and its financing costs—the actual transition costs are thus likely to be significantly larger than the funding gap. After introducing the second pillar, the number of people in the noncontributing workforce increases, whereas those who could, in theory, reduce the burden on the state by receiving part of their pension from the second pillar will not retire until several decades after the introduction of the reform.

14A formal request by countries that had introduced second pillars (including Hungary, Poland, and Sweden) to exempt the transition costs of private funded schemes from the criteria was rejected by EU institutions in 2004–05 (see Eurostat, 2004). In 2005, the European Council allowed transition costs to be exempted from the Maastricht debt criteria for a five-year transitory period and only at a declining rate (European Council, 2005, Art. 3.4). In 2010, the European Commission rejected another request of nine member states, most of them eastern European countries. However, it allowed for some discretion in starting the procedure against countries violating the criteria, but no explicit promises or amendment of criteria were made (for details, see Kovacheva, 2010; Kovacheva and Marini, 2010; Economic and Financial Committee of the European Union, 2012).

15Assume an economy in which, beginning in a given year, the mature PAYG system is entirely replaced by a fully funded system available for the younger part of the workforce. Once the last cohort relying purely on the PAYG pillar dies, the fully funded system becomes a mature pension scheme. In this hypothetical example, the pension reform would no longer increase the funding gap in the year in which the first cohort that exclusively relies on the funded scheme for its pensions enters into retirement.
A stylized depiction of the development of the annual funding gap can be seen in Figure 8.1. The funding gap in the Slovak Republic, which introduced its second pillar in 2005, was expected to peak in 2030, when the yearly costs would have reached approximately 2.5 percent of the country’s GDP. After this point, the number of retired workers who rely on the second pillar would have started to grow, thus reducing the annual funding gap. Contributions lost and benefits spared because of the introduction of the second pillar were expected to even out about 2052 (Ódor and Novysedláčk, 2005).

Some proponents of pension privatization question the relevance of the funding gap, claiming that these costs merely amount to the transformation of the implicit debt of the PAYG system into explicit debt. This notion indicates either a misunderstanding of the difference between implicit and explicit (real) debt or a conflation of implicit debt and real deficits.

Implicit Debt

Implicit debt is a theoretical construct that refers to liabilities, pension benefits in this case, due in the future (Cheikh and Palacios, 1996; Holzmann, Palacios, and Zviniene, 2004). In a PAYG system, these liabilities are financed by current revenues. The expected revenue streams could thus be understood as implicit financing, a counterpart to implicit debt. Real deficits can occur if current revenues do not match current liabilities. In the long term, therefore, a PAYG system can generate real deficits, or surpluses, if implicit debt and implicit financing do not balance. A conflation of these concepts has contributed to a misunderstanding of the fiscal implications of making the transition from PAYG to a funded system in the first wave of reforms. The debate often ignored the idea that, although pension privatization reduces implicit debt by making it explicit—with all related

16 This perspective was also prominent among policymakers who were supportive of the second pillar and whom the chapter authors interviewed in 2011–12.
consequences—privatization also reduces implicit financing by permanently lowering the public budget’s revenue stream from social security contributions.

It is important to note that both implicit debt and implicit financing are theoretical concepts based on predictions about an uncertain future. Both depend to a large extent on pension legislation, which provides the necessary tools for balancing state-run PAYG schemes by adjusting outlays and contributions. Instead of lowering implicit liabilities, increasing implicit financing, or doing both in the PAYG system, the proponents of pension privatization advocate partial replacement of an imbalanced public system with a privately funded scheme. This change is accompanied by an immediate increase in explicit indebtedness: pension liabilities accrued up to the point of pension privatization have to be honored by the state, but simultaneously, social security contributions are being transferred to individual accounts in the private scheme. Full privatization relieves the state of dealing with possible future imbalances in the pension system by transferring pension insurance risks to individuals. At the same time, it also binds the state to financing the pensions of an entire generation of retirees through means other than social security contributions from working-age cohorts. The decrease of contributions caused by pension privatization amounts to a shock theoretically equivalent to the death of the next generation that would have replaced the current workers—a scenario that is not equivalent to the actual demographic shock (discussed below). In the World Bank–type reform, the transition costs actually “pay” only for transforming a mature PAYG system into a mixed system with a funded pillar.

Simulation studies on second-pillar reforms and their reversals in eastern Europe show that the income replacement rate (levels of pensions relative to wages) is the key variable that influences the long-term sustainability of national pension systems (Égert, 2012). In Hungary, introducing a second pillar could actually lower the costs of the country’s pension system in the long term, but this savings effect is driven by the indirect effect of downsizing the first pillar (that is, lowering pensions), which has an excessively generous replacement rate. In principle, obviously, pension privatization is not needed to decrease first-pillar replacement rates.

Explicit and Implicit Debt

More informed understandings of transition costs were often based on the assumption that implicit and explicit debts are equivalent—and, correspondingly, that second-pillar pension savings are not newly created savings but only explicit valuations of implicit claims in the form of accumulated pension rights. Explicit debt generated by financing the funding gap thus should not count as new debt because it is equivalent to the implicit debt arising from the pension rights accrued in the social security system (the first pillar). In accounting terms, it is factually correct that the funding gap is not a new cost because it is produced by making the implicit debt (or part of it) explicit. Moreover, assuming an economy with a single interest rate and no transaction costs, pension privatization is cost-neutral, as explained in greater depth by Simonovits (2003) in his account of the no-pain-no-gain scenario (see also Kubíček, 2008). The level of public debt increases as a result
of the transition costs, but the costs of servicing that debt are equivalent to the returns on the second-pillar savings. In the no-pain-no-gain scenario, the outcome of privatization is a higher level of public indebtedness. And the operation of making the implicit debt explicit does not cost society or the public purse anything.

However, in addition to ignoring transaction costs and assuming that pension fund returns at least match the implicit returns on the PAYG system, the no-pain-no-gain model is based on the unrealistic assumption of perfect rationality and information. Such an assumption allows implicit and explicit debts and savings to be perceived as equivalent: an increase in the level of public indebtedness would thus have no effect on the ability of the state to borrow—and the newly created savings would have no impact on the savings behavior of households. The increase in the public debt level would be discounted by the decrease in the level of implicit debt, the amount of which would be known because of the availability of information on future changes in the first pillar (pension levels, retirement age, and so on). In other words, the negative reaction of the financial markets to higher public debt would be mitigated by a decrease in implicit debt. However, it is unlikely that the creditors in international financial markets would accept the long-term budget neutrality of the transformation of implicit debt into explicit debt (Simonovits, 2003). Financial market actors in the real world have proved not to conform to this assumption. The increase in explicit debt resulting from pension privatization had a negative impact on country risk ratings, while the assumed decreases in implicit debt did not lead to rating improvements (Cuevas and others, 2008). The refusal of the EU institutions to attribute perfect rationality to the market and thus to exempt the transition costs from the Maastricht criteria was thus correct from this point of view.

In the real world, future liabilities of the state toward its citizens (that is, implicit debt) are very different from current accumulated debt. Implicit debt is largely dependent on the creditor’s own legislation. Ultimately, the size of the implicit debt is subject to unilateral government decisions. Implicit liabilities are thus more akin to a political pledge than an actual quantifiable financial category (Holzmann, Palacios, and Zviniene, 2004). By contrast, the funding gap translates into a current and real liability that is often accumulated against foreign entities (nonresidents). Influencing that liability through national legislation might equal de facto sovereign default on debt. Experience has shown that the markets, indeed, price explicit and implicit debt very differently, with increased explicit debt levels being punished with little regard to a theoretical lowering of the sum of future obligations. The accumulation of explicit sovereign debt has thus involved the risk of increasing the dependence of CEECs on international financial markets, leading to worsening credit ratings and higher debt-service costs. Therefore, from the perspective of the state, retaining debt in its implicit form appears to be the preferable option.

Costs and Benefits

The assessment of transition costs has to take into account the benefits and costs of pension privatization that are ignored in the simple no-pain-no-gain scenario. Unfortunately, the assessment that informed the first wave of reforms was not balanced
It can be argued, however, that in a closed economy, gains by households from higher interest rates on their pension portfolios will equal losses on their nonpension portfolios that will (indirectly) also include government bonds (Kubíček, 2008).

Policymakers at that time were too optimistic about the gains from possible higher returns in the funded pillar (in comparison with the implicit returns in the PAYG pillar). The simple no-pain-no-gain scenario assumes a single interest rate, but the average return on investment can in reality be assumed to be higher than the interest paid on public debt, provided that the pension funds do not invest in state bonds. In practice, however, government bonds made up a large part of pension fund portfolios, making privatization appear to be a pointless accounting exercise. As shown in Figure 8.2, government bonds and bank deposits represented, on average, two-thirds of the total assets of the pension funds in 2011 and reached almost 80 percent in the Slovak Republic and Romania. This outcome obviously defeated the expectation that privatization would result in higher returns.

Furthermore, even when the circular transaction of pension funds buying government bonds is avoided, the assumption that portfolio returns will be higher than the implicit returns in the PAYG system (that is, real wage growth) cannot be taken for granted. This assumption is derived from a study of the long-term performance of the U.S. stock market (Kotlikoff, 1995), which cannot be easily generalized outside the United States. A number of countries can be found for which long-term portfolio returns do not compare well with real wage increases (e.g., Loužek, 2006). The experience of converging economies in eastern Europe also showed that returns in pension fund portfolios did not tend to perform well

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17It can be argued, however, that in a closed economy, gains by households from higher interest rates on their pension portfolios will equal losses on their nonpension portfolios that will (indirectly) also include government bonds (Kubíček, 2008).
Figure 8.3  Average Real Wage Growth and Real Rates of Return in the Second Pillar, 2002–07 (Percent)

![Chart showing average real wage growth and average annual real rates of return in the Second Pillar, 2002–07 for Bulgaria, Estonia, Hungary, Lithuania, and Poland.](chart)

Source: Data provided by World Bank staff.

In comparison with wage growth, Figure 8.3 provides a comparison of wage growth and average returns in the period before the 2008–09 financial crisis.

First, the returns were influenced by high wage inflation in the run-up to the crisis in the Baltic states, on the one hand, and, on the other, by initial high rates of return in Hungary, Poland, and the Slovak Republic caused by an appreciation of the value of state debt in the initial period. In 2008, pension fund portfolios recorded substantial losses. The period that followed was characterized by large year-over-year fluctuations.

Second, the comparison of returns in funded and PAYG schemes cannot be disentangled from the transaction costs of running a funded pension system. These costs need to be subtracted from the returns. Both PAYG and funded schemes incur management costs, but they are relatively low in PAYG systems. Large administrative costs are an inherent problem in a system with individual accounts and individual choice of pension provider. These fixed administrative costs also undermine the rationality of smaller second pillars that were introduced in the second wave of reforms in many countries. The experiences of the United Kingdom and Chile, both of which took a hands-off approach to regulating management fees, show that the fees were a drag on investment returns, consuming about 20 percent of the wealth accumulated during the savers’ careers (Diamond, 1998; Murthi, Orszag, and Orszag, 2001). In eastern Europe, management fees varied widely by country and by investment product. Although the overall

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18The year-over-year losses as of October 15, 2008, amounted to 30.5 percent in Estonia, 35.0 percent in Hungary, 48.4 percent in Lithuania, and 12.4 percent in the Slovak Republic (World Bank, 2008).
19In 2005, administrative charges in Poland were estimated to be about 18 percent of accumulated savings (World Bank, 2005). Polish regulation at the time was comparatively restrictive, but it gradually became even more restrictive.

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Management fees were adjusted to what seemed to be relatively moderate levels in the Czech Republic, Poland, and the Slovak Republic. In the Czech second pillar, management fees vary greatly among the various types of funds, ranging from 0.3 percent of net asset value (NAV) annually in the government bond fund to 0.6 percent of NAV and 10 percent of the annual return in the dynamic fund. The Slovak second pillar has relatively low management fees, reaching 0.3 percent of NAV annually. However, this fee is further increased by 1 percent of annual contributions and 10 percent of portfolio returns. In Poland, asset-based management fees range from 0.023 percent per month to 0.045 percent per month, depending on the size of the fund, but they cannot exceed 15.5 million zloty per fund monthly. Furthermore, the management fee also has a contribution-based component of up to 3.5 percent of yearly contributions. By contrast, second-pillar management fees in Estonia can amount to as much as 2 percent of NAV and 3 percent of contributions per year (World Bank, 2011).

Third, arguments in favor of pension privatization in the first wave of reforms included the assumption that the reform would spur output. The expectation was that capital from the increased savings would be channeled into more productive segments of the national economy. However, even in theory, this expectation is based on rather exacting conditions, including the following: savers would not lower their other savings as a reaction to owning shares in pension portfolios, savings accumulated in individual pension accounts would not be invested in newly issued national government bonds, and the funds would not be invested abroad or in commodities (Barr and Diamond, 2008). The eastern European experience defied these assumptions.

Finally, private pillars were expected to increase fiscal revenues by motivating workers in the shadow economy to formalize their status because contributions they paid would not be redistributed, but would instead be placed in workers’ own private accounts (Ferge, 1999; Müller, 2008). This rather optimistic and challenging assumption also proved unrealistic for the CEECs. No empirical evidence of which the authors are aware suggests that it would have been proved true in eastern Europe.

**DEALING WITH THE FUNDING GAP**

In theory, transition costs in the form of interest on new debt should be financed by a “solidarity tax” (Sinn, 2000) on the earnings of those who entered the second pillar, to meet the criteria of intergenerational justice (that is, those who will...
benefit from the second pillar should pay for the transition). In practice, however, intergenerational justice was a less important concern for reformers. Pension reform was thus largely financed from taxes on general income and consumption and from the sale (privatization) of assets produced by current and retired workers. Moreover, transition costs included not just the interest on new debt but the funding gap itself. Transition costs thus could have been covered through a variety of means: issuing state bonds, increasing taxes, cutting spending in the general budget or the PAYG scheme, or by using exceptional revenues such as receipts from privatization of state-owned enterprises.

The full funding gap thus represented a real liability that states needed to face—on top of the long-term costs of demographic aging and short-term fiscal challenges. The size of the funding gap often proved to be higher than originally expected by the first-wave reformers. The reformers underestimated the number of individuals who would enter the second pillar. In addition, as discussed above, pension privatization was expected to be at least partly self-financing and even to generate additional revenues by increasing output and formal employment. This supposition has proved to be excessively optimistic. By late in the first decade of the 2000s, the contributions diverted from the first pillar amounted to more than 1 percent of GDP annually in several first-wave reform countries. An overview of the funding gaps created by pension privatization in eastern Europe is provided in Figure 8.4. The funding gap experienced so far is only a fraction of the deficit that will occur once the baby boomer generation retires. Most of the pension expenditures associated with the retirement of the 1950s cohorts will have to be covered from the PAYG system. Yet the younger cohorts entering the labor market in the coming years will not only be smaller but will also have the possibility (or obligation) of opting out of the PAYG system.

None of the first-wave reformers provided a credible financing plan to cover the cash shortfall for the time until the World Bank–type pension system reaches

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22 The theoretical no-pain-no-gain scenario implies that governments need to cover only interest on the new debt to deal with the transition costs in a sustainable way. In reality, for the reasons discussed above, governments had little fiscal space or actual willingness to increase the level of public debt to finance pension privatization. And in practice, the actual transition costs were much higher, as discussed above.

23 This was a particularly important issue in Poland (Égert, 2012). In many eastern European countries a large number of middle-aged and elderly workers chose to join the multipillar system although the reforms were primarily aimed at younger cohorts. For example, in the Slovak Republic, the compulsory saving period before accumulated pension wealth could be annuitized was set at 10 years and think tanks close to the right-wing reform government considered ages 45 to 50 to be the limit for when it would still be sensible to enter the second pillar (SME, 2004). Nevertheless, as of June 30, 2006, almost 90,000 members (approximately 6 percent of all savers) ages 45 and above were enrolled in the second pillar.

24 The size of the funding gap was especially large in Poland, which undertook a World Bank–type pension reform in the late 1990s and made joining the second pillar compulsory for new labor market entrants.

25 In the CEECs, the retirement of the 1950s cohorts will take place mostly throughout the second half of the 2010s, but the retirement of the early baby-boomer cohorts have already started to retire.
In Slovenia, the funding-gap problem was a major reason the country did not pursue World Bank–type reform. The minister of finance thus joined the labor unions in opposing the failed 1998 pension privatization proposal.

The policies laid out to fund the transition costs were either politically unfeasible (i.e., cutting pensions payable from the PAYG system in Poland) or insufficient for covering the expenses of the several-decades-long transition (i.e., privatization in the Slovak Republic). As a consequence, debt financing proved to be a major option among all the reformers. This was not an option of choice but, for the reasons mentioned above, an option of last resort and least resistance. The reformers were also working under the assumption that the debt resulting from financing the funding gap would be discounted from total debt levels because it resulted from making the implicit debt explicit. Relying on debt financing became more difficult after the global financial crisis.

The region’s reformers appeared to go through a gradual learning process about the funding gap. This process led to more consideration of how the reform was to be financed as well as of the overall size of the second pillar in the late-reformer nations. In early-reformer Hungary, the dominant argument was that the second

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26In Slovenia, the funding-gap problem was a major reason the country did not pursue World Bank–type reform. The minister of finance thus joined the labor unions in opposing the failed 1998 pension privatization proposal.
pension privatization supporters that a financially sustainable second-pillar system should restrict any annual funding gap to no more than 1 percent of GDP. This rule of thumb informed pension privatization in the Czech Republic and reform reversals elsewhere in the CEECs. 28 Policymakers in the rest of the region seem to be ready to accept higher transition costs and to finance them through current revenues. The next section takes a closer look at what benefits these costs actually pay for.

THE DIVERSIFICATION ARGUMENT

Experience with pension privatization in the first wave of reforms has generated a learning process, which has dispelled some of the reform myths and created

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27 The lower bracket of the VAT rate rose from 10 percent to 14 percent effective January 2012. Nevertheless, it should be noted that the government did not establish a specific subaccount in the budget that would collect a portion of the revenue from VAT designated to cover the funding gap. Therefore, the border between general budget revenue and revenue collected with the declared purpose of financing the second-pillar reform is blurred. The Czech deputy minister of finance admitted this in November 2012 (Urban, 2012).

28 In Poland, the amount of social security contributions excluding interest transferred to the second pillar is estimated to be approximately 0.5 percent of 2012 GDP. In the Slovak Republic, the argument that pension reform should not divert more than 1 percent of annual GDP to the second pillar was already present among reformers early in the first decade of the 2000s (Záborský, 2003). In 2013, after the decrease in the second-pillar contribution rate from 9 percent of covered income to 4 percent, the social security contributions transferred to the second pillar will amount to approximately 0.5 percent of GDP.
awareness of the funding-gap problem. As a consequence, the immediate budgetary impact of the pension reforms was more carefully evaluated and the use of pro-second-pillar arguments shifted. The idea that pension privatization protects against the fiscal shock caused by demographic aging became less frequent; instead, a diversification argument, emphasizing the weaknesses of the public PAYG system, gained prominence. Accordingly, the main advantage of the second pillar is that it diversifies the sources of pension income for individuals (Bezděk and others, 2005; Burdová, 2010; Égert, 2012). The frequent use in the respective debates of a quote from Cervantes’s Sancho Panza about not putting all one’s eggs in one basket indicates the influence of Organization for Economic Cooperation and Development studies that included the Quixote story (e.g., Whitehouse, D’Addio, and Reilly, 2009; as pointed out by Vostatek, 2012).

Diversification refers to a technique of reducing risk by investing in a variety of assets with less than perfect correlation, thus reducing the risk associated with the performance of an investment portfolio. A multipillar system does indeed reduce the reliance of an individual on one form of retirement insurance and thus diversifies an individual saver’s exposure to risks. However, as discussed in the previous section, this diversification comes at the high price to the government of increasing explicit debt or of direct spending to cover the funding gap. The operation thus weakens the fiscal position of the state, effectively undermining not just public pension insurance, but potentially other forms of social insurance upon which an individual might rely.

Moreover, for pension systems, the benefits of diversification as a risk-reducing mechanism are limited. First, private pension pillars are not immune to regulatory risks, as often assumed. Second, and perhaps more important, diversification cannot protect against the main challenge faced by pension systems, namely, the effects of macroeconomic shocks, particularly that stemming from demographic aging.

Proponents of pension privatization, however, appear to refer primarily to protection against what could be called regulatory risks—that is, reliance on the state to provide old-age insurance. The introduction of a funded pillar is believed to decrease savers’ exposure to the risk of any future government defaulting on its implicit pension liabilities by arbitrarily changing the benefit formula of a defined-benefit (DB) PAYG system and thus lowering pensions—because pensions from the second pillar are provided by private entities based on a contractual obligation. Monthly pensions from funded systems are determined by standard actuarial calculations, taking into account life expectancy at the age of retirement and accumulated wealth in the individual account. Moreover, it is often argued by the advocates of second-pillar reforms (e.g., Urban, 2012) that, from the citizen’s point of view, owning explicit debt in the form of government bonds should be preferred to a mere promise from the government. Explicit liabilities stem from a legal relationship in which the state does not have the prerogative to unilaterally change the size of the debt. By contrast, so it is claimed, governments can default rather flexibly on part of their implicit debt, for example, by changing the benefit formula in a DB system.
The problem with this argument is that all pension arrangements are vulnerable to bad government. Although a complete default on liabilities to pensioners relying on the PAYG system is very unlikely, even under extreme conditions, a partial default on government liabilities may easily take place, for either explicit or implicit liabilities. A good example is an inflation tax or a change in the taxation of interest earned on state securities (Holzmann, Palacios, and Zviniene, 2004). Therefore, although the introduction of the second pillar limits the degree to which governments can alter their pension liabilities by amending social security legislation, members of the funded pillar are exposed to partial default of the state through other mechanisms—even when pension portfolios are not exposed to government bonds, a situation that was not avoided in eastern Europe. Taking this into account, it can be concluded that fiscally stable states are crucial for both public and private pension pillars.

Turning to the second point, diversification as an investment strategy applies at the individual level when the goal is to eliminate unique risk. Nevertheless, both the first and second pillars are exposed to similar macro-level challenges. Because macroeconomic shocks are essentially systemic risks, portfolio diversification is not a useful remedy. In fact, the way the diversification argument is used in eastern Europe is based on skepticism about the state’s ability to pay adequate pensions in the future. The most important question remains whether different systems manifest a different level of resilience to the shock of demographic aging. The diversification argument appears to be a new embodiment of one of the old myths of pension privatization, namely, that it allows insurance or hedging against the demographic shock. However, a possible output shock caused by demographic aging will hit the economy as a whole, and therefore represents a threat to the standard of living of pensioners regardless of the type of scheme in which they have been enrolled (Barr, 2012). If demographic aging leads to a decrease in aggregate output, both the implicit return in the public PAYG pillar and the explicit returns gained by pension funds investing in financial markets are likely to suffer.

The essential problem of demographic aging from the perspective of economic theory is not insufficient budget revenue, but a decrease in aggregate output (Barr, 1979; Eatwell, 1999; Barr and Diamond, 2006). If the aggregate output produced by a small workforce is not enough to sustain aggregate consumption at a desired level, then a shift to the second pillar cannot in itself be a remedy to the adverse consequences of this output shock on the living standards of the elderly (Barr, 2012). Therefore, a mere outsourcing of pension insurance to private entities cannot solve the problem. The only measures that will efficiently combat the adverse effects of demographic trends on GDP are those that address demographics directly (for example, increasing labor participation, fertility, immigration, or retirement age) or that improve the productivity of the relatively smaller workforce (for example, investment in education and new technologies).

Future pensioners cannot avoid the impact of a decline in aggregate output resulting from a demographic shock by merely joining the second pillar. Although it is true that a funded pillar is not dependent on current budget revenue, it is not
resistant to the adverse effects of demographic aging on the economy. The funded system will also be affected by the aging shock, but the transmission mechanism will be different from the one that acts in a PAYG system. If a country runs a PAYG system, then decreasing aggregate output will lead to a decline in aggregate wages and pension contributions. To maintain the balance of the PAYG system, the state will have to decrease pensions.

In fully funded pension systems, the retirement of a generation larger than the next generation causes either inflationary pressure—because pensioners’ consumption exceeds the desired savings of the workers—or a reduction in asset prices because the supply of assets by the retiring generation exceeds the demand for assets by workers. The two mechanisms would negatively affect second-pillar pensions by lowering either their real or nominal levels. However, if aggregate output does not decrease despite demographic aging, then pensioners’ growing aggregate demand for goods will not outstrip the aggregate supply of goods. Similarly, growing aggregate supply on the assets market will be matched with the growing aggregate demand for assets by workers earning more than they had in the past (Barr, 2000).

The centrality-of-output argument (Barr, 2000; Barr and Diamond, 2006) explains why pension privatization in itself cannot serve as a solution to demographic shocks in a closed economy. However, the second pillar could, in principle, permit investments in pension portfolios in economies not yet affected by adverse demographics. It could thus serve as a device to allow the population of aging countries to prepare for the consequences of a demographic shock by purchasing assets in “young” nations, that is, investment in less-developed and least-developed regions of the world. However, such investment goes hand in hand with greater political risks. At least in the current era, favorable demographic development and political risks—including political instability, sovereign risk, the weak rule of law, inadequate shareholder rights, and restrictions on profit repatriation—are positively correlated. Empirically, investment in emerging markets might lead to higher returns, but it also entails higher volatility of investment outcomes (Bebczuk and Musalem, 2009).

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29 It should be added that, until now, fund managers in the CEECs’ second pillars demonstrated considerable home bias, and investments outside the home country were normally allocated to OECD member states.

30 According to the United Nations (2006), in less-developed and least-developed countries, the share of children ages 14 and younger is expected to remain greater than 20 percent, while the share of people ages 60 and older will stay at less than 20 percent until the 2050s. By contrast, in more-developed nations, the share of those ages 14 and younger in the total population will reach 15.5 percent, while the elderly (60 and older) will constitute 33.5 percent of the population.

31 The term “sovereign risk” is used to include more than just the risk of sovereign default. This term also encompasses the risk that a sovereign would introduce foreign currency regulations or a lower standard of shareholder rights, threatening the profitability of investments.

32 Demographic diversification may also involve exposure to a possible exchange rate shock at the time of retirement (Barr, 2000). Dissaving pensioners’ need to exchange the currency of the country in which second-pillar funds were invested may lead to depreciation in the exchange rate of such currency and a decrease in the real value of their pensions.
CONCLUSION

Pension privatization in eastern Europe has generated a learning process about the actual implications of privatization and the problems associated with running privatized pension pillars based on individual accounts. Many of the problems of second pillars, as they were designed in the first wave of reforms, could be resolved by better regulation, which could, for instance, reduce the administrative costs of managing individual accounts. Furthermore, policymakers can use regulation to avoid the circular transaction through which second-pillar savings are invested in state bonds that actually finance the transition deficit of the first pillar. The main lesson from the first wave of reforms, however, seems to be about the nature of the costs involved in making the transition from the PAYG system to a mixed system. Because the difference between explicit and implicit debt matters a great deal in the real world, the consequences of the transition from a PAYG system to a funded one are much more severe than assumed in many of the theoretical models that underpinned the first wave of pension privatization. Policymakers have become well aware of these costs. In the longer term, policy toward the second pillar has been conditional on the calculation of the long-term benefits that privatization brings along with its concomitant costs. Arguments about the costs and benefits have become more balanced given that many of the arguments used in the first wave of reforms turned out to be myths.

However, the reform outcomes of the second wave are not necessarily optimal. In Hungary, nationalized pension savings were not used exclusively for the repayment of government debt. The new consensus on the desirability of smaller second pillars—which appear to be more sustainable—is difficult to justify given the large fixed administrative costs of running individual accounts with individual choice of pension provider.

Moreover, the prominence of the diversification argument in the recent discussion on reforms suggests lessons are still to be learned. As discussed above, the merits of the diversification argument are questionable in a number of respects. What is more, the argument, as typically used in the region, often starts from the need to address future fiscal challenges for public budgets caused by demographic aging. It is thus based on the great myth of the first wave of reforms—that privatization can address the problem of an aging population. More generally, diversification as an insurance tool does not apply to the main challenges faced by retirement insurance in the 21st century.

In fact, the other rationale behind the diversification argument appears to be beyond the analytical apparatus of positive economics or the social sciences: it is the normative bias against collective insurance solutions and the state in general. A deep mistrust of the state and distaste for collective solutions may make pension privatization seem worth the price (see Vostatek, 2012, on the Czech policy discourse). Paradoxically, pension privatization as an ideological quest to reduce reliance on the state is likely to be a self-fulfilling prophecy: it produces unnecessary fiscal pressures that are likely to reduce the capacity of the state to deliver social insurance and compensate for market failures. For this reason, the normative rationale for diversification is not found by these authors to be a wholly credible one.
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PART III

Country Experiences and Challenges
CHAPTER 9

Pension Reforms and Risks: Challenges for Pension Systems in Advanced European Economies

ANNA CRISTINA D’ADDIO

INTRODUCTION

All European countries have arrangements in place to provide income to older people when they retire. Nowadays, spending on old-age pensions is one of the largest social security benefits, equivalent to between 6 and 15 percent of GDP, but this has not always been the case. Originally the size of pension systems was far more limited. Increasing populations meant that the number of working-age people was growing, boosting the labor force, which resulted in higher revenues. In contrast, because of the immaturity of the systems, benefit payments were modest. Therefore, countries began to accumulate reserves, which allowed pension systems to become more generous and to enhance old-age programs. These old-age programs led to the substantial reduction of old-age poverty.

Despite unfavorable economic conditions experienced by most countries in the 1970s, growth in pension spending did not slow down—it even accelerated as a result of fundamental demographic and socioeconomic developments, which are still transforming societies in many advanced European economies. These changes are numerous.

First, the increase in life expectancy (both at birth and at older ages), the decline in fertility rates, and the larger size of the cohorts of baby boomers reaching retirement have resulted in a rapid aging of the population in the majority of advanced European economies. All else equal, these developments mean that pensions are paid for longer periods to an increasing number of individuals, while their financing is left to a shrinking pool of contributors. The financial sustainability of pension systems is thus under increasing pressure.

Second, higher incomes in old age and the preference for leisure over work, together with policies reducing retirement ages, encouraged an increasing share of

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people to withdraw from the labor market at relatively early ages. The decision to retire is complex and depends on many factors. Beyond individuals’ characteristics and preferences, institutional factors—such as those implicit in social security systems—matter.

Third, the financial, economic, and social crisis will have implications for the ability of pension systems to deliver benefits in the future, regardless of their structures. Falling rates of return will negatively affect the pension entitlements of many retirees now and in the future—especially of those who were close to retirement at the onset of the crisis (OECD, 2009). The recession in many advanced European economies has also caused a large fall in the employment rates of younger people, as well as large increases in their unemployment rates, which has intensified the effect of a shrinking working-age population. With decreasing wages and falling employment rates, the revenues of the system have declined just when rising unemployment and population aging have put increasing pressure on public expenditure. These trends will encumber the financing of pension systems regardless of whether they are prefunded or financed on a pay-as-you-go (PAYG) basis.

Fourth, transformations that occurred in the labor market (such as the increase in the number of people with more precarious or fragmented careers and the increase in the number of unemployed people, especially among the young) might have implications for the adequacy of retirement incomes for future generations of retirees. In the absence of adequate safety nets, many more people than in current experience might find themselves with insufficient retirement incomes because of the strong link between contributions and benefits that now exists in the majority of pension systems across advanced European economies.

Fifth, important societal changes have taken place, among them, rising divorce rates and higher numbers of single parents, the decline in the number of children per family, and the shift away from the model of the single breadwinner. The increase in female labor force participation tends to increase pension entitlements that women build on their own, which is important to combat the higher poverty risk women experience in old age. In contrast, divorce and single-parenthood may increase the risk that women will build insufficient pension entitlements, resulting in higher female old-age poverty. Again, solidarity mechanisms may make a difference for the most vulnerable individuals.

Finally, the majority of advanced European economies have reformed their systems, trying to balance the twin objectives of financial sustainability and income adequacy while at the same time remaining affordable to taxpayers and contributors. These reforms will affect the level and sources of retirement incomes of today’s workers and thereby their future economic well-being.

This chapter is structured as follows: The next section discusses the risks facing advanced European pension systems, while the subsequent section reviews how pension systems have responded to these challenges. The penultimate section analyzes how the objectives of adequacy and sustainability can be balanced. The final section concludes.
WHAT ARE THE RISKS FOR EUROPEAN PENSION SYSTEMS?

As set out in Chapter 2, public pension spending is projected to increase in most advanced European economies as a result of rapid population aging. The global financial crisis, with its high unemployment, low interest rates, and slow economic growth, added to the risks and pressures facing both PAYG and funded systems, affecting, although to different degrees, the ability of pension systems to deliver adequate retirement incomes and to be sustainable in the long term.

Demographic Changes and the Demographic Risk

Projections show that the majority of advanced European economies face unprecedented population aging although the magnitude, speed, and timing of the aging process vary by country. Both increasing life expectancy and falling birth rates have contributed to the greying of the population during the past few decades, a process expected to continue into the future.

Population aging has financial and economic consequences that have been extensively discussed in the literature. For example, growing public spending on pensions and health care may put pressures on public budgets, compromising financial stability and crowding out other expenditure programs (e.g., those devoted to families with children). An older labor force, if not adequately trained, may be less able to adapt by either moving geographically or occupationally. In turn, changes in the size and structure of the population may affect economic growth: as younger cohorts shrink, the number of people holding jobs falls, and the pool of domestic savings in the economy gets smaller, with negative consequences on productive investment (Burniaux, Duval, and Jaumotte, 2004; D’Addio and Mira d’Ercole, 2005; Oliveira Martins and others, 2005).

With only two, one, or perhaps no children at all, questions about the availability of family caregivers for adults in their old age will become more important (OECD, 2012a). Increases in the number of older people may also cause greater tensions between generations. If intergenerational solidarity breaks down, many might lose. As stated in OECD (2011b, p. 19), “population ageing compounds the threat from the current state of the public finances.” Increased tax revenues will be needed to support growing pensions and health care expenditures, and this tax burden is likely to be borne by younger, shrinking, cohorts.

In summary, even though the pace and the scale of the aging process differ by country, the greying of the population seems ineluctable. Aging may occur either from the top (through an increasing number of pensioners and longer life expectancy), from the bottom (through a reduction in fertility rates), or both, but in all cases it is a challenge. Increases in fertility rates may not immunize a country against the consequences of the demographic risk of pension systems if both the periods over which pensions are paid and the number of pensioners continue to increase. For these reasons, and because it affects multiple domains of modern
societies, aging poses a number of challenges for nearly all parts of the social protection system. Countries therefore must act now and take a comprehensive approach across policy fields to deal with aging.

**Societal Developments and Social Risks**

*The role of women*

Women’s role in the economy and society has changed deeply during the last few decades. Their increased participation in the workforce has contributed to a move away from the male breadwinner model. The gender gaps in employment and pay have become smaller. More women are building pensions in their own right, and the value of these pensions has increased over time (see OECD, 2012b, 2013b).

However, because of the tight link between contributions and benefits in the majority of pension systems across advanced Europe, shorter working hours, atypical career patterns, and some types of occupations that keep women in lower income during their working years mean lower pension entitlements for women relative to men. The gap in pension entitlements is large: across European countries, pension payments to individuals age 65 and older in 2009 were 34 percent lower on average for women than for men (see OECD, 2013e).

Divorce and single parenthood, both of which have increased over time, may also potentially affect women’s incomes in old age. Single parents tend to have low incomes because of caring responsibilities and lack of affordable child care. With a somewhat offsetting effect, some countries allow pension splitting between couples upon divorce, but these rules are relatively recent.

Taken together, these social and economic developments affect women’s outcomes in the labor market: for women who have full careers, they might result in higher old-age incomes, but for others they may not. Because women also live longer than men, they have to finance longer retirement periods. It follows that they should save more than men for their retirement—which often they cannot do because they earn less. They thus are subject to a higher risk of poverty in old age. Some advanced European economies, such as Sweden, that have reduced or abolished survivors’ benefits may even see—at least for the most recent cohorts of retirees—a worsening of women’s economic conditions in old age.

*The economic conditions of the elderly*

The economic conditions of older people have tended to improve in many European countries. Data from the OECD Income Distribution database suggest that the risk of poverty measured with respect to the 50 percent of median equivalized household income was close to 8.4 percent late in the first decade of the 2000s among advanced European economies, much smaller than the rate observed in the middle of that decade at about 11 percent, and also smaller than the OECD poverty rate at 12.8 percent (Figure 9.1). These trends vary by country: for example, in Austria, the Czech Republic, Greece, Poland, and Turkey, poverty rates of the elderly increased between the mid- and late 2000s.
In the context of slow economic growth, the evolution of average wages may also influence the effectiveness of minimum pensions because of wage indexation. For example, when the reduction in wages is larger than price increases, the median income stabilizes or declines and wage indexation may not protect pensioners from poverty risk.

The largest number of relatively poor persons among those older than age 65 was observed in Greece and Turkey in the late 2000s, while in the Czech Republic, France, Iceland, Luxembourg, the Netherlands, and the Slovak Republic, 5 percent or fewer of the elderly were at risk of poverty in the same year.

The economic conditions experienced by people in old age depend on many factors. The public provision of retirement incomes, particularly the level and coverage of safety-net benefits, is among these—which explains the relatively low risk of poverty of older people in some European countries such as Luxembourg and the Netherlands.\(^1\)

Changing the thresholds at which minimum pensions are set may substantially affect the number of people who are considered to be poor or nonpoor. As noted in the 2012 European Union (EU) pensions adequacy report, “a relative drop in incomes of elderly people by one-seventh could add another 8.7 million people to the group at-risk-of-poverty, as those with the income currently between 60 percent and 70 percent of median would fall under the 60 percent at-risk-of-poverty threshold,” while “Increasing the relative equivalised income of older

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\(^1\)In the context of slow economic growth, the evolution of average wages may also influence the effectiveness of minimum pensions because of wage indexation. For example, when the reduction in wages is larger than price increases, the median income stabilizes or declines and wage indexation may not protect pensioners from poverty risk.
people who are at-risk-of-poverty by 20 percent would help to lift around 7 million persons (those between 50 percent and 60 percent of median income), out of poverty (as defined within the EU2020 strategy)” (European Commission, 2012b, p. 75).

Data from the OECD Income Distribution database suggest that incomes of people over 65 were 86 percent of population incomes in the late 2000s across all European and OECD countries included in Figure 9.1. Older people have above-average population incomes in Hungary, the Netherlands, and Poland. Incomes are above 90 percent of population average in Austria, France, Iceland, Italy, Luxembourg, Portugal, and Turkey. In contrast, incomes of older people are relatively low—less than three-quarters of the population average—in Denmark and Estonia. Incomes in old age are also influenced by the type of pension provisions existing in a specific country.

Public transfers—earnings-related pensions, resource-tested benefits, and the like—make up more than two-thirds of the incomes of those older than age 65 across European OECD countries and across the whole OECD. For example, within European countries in the left panel of Figure 9.2, the largest shares (at 75 percent and more) are observed in Austria, Belgium, Finland, Ireland, and Luxembourg. In contrast, employment and self-employment provide a much smaller proportion of income of around 15 percent to those 65 years and older in the EU15, Iceland, and Norway.

However, averages hide country-specific situations. For example, in Greece, Iceland, Italy, Portugal, and Spain, people age 65 and older derive one-quarter of their income from their work and even more in Slovenia. The reasons for the higher shares of income from work in these countries are diverse. Among those, the age at which retirement is set and having gaps in contribution histories in the public pension scheme do matter (Figure 9.2).

Income from capital—mainly from private pensions—provides the largest share of incomes in Denmark, Iceland, the Netherlands, and the United Kingdom. In these countries, capital income represents about 30 percent or more of the incomes for those age 65 years and older.

Income composition also changes along the income distribution: older people at the bottom of the income distribution are likely to derive their income almost exclusively from public transfers, whereas at the top of the income distribution, private pensions and other capital income might play a greater role. The place of capital in retirement income has been growing and may lead to rising inequality of incomes in old age (see D’Addio and others, 2014).

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2 Such calculations assume that the value of the poverty thresholds do not change over time so incomes of the working-age population do not increase. This, of course, is not a desired result for the economic development of the EU.

3 Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden, and the United Kingdom.
The Impact of the Crisis on Economic Conditions

The financial, economic, and social crisis has had a profound effect on pension systems and retirement incomes. According to the EU Green Paper on Pensions, “The scale of fiscal deterioration following the crisis is equivalent to offsetting 20 years of fiscal consolidation, implying that fiscal constraints will be very strong in the next decade” (European Commission, 2010, p. 6).

In 2008, when the real rate of return on pension funds was negative across the OECD, at −10.5 percent, pension fund investments lost 23 percent of their value in aggregate (about US$5.4 trillion). Across the OECD, real rates of return were positive in 2009 and 2010 (at 6.0 percent and 1.4 percent, respectively), but they turned negative again in the first half of 2011 (−1.4 percent). Therefore, the investment performance of most countries’ pension funds was negative for the period 2007–11, with an average annual real net return of −1.6 percent. At the end of 2011, OECD pension fund asset values climbed back to a higher level than they had been at the end of 2007.

The crisis also had an adverse effect on the labor market. Unemployment grew steadily in the five years after 2008 irrespective of age group. Among people ages 15–64, unemployment rose by 2.4 percentage points between 2007 and 2011 across the OECD. In the age groups 15–24 and 25–54, the unemployment rate rose by 4.2 and 2.3 percentage points, respectively. Larger increases in the unemployment rates of these age groups have been registered in the EU15 where, conversely, the increase in the unemployment rates of people ages 65 and older has been smaller. Shrinking working-age populations together with high unemployment and lower earnings will reduce the contribution revenue of PAYG...
Changes in Advanced European Pension Systems in Response to Risks

The public pension projections presented in Chapter 2 suggest that some countries may succeed in stabilizing (or even reducing) pension expenditures in the future. The same estimates suggest, however, that the impact of population aging on public pension spending is still a substantial challenge for many countries. However, the scale of this problem in the future remains uncertain because the forecasting period is long and the projected values rely on a set of assumptions that may or may not materialize.

Adverse demographic and economic trends are behind the wave of pension reforms that have taken place in recent years in many EU countries. The reforms to retirement income provision are diverse and vary by country. However, recent reforms have often meant a retrenchment from public pension systems.

For workers who earn the average wage throughout their careers until reaching the national pensionable age, the projected average gross replacement rate will be about 54 percent when they retire (OECD, 2013e). Cross-country variations in the replacement rates are, however, large and depend on the pace, timing, and type of pension reforms already implemented or that are to be implemented gradually.

Some countries have implemented parametric reforms, whereas others have completely overhauled their pension systems with more systemic reforms (see Chapter 1 for a fuller discussion of what these entail). The pace of change in retirement income provision appears to have accelerated during the period 2007–11, during and after the financial and economic crisis. The first set of reforms was embodied within economic stimulus packages. Other reforms were also designed to address the structural weaknesses of pension provision that had been highlighted or exacerbated by the onset of the crisis (see also Chapter 1 in OECD, 2012b). More recently, pension reforms have been playing an increasingly important role in fiscal consolidation packages (see OECD, 2013b).

Achieving Adequacy and Sustainability through Longer Working Lives

Raising the statutory retirement age

Most workers leave the labor market well before the official pension eligibility age (Figure 9.3). On average, during the period 2006 to 2011, the effective age of labor market exit was 62.6 years for men and 61.6 years for women across the OECD-member EU countries, whereas the average official retirement age was 64.3 years and 63.1 years for men and women, respectively, in the same countries.
Because working longer may help to improve both financial and social sustainability, many countries have implemented reforms that aim to extend working lives by increasing the effective retirement age and enhancing incentives to work longer. In fact, the decision to retire (and thus, in most cases, to stop working) depends on a broad range of factors. The literature has identified a set of pull and push factors (Blondal and Scarpetta, 1998; Gruber and Wise, 1999, 2004). One of the factors that plays a key role is the age at which unreduced public pension benefits become available.

Data from OECD (2012b) show that the average official pension age in 1950 was 64.5 for men and just over 63 for women. In the following four decades, official pension ages fell to a low point of 62.7 for men and 60.9 for women in 1993. During that period, 10 OECD countries cut pension ages for men and 13 did so for women. From 1993 onward, the average pension age for men and women began to rise again (OECD, 2011c, 2012b; Chomik and Whitehouse, 2010).

The official pension ages are legislated to increase, in the long term, in many European countries. For both men and women, 65 will be the most frequently
occurring long-term pensionable age after a full career based on national rules and legislation. Fourteen countries either have set or are gradually setting the retirement age at 67 or older for men (13 countries for women). For example, Iceland and Norway are already at 67. Italy, which began to link pension age to life expectancy in 2013, and Denmark, which plans to link pension age to life expectancy beginning in the mid-2020s, are forecast to reach nearly age 69 for both men and women in 2050. Finally, Poland and the Netherlands are increasing the pension age for both sexes to 67.

However, even with these increases, the majority of advanced European economies will not succeed in stabilizing the expected duration of retirement.

Figure 9.4 suggests that among advanced European economies only Greece, Italy, the Czech Republic, the Netherlands, the United Kingdom, and Ireland are projected to stabilize men's expected duration of retirement by 2050, bringing it back to the 2010 level. However, no country except Greece is projected to succeed in bringing the expected duration of retirement back to the minimum observed for the period 1950–2010.

Retirement age is probably the most visible parameter of a pension system. Reforms that aim to increase it remain very contentious and have led to social conflicts in some European countries. A Eurobarometer survey on aging and solidarity issues shows that six out of ten Europeans reject the idea that the retirement age needs to increase by 2030 (European Commission, 2012c). In contrast, in some countries, such as Denmark, Ireland, and the Netherlands, a majority of the

Figure 9.4  Difference between the Expected Duration of Retirement Projected for 2050 and Other Periods (Years)
respondents to the survey acknowledged the need for official retirement ages to increase further (OECD, 2013c).

Incentives embedded in pension systems also matter for retirement decisions (OECD, 2011c; D’Addio, Keese, and Whitehouse, 2010). Indeed, qualifying conditions and penalties for early retirement, as well as increments to benefits for late retirement, may affect the willingness of individuals to continue working. To lengthen working lives, some advanced European economies—such as Austria, Belgium, Denmark, France, Germany, Greece, Italy, Poland, Spain, and the United Kingdom—have modified these parameters.

**Increasing the labor demand for older workers**

Interventions on labor supply are not enough: labor demand policies are essential. Older workers need help maintaining and enhancing their human capital to make them more employable, especially around mid-career. Seniority-based wage structures, which make it expensive to employ older workers, need to be reconsidered. Strict employment protection regulations can have unintended consequences, such as less hiring of older workers and the attraction of early retirement (OECD 2011c; D’Addio, Keese, and Whitehouse, 2010).

The cohorts of older people are getting larger while those of younger people are shrinking (and younger people are striving to find stable jobs), and employers need to adapt to these changes. Public policy may help in this respect, both to fight age discrimination (which is still an issue in some countries) and, more generally, to get employers to consider older workers to be strategic human resources.

To give older workers more choices about retirement may also positively affect their willingness to continue working. Some older workers might prefer to leave the labor market gradually. Others might prefer to stop working immediately upon reaching retirement age. More part-time work and telecommuting may help older people to extend their working lives. Flexible roles and schedules, and more command over the work they do, might increase older people’s willingness to stay in the labor market. As OECD (2011a) has shown, many older people take on caring responsibilities, either for their grandchildren or for older family members. These persons may consider working full time to be an impediment to their caring responsibilities, which may lead to their withdrawal from the labor market.

Employers have an important role in making these changes happen. Besides flexibility, the offer of adequate training and learning opportunities is important to preserve and enhance workers’ skills, and may also lead to productivity gains. Career guidance also matters for older individuals. Moreover, shifting heavier tasks onto younger workers may help both to prevent accidents in the workplace and to reduce health risks for older workers. Older workers may also play a crucial role in training young workers, especially in sectors that require specific knowledge and expertise.

**The role of taxation**

Tax policy may also affect the retirement decision; for example, where taxes and social contributions on part-time work are too high, older people may decide to
retire as soon as they reach retirement age. Taxes and benefits that do not penalize working beyond retirement age might make it easier and eventually encourage a flexible transition into retirement. For example, although combining work and pension receipts is not permitted in Luxembourg, those who continue working beyond retirement age receive refunds of the social contributions. In other countries, such as the United Kingdom, people working beyond the statutory pension age do not pay national insurance contributions.

Pension rules also play a key role in the extent to which people want to combine or succeed in combining work and pensions. For example, working longer does not reward individuals when the system is not actuarially fair, or when pension entitlements no longer accrue after a given number of years. Also, the salary used as a reference for pensionable earnings may reduce a worker’s willingness to stay in the paid labor market beyond retirement age.

Other Reforms

Reducing benefits

To enhance the financial sustainability of pension systems, some advanced European economies, such as Greece, have cut benefits directly. These direct cuts are very rare whereas indirect cuts are more common. Indirect cuts tend either to apply equally (or almost equally) across different earning levels—Austria, Finland, Germany, and Italy—or to preserve lower earnings—as in France, Portugal, and Sweden.

Indirect cuts to pension benefits may take various forms. One is the change in the reference salary used for pensionable earnings. Many countries moved from a limited number of best or final years’ earnings to average lifetime earnings (Austria, Finland, Italy, Poland, Portugal, the Slovak Republic, and Sweden) or to longer assessment periods (France). This move tends to make the system more progressive, whereas using a limited number of years (best or final) often rewards workers who have best or final years’ earnings higher than their lifetime average earnings. Moreover, in countries with large informal sectors, reference to a limited number of best years provides a large incentive to underreport earnings in earlier years and in other countries, they reinforce the system distortions.

Many countries have also moved toward a stronger contributory principle. This transition has occurred mainly through an increase in the number of years of paid (versus credited) contributions needed to qualify for a full pension and through the switch from defined benefits to defined contributions in private pension provision.

Changes have also occurred in valorization and indexation measures, with countries tending to move to less generous adjustments to reduce costs. Valorization and indexation measures generally aim to protect retirement incomes against the risk that inflation will erode earned entitlements of still-active workers on the

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4See OECD (2013c) for an extensive discussion about the options used in the EU; also see Eurofound (2012).

5When pensions are based on a contributory principle, entitlement to benefits is conditional on having contributed enough, either length of the contribution period, contributions paid, or both.
Governments also tend to modify indexation rules, typically in a procyclical way, which introduces a substantial degree of political risk in the purchasing power of retirement incomes (Whitehouse and others, 2009).

According to Antolin (2008), 10 out of the 30 OECD countries analyzed had mandatory occupational funded pensions, in 8 they were mandatory personal, in 26 they were voluntary occupational, and in all there were some voluntary personal schemes.

See also the OECD road map for the good design of defined-contribution schemes presented in Chapter 5 of the OECD Pensions Outlook (OECD, 2012b). See also Antolin, Payet, and Yermo (2012).

Automatic adjustment mechanisms in pension systems

Finally, an important development in pension systems is the introduction of automatic links between demographic, economic, and financial developments and the retirement income system (D’Addio and Whitehouse, 2012; Chapter 2 in OECD, 2012b). This innovation attracts considerable interest for economic and political reasons.

Automatic adjustment mechanisms are intended to improve the credibility of the system and avoid unanticipated burdens (see Box 9.1). In theory, putting pensions on “autopilot” may immunize pension financing against most of the demographic and economic risks discussed in this chapter. It may also protect the pension system from political risks, making it easier to introduce changes to parameters and rules—changes that are often contentious.

Risks and Pensions: How to Balance Adequacy and Sustainability Objectives

The times between when people start to contribute, when they claim a pension, and when they claim their last benefit are long. Therefore, pension promises are subject to a large range of risks and uncertainties.

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6Governments also tend to modify indexation rules, typically in a procyclical way, which introduces a substantial degree of political risk in the purchasing power of retirement incomes (Whitehouse and others, 2009).
7According to Antolin (2008), 10 out of the 30 OECD countries analyzed had mandatory occupational funded pensions, in 8 they were mandatory personal, in 26 they were voluntary occupational, and in all there were some voluntary personal schemes.
8See also the OECD road map for the good design of defined-contribution schemes presented in Chapter 5 of the OECD Pensions Outlook (OECD, 2012b). See also Antolin, Payet, and Yermo (2012).
Automatic Adjustment Mechanisms in Pension Systems

As discussed in D’Addio and Whitehouse (2012) and in OECD (2012a), a variety of instruments can be used to adjust pension systems to demographic and economic changes to make them financially sustainable. Some of these are (1) adjustments in the benefit level (or the value of pension benefits), which directly reduces expenditures; (2) adjustments in pension eligibility ages, which cuts spending by reducing the duration over which pensions are paid and increases revenues through longer payment of pension contributions; (3) adjustments in contribution rates, which increase the revenues of the scheme; and (4) drawing on a reserve fund, providing one exists.

The way in which these “automatic” adjustments work may vary. For example, contribution revenues might be increased by enlarging the base (raising the ceiling, levying contributions on unearned income, and so forth) rather than by increasing the rate. Benefit levels can be cut in different ways: proportionally for all or proportionally lower cuts for low earners. Effective benefit cuts can be imposed on existing retirees by changing the policy for indexing pensions in payment. Benefit cuts on current workers can be restricted only to new pension accruals or can be applied to the rights already accrued.

The most common automatic adjustments link benefits to life expectancy. This link has been strengthened by the shift away from defined benefit to defined contribution plans in private pension provision. In the provision of public benefits, the link to life expectancy has occurred via the move to notional defined contributions (see, e.g., D’Addio and Whitehouse, 2012) or with the introduction of specific mechanisms in defined benefit plans (as in Finland, Germany, and Portugal).

Many countries are moving toward linking pension age or contribution periods to life expectancy. These mechanisms already exist in Denmark, France, Greece, and Italy.

Investment risk is only one of them; the demographic, economic, and societal developments that have occurred in the past few decades are also of paramount importance for public pension provision. The increase in life expectancy and the decline in birth rates have resulted in rapid population aging and rapidly growing costs of paying for pensions. This cost has become even more difficult to finance with the onset of the crisis because of the general decline in government revenues. The high level of public pension expenditure—projected to persist through the coming decades—has thus become a key concern, involving changes in both fiscal and labor market policy.

Since the end of World War II, pension reforms have become central to the policy agenda of many European countries, first in their construction and expansion, then in consolidation and retrenchment (see, e.g., Whitehouse and others, 2009; Clements and others, 2013; OECD, 2011c, 2012b, 2013a, 2013e). The scale of the adjustments in these reforms often requires people to change their working and saving behavior.
The key question has become, how can governments maintain retirement income adequacy while enhancing, maintaining, and restoring the financial sustainability of pension systems? In other words, how can governments design pension systems that are both socially and financially sustainable, affordable, and equitable? (OECD, 2011c, 2012b, 2013c).

This is clearly a difficult task: Adequacy may be pursued by increasing public pensions, but these increases come at a higher cost for the state, which worsens financial sustainability. Conversely, substantial reductions in public benefits come at the expense of lower social sustainability, which may lead to higher poverty risk for the elderly and thereby to higher spending on safety net benefits.

These issues clearly have no simple answers. National retirement income systems are complex, and the pension benefits they deliver depend on a wide range of factors. Differences in pension systems’ parameters and rules, but also the diversity of socioeconomic and demographic conditions of each country, add to this complexity. Moreover, an ideal pension system, a sort of one-size-fits-all, does not exist. But a number of principles that can help pension systems to cope with demographic, financial, and socioeconomic risks do exist.

With increasing life expectancy and improved health conditions, extending working lives would help achieve the twin objective of social and financial sustainability (OECD, 2011c, 2012b). By working longer, individuals can accumulate more pension entitlements to finance (possibly longer) retirement periods. Extending working lives might also improve the finances of the system by increasing its revenue base. This measure might be more acceptable than increasing contribution rates—which may be perceived as an increased tax and thus distort employment behaviors.

However, although people may start to have a more favorable view of working beyond the retirement age, the possibility of them actually doing so depends on a number of factors. National socioeconomic contexts, rules and parameters of pension systems, labor market policies, other social policies, and individuals’ characteristics and preferences are among these.

To meet the twin objectives of social and financial sustainability, countries might also improve the targeting of public pension benefits by focusing on those individuals who are most in need of this type of support. More finely tuned redistribution might help reduce poverty in old age while keeping public pension expenditures at lower levels. Better targeting is essential because retirement benefits are not equally distributed among the elderly: some older people may have satisfactory levels of income in their later years while other older people may be in poverty. Some may be “asset rich and income poor” while others may be “asset poor and income poor,” which makes a substantial difference in their standards of living (D’Addio, 2014).

A third way to help solve the current pension puzzle is to encourage people to save more, for example, by increasing coverage of, and contributions to, private pensions. A diversified pension system may also help reduce the exposure of pensioners to excessive risks (OECD, 2012b).
CONCLUSION

Future retirees’ public pension entitlements are likely to be very different from those of current retirees. The characteristics of pension systems will shape some of the differences. However, the extent to which people will be willing and able to work longer and to save more and the ability of the social protection system to cushion events that lead to diminished entitlements will also be crucial determinants of future pensions.

Demographic, social, and economic developments are transforming the societies of many advanced European economies and causing important risks and challenges for their public pension systems to arise. Indeed, in an environment characterized by rapid population aging, low economic growth, and rising unemployment, revenues tend to decline while expenditures tend to increase.

Therefore, achieving the twin objectives of financial sustainability and retirement income adequacy has become even more difficult than in the past but remains essential for countries to meet their pension promises.

Improved financial sustainability might be pursued together with a set of rules or principles to ensure that benefit levels remain adequate. In contrast, the achievement of financial balance through continuous cuts to pension benefits may lead to extra spending on safety nets in the future and any savings might then be offset by larger spending needs.

Retirement ages or contribution rates might increase further. However, some individuals cannot continue working at older ages while others can. These differences depend largely on individuals’ socioeconomic characteristics and may mean that the process of increasing pension ages might, at some point, reach a ceiling (Whitehouse and Zaidi, 2008; D’Addio and Queisser, 2011). Similarly, the increase in contribution rates may continue only if younger generations are willing to shoulder a growing burden of contributions and taxes. Instead of increasing contribution rates, countries might extend coverage more broadly to workers in atypical work or in self-employment. Countries might also shift part of pension financing from wage-based contributions to more general taxation, which will reduce the nonwage labor costs, though this solution may encounter resistance.

The main challenge that advanced European economies still face is how to increase the effective retirement age. Increases in pension ages alone may be insufficient to ensure that older people work longer if there are other barriers—for example, on the labor demand side—that prevent them from finding and retaining jobs (D’Addio, Keese, and Whitehouse, 2010; OECD, 2011c). In this respect, public policies have an important role to play to reduce age discrimination and to improve both training opportunities and working conditions for older workers. However, for these policies to be successful, employers have to recognize the potential and richness of the older workforce as a strategic resource to be mobilized.

Age-management strategies are becoming more common in the workplace, but there is room to develop them further. Issues of learning and qualification, of career development at older ages, of health and work, of job design, of flexible working
times and retirement patterns need to be addressed to effectively change the situation of older workers. These policies might also provide productivity gains, and thereby sustain economic growth, while addressing the issue of retirement-income adequacy.

Another challenge facing pension systems is that of people who have precarious jobs and earnings profiles during their working lives. Pension systems have moved toward a strong contributory principle, which depends on a stronger link with paid employment. Even though voluntary contributions can be paid to help secure entitlement to certain benefits, the largest share of pension benefits will be related, in the future, to paid employment and to the earnings received while working.

Social and labor-market risks that affect the periods of time spent in paid employment or the level of earnings—such as being unemployed, caring for children and elderly relatives, or consistently earning low wages—may have important consequences for the adequacy of long-term pension entitlements. Mechanisms that cushion the potentially negative effects of some social and labor market risks are therefore important (OECD, 2013b, 2013e). Shorter contribution histories because of lower women’s pension ages will also lead to lower pension entitlements, even in the absence of a gender pay gap. In this respect, the equalization of pension ages between men and women is an essential step to fight against old-age poverty.

The increasing role played by private pensions may also pose specific challenges for retirement-income adequacy because, unlike public pensions, private pensions are voluntary in many countries. The concern in this case is how to ensure that people are contributing enough to secure a comfortable retirement income. Participation in and contributions to these plans largely follow from decisions made by employers and individuals, leading to wide disparities in coverage and contribution rates across the population and between countries (OECD, 2012b; Antolin and Whitehouse, 2009).

Political risk may be reduced with automatic adjustments; however, these mechanisms do not solve some important behavioral challenges, such as how to encourage people to either work longer or save more. For example, increasing the official retirement age does not ensure that people will actually work longer. Reducing public benefits does not ensure that people will save more in alternative financing vehicles. Putting pensions on autopilot might also mean that future financial sustainability is enhanced at the expense of lower social sustainability. Much more effort should therefore be devoted to correctly designing these mechanisms and to identifying the failures that may derive from their implementation.

Trust in the system has also been undermined by the financial crisis. The complexity of pension systems obviously does not help. This lack of clarity makes it difficult for the average contributor to know his or her future entitlements. Transparent changes and clear information might help improve confidence in the pension system. In this respect, financial education is important for both young and older workers to enable them to make adequate pension preparations. Young people, in particular, need to understand how and in what forms
they can save. They also need to know that even though they shoulder the pension systems in many countries, they are not the only givers: older people are substantial givers of time and money (see OECD, 2011a). Acknowledging this is important for future intergenerational solidarity.

Thus, current conditions may require further efforts by both contributors and pensioners. The policy issues then become whether future workers can afford further increases and whether the revenue base can be extended such that the burden can be shared more equitably across generations.

Given the current economic context and the fragile outlook for the future, discussing financial sustainability alone is not enough. To create a more inclusive path for growth, the question of the adequacy of pension benefits—the social sustainability of pension systems—should be an essential part of the debate on future pension systems. In this perspective, getting a better understanding of the living standards of the elderly is essential, which indicates that other resources beyond retirement incomes, such as real and financial wealth and publicly provided services, should be considered (OECD, 2013e).

The design and implementation of pension systems may also require an open, clear, and constructive debate with the different stakeholders. This may also provide individuals with better opportunities to be proactive and to adapt their saving and work behaviors to changing circumstances.

In summary, pension systems are facing large socioeconomic, labor market, demographic, financial, and budgetary challenges to which there is no magic solution. A comprehensive strategy aimed at boosting labor force participation, increasing the willingness of older workers to stay in the labor market longer, and encouraging people to save more while protecting the most vulnerable is essential.

Recognizing the need for pension policies to be conceived and realized in connection with other arrangements, such as family policies, labor market policies, and education policies, is also important. Only a holistic approach to aging, together with a good-quality, well-integrated, social protection system, will help governments cope with both existing and new risks and challenges.

**REFERENCES**


Pension Reforms in Japan: Options for Fiscal Sustainability

KENICHIRO KASHIWASE, MASAKI NOZAKI, AND KIICHI TOKUOKA

INTRODUCTION

Japan is taking the global lead in population aging. Life expectancy at birth in the country has increased to 83 years, which is the highest in the world. The postwar baby boom generation started retiring in 2007, meaning that the elderly population will continue to increase disproportionately in coming years. In addition, the fertility rate declined markedly during the past decades. As a result, Japan’s old-age dependency ratio is the highest in the world and is expected to rise from 38 percent in 2010 to 57 percent in 2030 (Figure 10.1).

Rising age-related public spending poses significant challenges for Japan. It makes fiscal consolidation—essential to reduce the country’s alarmingly high public debt burden—even more arduous. Social security reform, in particular for pensions, is critical for fiscal consolidation, but any reform should also preserve intragenerational equity, avoid worsening intergenerational inequity, and be growth friendly. Against this background, this chapter analyzes the impact of various pension reform options on fiscal consolidation, equity, and economic growth.

The chapter finds that the most attractive option is to increase the pension eligibility age in light of high and rising life expectancy in Japan. Such an increase would have a positive effect on economic growth in the long run by helping to raise labor force participation, and would be relatively fair in allocating the burden of fiscal adjustment between younger and older generations. Attractive options can also be put in place that promote intra- and intergenerational equity, including better targeting by clawing back a small portion of pension benefits from wealthy retirees, reducing preferential tax treatment of pension incomes, and collecting contributions from dependent spouses of employees eligible for the Employees’ Pension Insurance (EPI) program. These options, if implemented concurrently, could reduce the government’s annual pensions subsidy by up to 1¼ percent of GDP by 2020. Across-the-board cuts in the income replacement rate and higher pension contributions are less desirable options. Cuts in the replacement rate would undermine the pension’s

1The Republic of Korea is the only country in which population aging is advancing more rapidly than in Japan.
role in alleviating old-age poverty, while higher contributions would discourage labor market participation and aggravate already large intergenerational imbalances.

This chapter is organized as follows: The next section describes the current public pension system and is followed by a section that discusses challenges to this system and reviews recent reform efforts. The subsequent section identifies reform options along with estimated fiscal savings and discusses the effect on economic growth as well as intra- and intergenerational equity.

**DESCRIPTION OF THE PENSION SYSTEM**

Japan has a universal, defined-benefit public pension system. Pension benefit spending was equivalent to 10.6 percent of GDP in 2010, consisting of old-age pensions (8.9 percent of GDP), disability pensions (0.4 percent of GDP), and survivor pensions (1.3 percent of GDP). The system’s main characteristics are shown in Figure 10.2.

**Participants.** All residents ages 20 or older are obliged to participate in the system and are grouped into three categories. Category 1 participants are the self-employed and their spouses, and are covered by the National Pension (NP) program. Category 2 participants are employees of private sector enterprises and central and local

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2This refers to fiscal year 2010, which began in April 2010 and ended in March 2011.

3In 2007, it became clear that the government had lost track of some pension contribution records, which led to a loss of public confidence in the public pension system. Partly reflecting this, participation in the NP has been on a declining trend and fell from 64 percent in fiscal 2007 to 60 percent in fiscal 2010.
There is also an MAA for teachers in private schools. In mid-2013, 1 U.S. dollar was approximately equal to 100 Japanese yen. Those who have paid contributions for 25 years or more and have reached age 65 are eligible for basic old-age pension benefits. The benefit depends on the number of years during which contributions were paid.

Governments, with private sector employees covered by the EPI program and government employees by the Mutual Aid Association (MAA) programs. Category 3 participants are dependent spouses of Category 2 participants.

**Contributions.** Category 1 participants pay flat rate contributions, while Category 2 participants contribute by paying payroll taxes (the payment is equally shared between employee and employer). The contribution rates are being raised through 2017 to ¥16,900 per month in 2004 prices (the rate was ¥15,020 per month in 2011) for Category 1 participants and to 18.3 percent of gross earnings (from 16.4 percent in 2011) for Category 2 participants, and will remain at these levels thereafter. Category 3 participants are not obliged to contribute. Total pension contributions from households and employers reached the equivalent of 6.5 percent of GDP in fiscal 2010.

**Basic pension.** All participants are eligible to receive a flat-rate basic pension benefit. This pension plays a substantial redistributive role by enabling a higher income replacement rate for poor retirees than for rich ones. The central government provides a subsidy to finance half of the basic pension benefit payment. The rest is paid by pension contributions collected by the program to which

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4There is also an MAA for teachers in private schools.

5In mid-2013, 1 U.S. dollar was approximately equal to 100 Japanese yen.

6Those who have paid contributions for 25 years or more and have reached age 65 are eligible for basic old-age pension benefits. The benefit depends on the number of years during which contributions were paid.
The earnings-linked benefit is calculated using an individual’s lifetime average earnings and an accrual rate. The accrual rate for those who were born after April 1946 is 0.5481 percent per month. Participants belong and by a drawdown from a reserve fund if contributions are temporarily insufficient to cover the payment.

**Earnings-linked pension.** Category 2 participants (in the EPI and the MAAs) receive earnings-linked benefits in addition to the basic pension benefit. Category 1 and Category 3 participants are not eligible for this benefit. The payment is fully financed by contributions paid by Category 2 participants and by a drawdown from reserve funds, if necessary.

### FUTURE CHALLENGES AND PAST REFORMS

Containing age-related spending, including pension benefits, is a key fiscal policy challenge in Japan. Age-related spending (mostly pension, medical, and elderly care spending) has been rising steadily and now accounts for nearly 55 percent of the total non-interest spending by the general government, reflecting the country’s rapid population aging (Figure 10.3). Although the increase in this spending will be moderate compared with other advanced countries (IMF, 2011; Clements, Coady, and Gupta, 2012), Japan needs to reduce both its fiscal deficit (10 percent of GDP in 2012) and debt (240 percent of GDP in 2012), which calls for rationalizing social security.

At the same time, social security reform should be designed to promote intragenerational and intergenerational equity and economic growth. To promote intragenerational equity, basic pensions help reduce old-age poverty in Japan, and are supported by

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7The earnings-linked benefit is calculated using an individual’s lifetime average earnings and an accrual rate. The accrual rate for those who were born after April 1946 is 0.5481 percent per month.
The share of nonregular employees (such as part-time workers and contractual workers) in total salaried employees increased from about one-fifth in the early 1990s to one-third in 2012. For women, non-regular employees now comprise more than half of total employees. Many nonregular employees are not eligible to participate in the EPI. Moreover, about 5 percent of nonregular employees do not participate in the public pension system, while nonparticipation of regular employees was only 0.8 percent.

In addition, the 2004 reform increased the ratio of the government subsidy to the basic pension benefit from one-third to one-half. Consequently, the subsidy increased from 1½ percent of GDP in 2008 to 2 percent of GDP in 2009 and is expected to remain about 2–2½ percent of GDP in the medium and long terms. Although this helped put Japan’s pension system on sustainable footing, it has added to the spending pressure on the government.

An important step in coping with these challenges was Japan’s substantial pension system reform that took effect in 2004. The reform introduced an automatic adjustment of benefit levels based on changes in demographic structures—so-called macro indexing—although it has not been activated yet (Appendix 10A). As a result, aggregate pension benefit expenditures and contributions from households and employers will not increase as a percentage of GDP in the long term, despite rapid population aging (Figure 10.4).  

Figure 10.4  Japan: National Pension and Employees’ Pension Insurance, Spending, and Contributions, 2010–2100 (Percent of GDP)

![Figure 10.4](https://example.com/figure10.4.png)

Sources: Official 2009 actuarial report; and IMF staff estimates.

Note: EPI = Employees’ Pension Insurance; NP = National Pension.

8The share of nonregular employees (such as part-time workers and contractual workers) in total salaried employees increased from about one-fifth in the early 1990s to one-third in 2012. For women, nonregular employees now comprise more than half of total employees. Many nonregular employees are not eligible to participate in the EPI. Moreover, about 5 percent of nonregular employees do not participate in the public pension system, while nonparticipation of regular employees was only 0.8 percent.

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Reform measures recently proposed by the government address intragenerational equity issues, but are unlikely to generate fiscal savings. In line with the tax and social security reform plan adopted in February 2012, parliament in August 2012 approved laws to broaden eligibility to receive basic pension benefits by reducing the minimum number of years for which contributions need to be paid (to 10 years from 25 years); extending the coverage of the EPI to part-time workers; and integrating the EPI and the MAAs. On a net basis, these measures are not expected to reduce the fiscal burden. A bill to eliminate the past ad hoc nominal freeze of pension benefits by 2015 (the elimination is a precondition of macro indexing) was also approved by parliament in November 2012.

REFORM OPTIONS

In broad terms, three reform measures are available to improve pension finances: increasing the pension eligibility age, reducing the pension replacement rate, or increasing contributions. There are trade-offs across these measures; for example, a higher retirement eligibility age can be combined with lower contributions without negatively affecting pension finances. These options, however, differ in their impacts on economic growth (see Appendix 10B) and intergenerational imbalances (Karam and others, 2010; Tokuoka, 2012; Kashiwase and Rizza, forthcoming).

Specific reform options and estimates of their potential fiscal savings are presented in Table 10.1. These potential fiscal savings would reduce the government subsidy to the basic pension. As discussed in detail later in this chapter, the most attractive option is to increase the pension eligibility age in light of the high and rising life expectancy in Japan. This would have a positive effect on economic growth in the long term by helping to raise labor force participation and would relatively fairly allocate the burden of fiscal adjustment between younger and older generations. Other attractive options from an equity-promoting standpoint include better targeting by clawing back a small portion of pension benefits from wealthy retirees, reducing preferential tax treatment of pension benefit incomes, and collecting contributions from dependent spouses of EPI-eligible employees. These options, if implemented concurrently, could reduce the government’s annual subsidy by up to 1¼ percent of GDP by 2020.

Although the focus of this chapter is how to reduce the government subsidy, fiscal savings from pension reforms could also be used, for example, to reduce pension contributions (payroll taxes), which could improve incentives to work. Reform of the earnings-linked pension would not reduce the government subsidy because the

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10See Appendix 10C for data and methodologies.
benefit is fully financed by contributions, but it would complement reform of the basic pension, including by reducing the pension contribution rate, and could reduce the burden for employers and employees, thereby stimulating economic activity.

**Raise Pension Eligibility Age**

The pension eligibility age is being raised to 65. The pace of the increase differs between the basic pension and the earnings-linked pension, by program (the NP or the EPI), and by gender. The eligibility age for the basic pension is currently 65 for NP participants and male EPI participants (and by 2018 for female EPI participants). For the earnings-linked pension, the eligibility age is currently 60, and will be raised gradually to 65 for men during 2013–2025 (and for women during 2018–2030).

A higher eligibility age for the basic pension would generate substantial fiscal savings. An increase to age 67 for all categories of participants by 2020 would reduce the government subsidy to the basic pension by ¼ percent of GDP by then (compared with the base case projection included in the 2009 actuarial review). If it were raised further to 69 by 2030, the fiscal savings could reach ¾ percent of GDP in 2030. Taking account of rising life expectancy, there is scope to increase the eligibility age. Life expectancy at birth is projected to increase from 85.2 years to 89.4 years for women (from 78.3 years to 82.4 years for men) during 2000–30. For participants in the NP, life expectancy at pension eligibility age is expected to increase by four years during this period, if the eligibility age remains constant at 65 (Figure 10.5). For participants in the EPI, life expectancy at pension eligibility age will decline reflecting the gradual rise in the pension eligibility age, but from a much higher base in 2010 compared with the NP. Moreover, elderly Japanese are expected to remain healthy and are less likely to be disabled, which would allow them the choice of working longer. Sanderson and Scherbov (2010) showed that the ratio of adults with disability to those without disability in Japan is projected to rise only marginally, to 13 percent by 2050 from 10 percent in 2005–10, despite the sharp rise in the old-age dependency ratio during this period.\footnote{Life expectancy across regions differs somewhat: in 2010, among 47 prefectures, the highest was 80.9 years (Nagano) and the lowest was 77.3 (Aomori).}

### TABLE 10.1

<table>
<thead>
<tr>
<th>Option</th>
<th>Annual Savings in 2020 (percent of GDP)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raise basic pension eligibility age to 67</td>
<td>¼</td>
</tr>
<tr>
<td>Reduce benefits for wealthy retirees</td>
<td>¼</td>
</tr>
<tr>
<td>Eliminate preferential tax treatment for pension benefit income</td>
<td>¼–½</td>
</tr>
<tr>
<td>Collect contributions from dependent spouses</td>
<td>¼–½</td>
</tr>
<tr>
<td>Reduce replacement rate across the board by 3 percentage points</td>
<td>½</td>
</tr>
<tr>
<td>Raise contribution (payroll tax) rate by 1 percentage point</td>
<td>½</td>
</tr>
<tr>
<td>Reduce contribution (payroll tax) rate by 1 percentage point</td>
<td>−½</td>
</tr>
</tbody>
</table>

Source: IMF staff estimates.

\footnote{Life expectancy across regions differs somewhat: in 2010, among 47 prefectures, the highest was 80.9 years (Nagano) and the lowest was 77.3 (Aomori).}
The pension eligibility age is defined here as the age at which people can first draw full benefits, that is, without actuarial reduction for early retirement (OECD, 2011).

During 2010–30, Australia will raise the pension eligibility age from 63.5 to 66, Denmark from 65 to 67, the United Kingdom from 62.5 to 66, and the United States from 66 to 67. Austria, the Czech Republic, France, Greece, Hungary, Italy, Korea, the Slovak Republic, and Switzerland will also increase their retirement ages. Iceland and Norway expect to keep the retirement age at 67.

The gap between life expectancy and pension eligibility age is larger in Japan than in most other countries. As shown in the top two panels of Figure 10.6, three Organization for Economic Cooperation and Development (OECD) countries (Iceland, Norway, and the United States) had higher pension eligibility ages than Japan in 2010. By 2030, three other countries (Australia, Denmark, and the United Kingdom) will set their eligibility ages above 65. As other OECD countries also raise the eligibility age in line with longer life expectancy, the average pension eligibility age in those countries is expected to increase from 63.1 in 2010 to 64.3 in 2030. Although Japan continues to have the highest life expectancy in the world, the pension eligibility age remains capped at 65.

Raising the pension eligibility age would also have a positive effect on economic growth and could be fairer from an intergenerational resource perspective. It would promote continued labor force participation of older workers and raise consumption through improved lifetime earnings (Appendix 10B). Unlike raising the contribution rate, the burden would be more equally shared between younger and older generations (Tokuoka, 2012). Although a higher pension eligibility age for the earnings-linked pension would not reduce the government subsidy, it would bolster long-term economic growth (by encouraging labor market participation), lessen intergenerational imbalances, and complement the planned reform of the

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During 2010–30, Australia will raise the pension eligibility age from 63.5 to 66, Denmark from 65 to 67, the United Kingdom from 62.5 to 66, and the United States from 66 to 67. Austria, the Czech Republic, France, Greece, Hungary, Italy, Korea, the Slovak Republic, and Switzerland will also increase their retirement ages. Iceland and Norway expect to keep the retirement age at 67.
The government plans to reform the pension system into a simpler two-tier system: a noncontributory flat-rate pension and an earnings-linked pension with a payroll tax rate of 15 percent. The latter has features of a notional defined-contribution system (such as the one adopted in Sweden); that is, contributions are accumulated in an individual account with a notional rate of return and the pension benefit is calculated by dividing the pension wealth by remaining life expectancy at retirement. This would make the choice of retirement age actuarially fair because it does not penalize late retirement. The risk of higher longevity would also be transferred from younger generations to retirees, helping alleviate intergenerational imbalances.

It would also allow for a reduction in the contribution rate, thereby lowering labor costs and increasing household disposable income.

An increase in the pension eligibility age should be accompanied by an expansion of the safety net to prevent an undue burden on those with disabilities. Total spending for disability pension benefits amounted to 0.4 percent of GDP in Japan, which is low compared with other advanced countries (Momose, 2008). Disabled retirees will become vulnerable as macro indexing reduces disability pension benefits in the future. In the United States, about one-fourth of all workers in their

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sixties may find work difficult on account of disabilities or poor health (Munnell, Soto, and Golub-Sass, 2008). Although Japanese older than age 65 are relatively healthy and less likely to be disabled (as noted earlier), they should be protected by a well-designed disability pension and social assistance programs to ensure that an increase in the pension eligibility age does not raise old-age poverty.

**Lower Replacement Rate**

A lowering of the pension replacement rate is already planned under macro indexing. The rate is officially defined as the pension benefit for a representative couple divided by the average wage of the working-age population. The representative couple comprises a private sector employee covered by the EPI and a spouse who does not work. The 2009 actuarial survey projects that the replacement rate is set to decline to 57 percent by 2020 and to 50 percent by 2038.

Although cutting the replacement rate further, beyond macro indexing adjustments, could reduce the government subsidy to the basic pension, doing so could worsen old-age poverty. This effect is especially probable given the limited role of private or voluntary pension schemes in Japan.\(^\text{15}\) An across-the-board reduction in the replacement rate of 3 percentage points would reduce the government subsidy by ½ percent of GDP by 2020. This option could have a positive effect on economic growth similar to the higher pension eligibility age (Appendix 10B), and would help correct intergenerational resource imbalances by placing a larger fiscal burden on older generations than on younger ones. However, with the current level of the basic pension benefit (¥66,000 per month) barely covering basic consumption needs (food, housing, and utilities) of a retiree, an across-the-board cut would undermine the pension system’s ability to contain old-age poverty (see Appendix 10D). Moreover, the fiscal savings would be offset by higher demand for social assistance spending.\(^\text{16}\)

International comparisons also suggest that Japan’s pension benefits, on average, are on the low side. The replacement rate for a representative couple, of about 50 percent, is below the median and mean for OECD countries (Figure 10.7). More broadly, gross pension wealth measures the value of retirement incomes over a lifetime (OECD, 2011). This indicator takes account of life expectancy, the pension eligibility age, the replacement rate, and the way in which retirement benefits are indexed. Japan’s gross pension wealth is also low compared with other OECD countries.

A more targeted reduction in the replacement rate, therefore, would be appropriate from an equity standpoint, as opposed to across-the-board benefit cuts. In

\(^{15}\) The government offers Category 1 participants access to a voluntary pension scheme, but only 3 percent of them participate. More generally, participation in private pension plans declined during the past decade; a survey showed 23 percent of households participated in them in 2012, down from 29 percent in 2000. Also, contributions to private pension plans per household declined by 25 percent during this period.

\(^{16}\) The social assistance system pays the difference between the guaranteed minimum income and own-source incomes of the poor. The minimum income level for individuals is determined by area and age, and ranges from ¥63,000 per month to ¥81,000 per month for an individual who is 65 years old.
Figure 10.7  Pension Benefit Income Replacement Rates for Single-Earner Couples (Percent)

<table>
<thead>
<tr>
<th>Country</th>
<th>Median</th>
<th>Mean</th>
<th>Greece</th>
<th>Spain</th>
<th>Austria</th>
<th>Finland</th>
<th>Italy</th>
<th>UK</th>
<th>United States</th>
<th>Japan</th>
<th>Belgium</th>
<th>Canada</th>
<th>Portugal</th>
<th>France</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>55.0</td>
<td>61.3</td>
<td>43.0</td>
<td>57.3</td>
<td>61.3</td>
<td>61.3</td>
<td>67.9</td>
<td>55</td>
<td>61</td>
<td>52.1</td>
<td>52.1</td>
<td>53.9</td>
<td>56.3</td>
<td>57.3</td>
</tr>
</tbody>
</table>


1Countries with public defined-benefit or notional defined-contribution pensions. From OECD pension models based on 2006 parameters and rules. Replacement rates for a worker who enters the system today and retires after a full career.

In Canada, a clawback of 15 percent is applied to retirees with annual incomes equivalent to US$70,000 or more.

At the individual level, the clawback amount under this scheme will be less than the government subsidy (except for the richest 0.2 percent of retirees, for whom the clawback amount would exceed the government subsidy).

the current pension system, the government subsidy finances half of the basic pension benefit payments, regardless of the income level of retirees. Alternatively, the subsidy could be targeted toward poorer retirees and reduced for wealthier retirees by introducing a clawback, similar to that adopted in Canada. For example, a 10 percent clawback of the pension benefit for the wealthiest 10 percent of retirees (those with annual pension benefits equivalent to ¥2.5 million or more per person) would reduce the government subsidy by ¼ percent of GDP in 2020.17 In reality, a clawback could be applied more broadly, for example, to the wealthiest one-fourth of retirees, which would either generate larger fiscal savings or allow for higher average benefits than currently planned for lower-income retirees.

Raise Contribution Rates

A higher contribution rate would generate fiscal savings. In 2017, Japan’s pension contribution rate (for the EPI, levied on payroll) will be close to the average of advanced countries (Figure 10.8). Raising the contribution rate for the basic pension by 1 percentage point would increase contributions by ½ percent of GDP in 2020, which could be used to reduce the government subsidy to the basic pension.

17In Canada, a clawback of 15 percent is applied to retirees with annual incomes equivalent to US$70,000 or more.
Some euro area countries are considering a revenue-neutral shift from social contributions toward a VAT to improve export competitiveness. Such a reform has been known as “fiscal devaluation.” In Japan, pension contributions (and investment returns on the reserve fund) are tax exempt, and pension benefit incomes above a threshold are added to taxable incomes. This option, however, would have a detrimental effect on growth and aggravate intergenerational imbalances. Empirical studies find that a higher pension contribution rate has a negative effect on labor supply (see Appendix 10B). A higher contribution rate also increases the burden on younger generations disproportionately because pension contributions are paid by the working-age population.

**Reduce Preferential Treatment**

Eliminating the preferential tax treatment of pension income would also generate sizable fiscal savings and promote intragenerational equity. At present, a substantial part of the public pension benefit (basic and earnings-linked combined) is deducted from taxable income when calculating personal income tax liability. For those ages 65 or older, public pension income is fully exempt from tax up to ¥1.2 million per year. As a result, even for the wealthiest 2 percent of retirees, 40 percent of pension income is exempt from income tax. On an aggregate level, about three-fourths of pension income is exempt from taxable income. Eliminating this preferential treatment or tax expenditure would reduce the government subsidy by an estimated $\frac{1}{4}$–$\frac{1}{3}$ percent of GDP. Some other countries, such as France and New Zealand, do not exempt pension income from taxable income (OECD, 2011).

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18 Some euro area countries are considering a revenue-neutral shift from social contributions toward a VAT to improve export competitiveness. Such a reform has been known as “fiscal devaluation.”

19 In Japan, pension contributions (and investment returns on the reserve fund) are tax exempt, and pension benefit incomes above a threshold are added to taxable incomes.
Collecting pension contributions from dependent spouses could also contribute to fiscal savings while ensuring equal treatment of beneficiaries. Under the current system, dependent spouses of employees covered by the EPI (Category 3 participants) receive basic pension benefits even though they do not pay contributions. They comprise 15 percent of the total working-age participants in the public pension system. Because benefits for Category 3 participants are paid out of contributions from both single and married employees, they are effectively cross-subsidized by single employees. This preferential treatment also creates a disincentive to work because a spouse can be qualified as a Category 3 participant only if his or her annual earnings are lower than ¥1.3 million. The government subsidy would be reduced by ¼–½ percent of GDP in 2020 if all Category 3 participants contributed to the NP.

CONCLUSION

This chapter analyzes various reform options for Japan’s public pension system, reviewing the size of fiscal savings and the impact on intra- and intergenerational equity and economic growth. The most attractive option would be to increase the pension eligibility age in light of high and rising life expectancy in Japan. Raising the eligibility age would have a positive effect on economic growth in the long term by helping to raise labor force participation and would be relatively fair in allocating the burden of fiscal adjustment between younger and older generations. An increase in the eligibility age should be accompanied by an expansion of the safety net, to avoid undue hardship for those with disabilities. Other attractive options that would promote intragenerational equity include better targeting by clawing back a portion of pension benefits from wealthy retirees, reducing preferential tax treatment of pension benefit income, and collecting contributions from dependent spouses of EPI-eligible employees. These options, if implemented concurrently, could reduce the annual government subsidy by up to 1¼ percent of GDP by 2020. Across-the-board cuts in the replacement rate and higher pension contributions are less desirable options. Cuts in the replacement rate would undermine the pension’s role in alleviating old-age poverty, while higher contributions would discourage labor market participation and aggravate already large intergenerational imbalances.
APPENDIX 10A. HOW DOES MACRO INDEXING WORK?

This appendix explains the macro indexing of pension benefits introduced in 2004 in a simplified framework. To maintain the sustainability of pension finances, macro indexing will cut benefit levels automatically in accordance with population aging, while contribution rates are moderately increased to reach a constant level in 2017. The reform was a major shift from pension reforms before 2004, which had not resorted to benefit cuts.

The pension system’s financial balance $B$ at time $t$ equals

$$B(t) = c \times W(t) \times L(t) - P(t) \times N(t), \quad (10A.1)$$

in which $c$ is the pension contribution rate, $W(t)$ is the average wage earned by the working age population, $L(t)$ is the number of participants of working age, $P(t)$ is the pension benefit per person, and $N(t)$ is the number of retirees. The reserve fund outstanding, $R(t)$, increases by the rate of return $i(t)$ and the financial balance:

$$R(t) = B(t) + (1 + i(t)) \times R(t-1). \quad (10A.2)$$

Macro indexing adjusts pension benefits $P$ downward in line with changes in the number of working-age participants and life expectancy, until period $t^*$:

$$\Delta P(t) = \begin{cases} \Delta W(t) + \Delta L(t) - \mu & \text{for } t \leq t^*, \\ \Delta W(t) & \text{for } t > t^*, \end{cases} \quad (10A.3)$$

in which $\Delta$ indicates a growth rate, for example, $\Delta W(t) = (W(t) - W(t-1)) / W(t-1)$. The variable $\mu$ is an estimated rate of increase in life expectancy, which is fixed at 0.3 percent. With $\Delta L(t)$ expected to be negative owing to a decline in the working-age population, the adjustment improves the financial balance. The end period of adjustment, $t^*$, is determined such that pension finances achieve sustainability (i.e., the reserve fund outstanding is sufficient to cover benefit payments 100 years from now). That is,

$$R(t + 99) \geq P(t + 100) \times N(t + 100). \quad (10A.4)$$

The replacement rate, $P(t) / W(t)$, will decline until $t^*$, and remain constant thereafter.

The 2009 actuarial review projects that the macro index adjustment will continue until 2038. The replacement rate (for a representative single-earner couple) is projected to decline from 62 percent in 2009 to 50 percent in 2038, and remain constant thereafter.

The adjustments are restricted in several cases. First, the replacement rate should not decline below 50 percent. If such an event is envisaged to occur in the next five years, a system overhaul is called for. Second, macro indexing is
suspended during periods of deflation. More precisely, benefit levels will never decline over time in nominal terms because the benefit adjustment is calculated as follows:

$$\Delta P(t) = \max(\Delta W(t) + \Delta L(t) - \mu, 0), t \leq t^*.$$  

(10A.5)

Third, macro indexing has not started yet, although the 2009 actuarial review presumed it would begin in 2012. Ad hoc suspension of price indexation during deflation early in the first decade of the 2000s raised the pension benefit from the level resulting from the original indexation rule. Elimination of this discrepancy is the precondition for macro indexing to begin.
APPENDIX 10B. GROWTH IMPACT OF PENSION REFORM OPTIONS

Containing pension benefits could have a positive impact on output:

- **Raising the pension eligibility age.** From a theoretical standpoint, using the IMF’s Global Integrated Monetary and Fiscal (GIMF) model, Karam and others (2010) show that raising the pension eligibility age could boost the level of U.S. GDP by 3 percent in the long term by encouraging longer working lives. With a longer working period, households increase consumption because their lifetime incomes are higher. Similarly, using an overlapping generations model with an explicit life cycle, Cournède and Gonand (2006) report that, in Europe, fiscal consolidation involving raising the pension eligibility age would boost labor supply and would be more growth friendly than tax-based fiscal consolidation. The point that fiscal consolidation involving a higher pension eligibility age could be less costly is confirmed by running a lifecycle overlapping generations model for Japan (see Figure 10B.1).21

  Empirical findings are consistent with these theoretical observations. Internationally, labor force participation is positively correlated with pension eligibility age (e.g., see Gruber and Wise, 1998, 1999, 2002).

- **Reducing the pension replacement rate.** Qualitatively, reducing the pension replacement rate would have a positive impact on output similar to raising the pension eligibility age. The GIMF simulation by Karam and others (2010) shows that reducing the pension replacement rate would also boost output in the long term, although the positive impact would be less because in their setup, the incentive for increasing labor supply is weaker.22

  International empirical evidence shows that labor force participation is strongly and negatively correlated with the generosity of pension benefits, which is determined by the pension replacement rate and the pension eligibility age. This outcome may occur because the generosity of pension benefits functions as an implicit tax on work (Gruber and Wise, 1998).

Raising the pension contribution rate would have a detrimental effect on output. Theory shows that higher pension contribution rates have both substitution and income effects because pension contributions are proportional to earnings, as with personal income tax. Although these effects have opposite impacts

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20 The GIMF is also an overlapping generations model, but it makes stylized assumptions about the life cycle (for example, a constant rate of decline in productivity over the life cycle, a constant probability of death). An overlapping generations model with an explicit life cycle (for example, with a hump-shaped wage profile) could produce results of a different magnitude.

21 For details about simulation assumptions, see Tokuoka (2012).

22 This partly reflects the assumption in the model that the size of the labor force (length of work life) is exogenously determined. In a model in which the size of the labor force is endogenously determined by the level of pension benefits, a reduction in pension benefits could have a larger positive impact on labor supply.
on labor supply, simulation analysis typically concludes that the substitution effect is dominant, and a higher contribution rate reduces labor supply and thus output (see Figure 10B.1 and Karam and others, 2010).

**Figure 10B.1** Reform Measures and Output

Overlapping generations simulation results:

- GDP level deviation
  - (Relative to raising value-added tax revenue by 0.5 percent of GDP)

- Investment rate deviation
  - (Relative to raising value-added tax revenue by 0.5 percent of GDP)

Source: Authors’ calculations.

1For all options, fiscal savings that improve the structural primary balance by 0.5 percent of GDP are assumed.

2Investment rate = (GDP—consumption—tax payments—social security contributions)/GDP.

**Figure 10B.2** Organization for Economic Cooperation and Development Economies: Growth versus Social Security Contributions Plus Employees’ Income Taxes

Sources: Organization for Economic Cooperation and Development; and IMF World Economic Outlook database.
Data also show that growth is negatively correlated with the burden from social security contributions and personal income tax (Figure 10B.2). More formally, Arnold (2008) reports cross-country regression results that indicate that a higher personal income tax, the impact of which on output is similar to that of higher social security contributions, reduces GDP growth (for a comprehensive literature review, see OECD, 2010).
APPENDIX 10C. METHODOLOGIES FOR CALCULATING FISCAL SAVINGS FROM REFORM OPTIONS

Raise Basic Pension Eligibility Age To 67

Savings are calculated by multiplying the projected number of pension benefit recipients ages 65–66 and the level of basic pension benefits in 2020. The number of recipients is estimated by the official population projection by gender. The ratio of age 65–66 population to age 65 and older would be 9.5 percent for male and 7.7 percent for female in 2020. The level of basic pension benefits in 2020 reflects macro indexing as envisaged in the official 2009 actuarial report. If the eligibility age for the basic pension becomes 67 for all recipients (i.e., Categories 1–3 and both male and female) by 2020, aggregate basic pension spending would be reduced by ¼ percent of GDP, compared with the status quo of the current schedule of eligibility age increases. The calculation also takes account of early retirement.

Reduce Benefits for Wealthy Retirees (Clawback)

Data on the distribution of old-age pension benefits are available for the NP and the EPI. They indicate that the wealthiest 10 percent of retirees (i.e., those who receive a large amount of pension benefits) received about 25 percent of aggregate old-age pension benefits in 2010 (the basic and the earnings-linked pension benefits combined). If 10 percent of benefits are reduced, or clawed back, for such retirees, aggregate old-age pension benefits would be reduced by 3.1 percent or by ¥1.1 trillion (US$11 billion, ¼ percent of GDP). For 99.8 percent of retirees, monthly pension benefits were less than ¥300,000 (US$3,000) in 2010; thus, the benefit clawback would be less than ¥30,000 on an individual basis (i.e., less than 50 percent of the basic pension benefit). If an aggregate clawback rate of 3.1 percent is applied to aggregate old-age pension benefits in 2020, pension benefit spending would be reduced by ¼ percent of GDP.

Eliminate Preferential Tax Treatment for Pension Benefit Income

Data on the distribution of old-age pension benefits are available for the NP and the EPI. Using these data, income taxes collected from pension benefit recipients are estimated for 2010, assuming that pension income is their only source of income. Based on the current schedule of income tax rates, elimination of preferential tax treatment of pension benefits would have increased tax collections by

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¥1.4 trillion, 0.3 percent of GDP). The calculation incorporates the basic deduction of ¥380,000 from annual taxable incomes (applied to all income tax payers), but does not take account of deductions for spouses because data for the marital status of retirees are not available.

**Collect Contributions from Dependent Spouses**

According to the official 2009 actuarial report, the monthly contribution rate for the NP would be ¥19,728 in 2020 (in 2020 prices), and the number of Category 3 participants would be 8.9 million. Thus, if all Category 3 participants contribute, contributions will increase by ¥2.1 trillion or 0.4 percent of GDP).

**Reduce Replacement Rate across the Board by 3 Percentage Points**

According to the official 2009 actuarial report, the average monthly wage in 2020 is expected to be ¥459,000. To reduce the replacement rate by 3 percentage points, monthly basic pension benefits for a retiree and a spouse need to be reduced by ¥13,770, or ¥6,885 per individual. If this reduction is applied to all retirees, excluding those who receive basic pension benefits of less than ¥6,885, aggregate basic pension spending would be reduced by ¥2.7 trillion, ½ percent of GDP).

**Raise Contribution (Payroll Tax) Rate by 1 Percentage Point**

According to the official 2009 actuarial report, EPI participants’ annual wages will total ¥201 trillion in 2020. Therefore, a 1 percentage point increase in the contribution (payroll tax) rate would raise contributions by ¥2 trillion. This translates into a monthly contribution increase per person of ¥4,322 (¥2 trillion divided by Category 2 participants in the EPI and Category 3 participants). If the higher contribution rate of ¥4,322 is applied to Category 1 participants and Category 2 participants in the MAAs, contributions will increase by ¥0.8 trillion. Thus, the total increase would amount to ¥2.8 trillion, ½ percent of GDP).
APPENDIX 10D. OLD-AGE POVERTY IN JAPAN AND THE ROLE OF THE STATE

Despite the low income replacement rate, Japan’s pension reforms have helped reduce the relative poverty rate among elderly persons. When the poverty rate is measured based on a threshold (50 percent) of median household income, Japan’s old-age poverty rate has been about 20 percent in recent years, which is high compared with other OECD countries (OECD, 2011). In the absence of the old-age pension, however, this rate would increase threefold (Abe, 2011). Pension benefits alleviate relative poverty among the elderly and help maintain their consumption levels during retirement. When relative poverty is measured by consumption expenditure, which is financed partly by assets, instead of household income, the rate falls to less than 15 percent and has come down quite significantly since the 1980s (Ohtake, 2005). Because past pension reforms often set benefit levels at a sufficient standard of living, Japan’s public pension system helps attain a more equitable consumption level (Shikata, 2010; Yamada, 2010).

The relative poverty rate among the elderly is disproportionately high for women. Across different household types, elderly people who live alone face a particularly high poverty rate, followed by the household of a retiree who lives with his or her daughter (Abe, 2011). Because Japan’s typical household structure is expected to change, and women typically live longer than men, future pension reforms may need to be supplemented by a safety net program targeted to those who are vulnerable.

More analysis of the distribution of income and wealth data would be necessary to develop a well-designed safety net program. For example, if a household with a large amount of assets invests the majority of its assets in bank deposits, its income could be low in the current low interest rate environment but such a household can still enjoy a high level of consumption. Therefore, cash transfers solely based on income levels might provide financial support to wealthy households. Identifying those really in need would require information not only on income but also on assets.

REFERENCES


25Unlike the absolute poverty rate, which measures the share of the population below the minimum standard of living, the measure of relative poverty draws an inference about underlying income inequality.

26A family of parents with adult children living together in a given household has been the norm in Japan for decades, and accounted for 30–42 percent of all households during 1980–2005. Based on the most recent projection by the National Institute of Population and Social Security Research (2008), single-person households are expected to become the largest share among all household types, reaching 37.4 percent in 2030 from 29.5 percent in 2009. With population aging, most of this increase comes from single-person households consisting of those 65 years of age or older.


Providing Adequate Old-Age Pensions in the Republic of Korea

Seong Sook Kim

INTRODUCTION

Since its introduction in the 1960s, the Korean public pension system has grown rapidly. This growth has paralleled the country’s economic growth during that period. However, the framework was developed in a very short period and the system still needs to tackle various challenges. One of the most urgent issues is the expansion of coverage in each of the pillars of the system. Although the national pension provides comprehensive coverage by law, its application excludes a number of vulnerable groups.

Korea’s public pension systems have faced difficult challenges as they attempt to expand coverage and alleviate poverty among current and future elderly populations, while at the same time ensuring their own long-term solvency. With limited resources, resolving the conflicting challenges is extremely difficult. A broad social consensus is necessary to push ahead successfully with these tasks.

This chapter examines the evolution of the national pension system in Korea and evaluates possible options for additional reform.

DESCRIPTION OF THE PUBLIC PENSION SYSTEMS IN KOREA

Current Structure

Korea has a multipillar income security system (Table 11.1). The national pension system is by far the largest pillar, covering 19.9 million people as of December 2011, while the public occupational pension systems (for civil servants, private school teachers, and military personnel) cover 1.4 million people. The number of people affiliated with private pension systems (retirement and individual pensions) is still quite small. Meanwhile, the basic old-age pension, which is a means-tested benefit, covers 70 percent of the elderly. The so-called national basic livelihood security system is a safety net and social assistance program. It was transformed in 2001 from a livelihood care system dating back to 1960 to a top-up benefit program.
TABLE 11.1
Overview of Income Security Systems in Korea (December 2011)

<table>
<thead>
<tr>
<th>Covered Groups</th>
<th>Employees</th>
<th>Self-employed</th>
<th>Others</th>
<th>Civil servants, private school teachers, and military personnel</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 pillar</td>
<td>Basic old-age pension (70 percent of persons ages 65 and older, 3.8 million beneficiaries)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>National basic livelihood security (1.5 million beneficiaries)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Enacted 2007, Enforcement 2008</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1st pillar</td>
<td>National pension (19.89 million insured persons)</td>
<td></td>
<td></td>
<td>Public occupational pensions (1.4 million insured persons)</td>
</tr>
<tr>
<td></td>
<td>Enacted 1986, Enforcement 1988</td>
<td></td>
<td></td>
<td>Introduced 1960</td>
</tr>
<tr>
<td>2nd pillar</td>
<td>Retirement pension (3.3 million insured persons)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Introduced 2005</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3rd pillar</td>
<td>Individual pension (1.6 million insured persons, December 2009)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Introduced 1994</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Historical Developments

Trends in coverage and membership

The national pension and private pension systems were all introduced within the past 20 years, and they competed for new members. However, with the advent of substantial increases in longevity and a growing understanding of the importance of financial preparation for old age, the national pension has emerged as the most appropriate solution to the universal provision of income security in old age.

Starting in 1988 with slightly more than 4 million insured workers and applying only to workplaces with 10 or more employees, the national pension soon began to expand compulsory participation. It was applied to rural areas in 1995 and to urban areas in 1999, covering the total labor force between the ages of 18 and 59. With the expansion into urban areas, participation in the system jumped from fewer than 7 million in 1998 to more than 16 million in 1999. Following the 1997 Asian financial crisis, the number of insured members dropped temporarily, but since then it has continued to grow. The global economic and financial crisis that erupted in 2007 did not dampen the upward trend of participation. In fact, the number of insured persons has been rising even more quickly as a result of increasing concern about financial security in old age (Figure 11.1).

At December 2011, the proportion of citizens insured by public pension systems was 57 percent of the working-age population (those ages 15 to 64 years) and 90.6 percent of those active in the labor force (ages 15–64). However, the proportions contributing were much lower because many individually insured persons under the national pension had no earnings with which to pay them—the
Figure 11.1  Number of Insured Participants in the National Pension System (December 2011) (Thousands)


The proportion of current contributors to public pension systems was 40.4 percent for the working-age group and 64.2 percent for the labor force (Table 11.2).

The proportion of beneficiaries ages 65 and older covered by public income security systems reached 82.5 percent at the end of 2011 (Table 11.3). Most received the basic old-age pension. The number of dual beneficiaries—those who receive both the basic old-age pension and the national pension—is increasing every year as a result of increased participation in the latter.

**Reforms and implementation**

The national pension was introduced in 1988. In 1997, a committee for national pension reform was established to address concerns about the system’s long-term

**TABLE 11.2**

<table>
<thead>
<tr>
<th>People Insured by Public Pension Systems, December 2011</th>
<th>Number (thousands)</th>
<th>Working age: 15–64 (percent)</th>
<th>Labor force: Age 15–64 (percent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(A) Working age: 15–64</td>
<td>37,233</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(B) Labor force: Age 15–64</td>
<td>23,421</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(C) Number insured under public pensions</td>
<td>21,227</td>
<td>57.0 (C/A)</td>
<td>90.6 (C/B)</td>
</tr>
<tr>
<td>National pension</td>
<td>19,823</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public occupational pensions</td>
<td>1,404</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(D) Current contributors of public pensions</td>
<td>15,024</td>
<td>40.4 (D/A)</td>
<td>64.2 (D/B)</td>
</tr>
<tr>
<td>National pension</td>
<td>13,620</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public occupational pensions</td>
<td>1,404</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


1 Total does not include those who are exempt from contributing because they had no earnings and those who had reported earnings but had not made their contributions for more than a year.

2 Public occupational pensions include those for civil servants, private school teachers, and military personnel.
TABLE 11.3

Beneficiaries of Public Income Security for the Elderly, December 2011 (Thousands)

<table>
<thead>
<tr>
<th>Total population ages 65 and older</th>
<th>Recipients of basic old-age pension (BOAP)</th>
<th>Recipients of national pension (NP) and/or public occupational pension (POP)</th>
<th>Nonbeneficiaries</th>
</tr>
</thead>
<tbody>
<tr>
<td>5,701 (100.0%)</td>
<td>3,796 (66.6%)</td>
<td>1,813 (31.8%)</td>
<td>999 (17.5%)</td>
</tr>
<tr>
<td></td>
<td>&lt;NP + BOAP dual beneficiaries 907 (15.9%)&gt;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total: 4,702 (82.5%)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sources: Residents registration statistics, National Statistical Office (2011b), National Pension and Basic Old Age Pension Database; Government Employees Pension Scheme; Private School Pension Scheme; Military Personnel Pension Scheme.

Note: Beneficiaries electing to receive their national pension payments as a lump sum are excluded.

sustainability. Although the national pension’s financial position was solid in the short term—the ratio of annual expenditure to accumulated funds was 20.7 at the end of 1998, reflecting the relative immaturity of the scheme—the fund was projected to be depleted by 2031, owing to a mismatch between contribution rates and benefit generosity, and the rapidly aging Korean population (National Pension Corporation, 1998). Even though the majority of the committee members favored structural reform that would change the national pension into a dual system of a basic pension and an earnings-related pension, the revised act of 1998 contained only parametric reform.

In the 1998 reform, the national pension’s income replacement rate was reduced from 70 percent of earnings for a person with average earnings and 40 qualifying years to 60 percent. The contribution rate was kept at 9 percent, and the pensionable age was raised to 65 years from 60 years. A five-year review system was introduced to project the national pension’s long-term finances and suggest measures to improve the system and ensure its sustainability.

The first national pension financial review in 2003 showed that the pension fund would be depleted by 2047 (National Pension Development Committee, 2003). The government proposed a bill that would increase the contribution rate and reduce the benefit level, but it did not pass. Instead, through the subsequent 2007 reform, the national pension income replacement rate would be reduced from 60 percent to 50 percent in 2008 and then gradually to 40 percent by 2028. Along with this reform, a basic old-age pension system was introduced, which applied to 70 percent of the elderly population and paid a benefit of 5 percent of the average earnings of the population covered by the national pension.

As a result of the second reform in 2007, the pension fund’s depletion was projected to occur in 2060. However, because the reform was accomplished without social consensus on the definition of “financial stability” or agreement on the system’s long-term financial goals, it is not clear that the national pension fund has actually achieved long-term financial solvency. Some experts have argued strongly that the national pension needs further reform to ensure its financial solvency for the long term. Meanwhile, some civil rights activists, social welfare experts, and politicians have insisted that reducing elderly poverty and securing adequate benefits should be the pension system’s social priorities. The two previous reforms were pushed through in response to reforms being made in advanced economies rather than in response to identified domestic needs. Additionally, many people did not
have a clear understanding of the national pension’s role as an income security program because most had not yet received any benefits. Additional restructuring of the national pension and the basic old-age pension is a priority to further develop Korea’s income security system, but will likely be harder to accomplish than in the past.

FUTURE CHALLENGES

Changes in Population and Family Structure

Korea’s population is aging rapidly. The population 65 years old and older accounted for 3.1 percent of the total population in 1970, 5.1 percent in 1990, and 11 percent in 2010. The share is projected to increase to 37 percent by 2050 (Figure 11.2).

During the same period, life expectancy at birth increased from 61.9 years in 1970 to 81 years in 2010 and is projected to reach 84.3 years in 2030 and 87.4 years in 2050, according to 2011 population projections (NSO, 2011a). By contrast, the total fertility rate, which stood at 4.53 children per woman in 1970, dropped sharply to 1.08 in 2005. It has increased since; reaching 1.23 in 2010, but it is not expected to get much higher. Because of the increase in life expectancy and the low fertility rate, the old-age dependency ratio (the number of people ages 65 years and older as a share of the number of people ages 16–64 years) is projected to increase from 15 percent in 2010 to 71 percent in 2050 (NSO, 2011a).

Urbanization and an increase in the number of nuclear families have led to the growth of single households. Because of their increased life expectancy, many elderly people are now living alone. The proportion of elderly single households was 24.0 percent in 2000 and 25.4 percent in 2010; it is expected to reach 29.7 percent in 2020 and 39.8 percent in 2030 (NSO, 2011a). Additionally,
elderly people are less likely to be supported by their children than in the past; future generations should plan to support themselves when they are old.

Poverty among the Elderly

In 2008, the Organization for Economic Cooperation and Development (OECD) reported that the poverty rate of the elderly (ages 65 and older) in Korea was 45.1 percent, the highest among OECD countries. The relatively sudden appearance of poverty among the elderly is the result of population aging, the rapid increase in the number of nuclear families, and the subsequent collapse of the traditional family support system. Most elderly people in Korea did not expect to live so long and thus did not prepare financially. Traditionally, Korean parents have invested in their children, who then took care of them in their old age.

When the national pension was introduced in 1988, the proportion of the elderly in the total population was only about 5 percent, and average life expectancy was 70 years. People did not realize the importance of preparing for their old age. The national pension is a social insurance system, in which benefits are paid only after a person has fulfilled the qualifying conditions; elderly people who do not meet the employment criteria do not receive pension benefits. Meanwhile, fewer young people believe that they are obliged to support their parents. The proportion of private transfers in total retirement income among the elderly decreased from 54.8 percent in 1990 (Ministry of Home Affairs, 2002) to 44.7 percent in 2008 (Ministry of Health and Welfare and University of Kyemyong, 2009).

Inadequacy of Income Security

The old-age pension under the national pension is paid to an insured person who has fulfilled the minimum qualifying years (years of contributions) for receiving the pension and who is 61 years old in 2013. The qualifying time is set at 10 years, but was temporarily five years during the initial period of the national pension system. Owing to the short insurance period, the average old-age pension was equivalent to only 15.4 percent of the average earnings of those who were insured at end-2011.

Although the national pension is maturing and the average number of contribution years is increasing, because the statutory benefit level is going down, the average pension amount is not expected to increase much in the future. The benefit reduction that was part of the 2007 national pension reform reflects general acceptance of the multipillar system as a way to enhance income security. However, this system faces challenges. The national pension benefit is low and is anticipated to be kept low in the future, while private pensions are still in their infancy. The second-pillar retirement pension introduced in 2005 covered 46 percent of all regular employees as of December 2012 and is rapidly developing. However, the program’s history is very short, and no pensioners have emerged out of this scheme yet. Furthermore, the low coverage and high cancellation rate of individual pension contracts by insured individuals are creating a substantial challenge.

The basic old-age pension seems to be a good idea for elderly people who did not have the opportunity to be covered by a public insurance pension system.
However, despite the 70 percent coverage, the low benefit level does little to ameliorate poverty among the elderly (Yoon, 2012). Many civil activists and lawmakers are calling for an immediate increase in the benefit level; however, funding for a higher benefit level and universal coverage is not easy to find.

Sustainability of the National Pension System

The sustainability of the national pension system depends on its financial stability, fairness, and participation level.

Financial stability and adequate size of the fund

Even after two reforms to ensure long-term financial stability, funding for the national pension is still projected to run out by 2060 (Table 11.4). Most advanced economies reformed their public pensions when their funds were nearly exhausted (Kim and Shin, 2010) the national pension in Korea was reformed when its assets were still accumulating. However, although the fund will remain solvent for decades, the future of the national pension is uncertain because no plan is currently in place for what to do once it is depleted.

The new national pension financial projection according to the third financial review was officially announced by the government in March 2013. Based on the new projection, reform measures are being discussed by the committee to improve the system. If measures for long term-financial stability are enacted, they should be made more permanent because frequent reforms and conflicts have created enormous fatigue in the society.

Meanwhile, because the national pension fund has grown to a tremendous size, efficient operation has become a pressing issue. The fund is the fourth-largest public pension fund in the world. With this kind of growth, the importance of management has increased, along with the fund’s influence on markets. Issues raised include the short- and long-term policy direction of fund operation, and adequate asset allocation in domestic and foreign investments and in stocks, bonds, and other assets. The fund’s governance structure is also receiving great attention, including on the issue of exerting voting rights as a shareholder and whether the fund should make social investments. The fund will become much bigger if the contribution rate is increased in the interest of financial stability. If this happens, operations will be an even greater issue.

Fairness

Because of the system’s youth, the equilibrium pay-as-you-go contribution rate of the national pension was only 3.7 percent in 2013, much lower than the contribution rate of 9 percent. However, because the Korean population is aging fast and the number of pensioners will increase quickly, the pay-as-you-go rate will also rise rapidly (Table 11.5).

On the one hand, under the current structure, current pensioners receive a benefit that is greater than what their contributions would financially justify. Future generations will bear the cost of this gain, which could create conflicts between generations.
TABLE 11.4
The Third Long-Term Financial Projection of the National Pension in 2013

<table>
<thead>
<tr>
<th>Year</th>
<th>Assets (A) (billion won)</th>
<th>Revenue (billion won)</th>
<th>Expenditure (billion won)</th>
<th>Balance (billion won)</th>
<th>Assets/Expenditure (A/B)</th>
<th>Contribution Rate (percent)</th>
<th>Assets (2010 constant price) (billion won)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>417,727</td>
<td>52,217</td>
<td>32,135</td>
<td>20,082</td>
<td>14,556</td>
<td>14,032</td>
<td>37,661 (9%)</td>
</tr>
<tr>
<td>2020</td>
<td>847,171</td>
<td>109,098</td>
<td>54,073</td>
<td>33,923</td>
<td>33,487</td>
<td>75,175</td>
<td>18.2 (9%)</td>
</tr>
<tr>
<td>2030</td>
<td>1,732,381</td>
<td>186,913</td>
<td>95,041</td>
<td>91,872</td>
<td>89,953</td>
<td>89,176</td>
<td>96,960 (9%)</td>
</tr>
<tr>
<td>2040</td>
<td>2,494,494</td>
<td>258,427</td>
<td>141,595</td>
<td>116,832</td>
<td>213,773</td>
<td>212,563</td>
<td>44,654 (11.5%)</td>
</tr>
<tr>
<td>2043</td>
<td>2,561,489</td>
<td>277,586</td>
<td>156,765</td>
<td>120,822</td>
<td>267,328</td>
<td>265,963</td>
<td>10,258 (9%)</td>
</tr>
<tr>
<td>2044</td>
<td>2,558,741</td>
<td>283,749</td>
<td>162,747</td>
<td>121,003</td>
<td>286,498</td>
<td>285,076</td>
<td>–2,478 (9.5%)</td>
</tr>
<tr>
<td>2050</td>
<td>2,200,519</td>
<td>309,781</td>
<td>203,282</td>
<td>106,498</td>
<td>414,088</td>
<td>412,288</td>
<td>–104,308 (5.6%)</td>
</tr>
<tr>
<td>2060</td>
<td>–280,716</td>
<td>263,375</td>
<td>263,375</td>
<td>0</td>
<td>657,820</td>
<td>655,155</td>
<td>–394,445 (0.2%)</td>
</tr>
<tr>
<td>2070</td>
<td>—</td>
<td>358,101</td>
<td>358,101</td>
<td>0</td>
<td>948,255</td>
<td>944,311</td>
<td>–590,154 (—)</td>
</tr>
<tr>
<td>2080</td>
<td>—</td>
<td>477,892</td>
<td>477,892</td>
<td>0</td>
<td>1,263,650</td>
<td>1,257,811</td>
<td>–785,757 (—)</td>
</tr>
<tr>
<td>2083</td>
<td>—</td>
<td>518,944</td>
<td>518,944</td>
<td>0</td>
<td>1,388,539</td>
<td>1,381,971</td>
<td>–869,595 (—)</td>
</tr>
</tbody>
</table>

Note: Dashes reflect the fact that the national pension fund will run out of assets by 2060, with returns falling to zero. From then on, it is also no longer possible to calculate the assets-to-expenditure ratio.
On the other hand, the benefit calculation formula makes the system redistributive across various income groups. The earnings used to compute national pension benefits are $A$ (average earnings of the total insured) and $B$ (each participant’s lifelong average earnings); thus, a person whose earned income has been less than $A$ can receive a greater benefit.\footnote{National pension benefit formula: $1.2(A+B)(1+0.05n)$ as of 2028, upon completion of the benefit reduction to 40 percent for the insured with average earnings and 40 qualifying years, where $A$ is average monthly earnings of the total insured, $B$ is each participant’s lifelong average monthly earnings, 1 is for 20 qualifying years, and $n$ is qualifying years in excess of 20 for each participant (40 years for full pension).}

However, many low earners and elderly persons with no history of contributing cannot access the national pension, because it requires beneficiaries to have contributed. The biggest beneficiaries may be those who were first to apply to the new system. Meanwhile, future generations will bear a larger burden, while those generations who worked before the system was established will not receive any benefits. Those who failed to make their contribution payments will also be excluded. Thus, the public insurance pension might not cover a considerable proportion of the population.

These issues must be considered in any discussions about new reforms, with the goals of enhancing fairness between generations and among income groups, while providing better care for the less privileged.

**Participation**

To sustain the national pension system in the long term, people will have to be supportive and participate in the plan. Since the introduction of the system, the government and the National Pension Service have worked hard to improve participation. The media have covered the issue of the future of the system in great detail, as well as the coming of the so-called “homo hundred era” and income security for older people. As people have become more concerned about their future income security and have learned about the advantages of the national pension system, more of them are choosing to participate. The gradual increase of pensioners to more than 3 million as of the end of 2012 has increased recognition of and participation in the system.

**The roles of the pillars**

The income security system in Korea has become a multipillar system in a relatively short time, but it is still immature and inadequate with regard to coverage

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TABLE 11.5

<table>
<thead>
<tr>
<th>National Pension Pay-as-You-Go Rate (Percent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
</tr>
<tr>
<td>------</td>
</tr>
<tr>
<td>3.7</td>
</tr>
</tbody>
</table>

Source: National Pension Financial Projection Committee (2013), the Third National Pension Long-Term Financial Projection.
and benefit levels. Each pillar in the system is trying to improve its coverage as quickly as possible; however, pursuit of this goal has led to competition and even some conflict. For example, in 2012 the national pension began offering a subsidy to help low-income workers contribute; the retirement pension has tried to introduce a similar program to extend its coverage. Numerous public and private pension plans have been introduced, and they have not yet reached maturity or provide significant coverage. The most urgent task might be to define what the role of the basic old-age pension in the income security system should be. To develop a functioning income security system in Korea, a blueprint for the short and long terms must be created and then followed.

REFORM OBJECTIVES AND OPTIONS

Reform Objectives

The objectives of pension reform are to

- Ensure adequate benefits and wide coverage;
- Ensure equity between generations;
- Enhance the sustainability of the system; and
- Restructure the system for maximum efficiency and effectiveness.

To succeed, reforms must also be socially acceptable and feasible.

Ensure adequate benefits and wide coverage

The minimum goal for a public pension system is to ensure that citizens are free from poverty. In Korea, many people are not covered by the social insurance national pension, so the basic old-age pension will be a necessary part of the system for a long time. If public pension systems function better in the future, there will be less need for the basic livelihood security program as a last resort. Both public and private pension systems need to improve simultaneously to ensure adequate benefit levels, but it is even more important to substantially expand coverage of the national pension and lengthen the average contribution period of insured persons.

Korea’s income security system has developed in a piecemeal manner, without a systematic plan. Before pursuing yet another reform, a blueprint must be created for both the short and long terms. Minimum adequate standards for income security should be clearly defined, although the fact that people occupy diverse income groups in society makes it difficult to reach a consensus. Benefit levels of basic pensions in some OECD countries are 15 percent to 25 percent of average income; this benchmark could be used to establish a minimum standard pension benefit. There is no common definition of an adequate income level for old age, but a benefit of 60 percent to 70 percent of preretirement income is often mentioned. However, the level will be higher for low-income retirees and lower for high-income retirees.

On the revenue side, measures to help the insured acquire longer qualifying periods should be introduced to enhance the adequacy of pension benefits.
Individuals who have difficulty making contributions would benefit from programs such as provision of credits during periods when they are raising children or serving in the military, state subsidy to their contributions, and facilitating voluntary affiliation.

**Ensure equity between generations**

Currently, the income security burden in Korea is not large. As of 2011, the cost of the national pension as a proportion of GDP was only 0.8 percent, and that of the basic old-age pension was only 0.3 percent. However, as the national pension scheme reaches maturity and the population ages, the burden will increase. Reforms are needed to achieve greater sustainability of the public pension systems and reduce the burden on future generations.

Ensuring equity between generations is a complicated task in an aging society. So far, the national pension benefit level has been reduced considerably while the contribution rate has remained at a relatively low level. Increasing the contribution rate may be the best way to improve equity between generations.

**Enhance the system’s sustainability**

Public pension systems must be sustainable. Although the national pension fund will continue accumulating for the next several decades, it will eventually run out. The system must plan now to ensure its long-term financial stability.

Clarification of the long-term financial goals of pension reform would make the future more predictable. People will have greater confidence in the system if they know it will endure. The total amount of public pension expenditures as a proportion of GDP should be forecast and monitored on a regular basis.

**Restructure the system for efficiency and effectiveness**

The income security system needs restructuring to be more efficient and effective. The basic old-age pension exists in a vague area between social assistance and social allowance. It is not universal but has very wide coverage; however, the low benefit level does not ameliorate poverty. Moreover, there is no clear concept of its role in providing income security for the elderly. The ambiguity that surrounds the basic old-age pension affects the status of the national pension—positioning the basic old-age pension in the income security system influences the direction of the national pension.

**Social acceptance and feasibility of reforms**

The number of insured persons and pensioners has increased, and people have become more aware of the importance of early preparation for their old age, so reforming the pension system is likely to be more difficult than it was in the past. To succeed, any reform must be socially and financially acceptable. For example, the likelihood of longer retirements may mean increasing the statutory retirement age. Successful pension reform will require measures to deal with differences
between the present system and the reformed one, especially compensation for the “losers” in the reformed system. Finally, as the national pension fund increases substantially over the coming decades, management and operations will be more complicated.

**Reform Options**

*Parametric reform measures*

If the national pension is reformed again to improve its financial stability, the priority policy option is likely to be raising the contribution rate. This option is quite effective for achieving long-term solvency, but people tend to dislike it. In the previous two reforms, participants expressed a clear preference for reducing the benefit level rather than increasing the contribution rate—the effect of benefit reduction might be far in the future, while an increase in the contribution rate is felt immediately. If the contribution rate is increased, the main issues will be the amount and the implementation schedule.

Table 11.6 shows three scenarios for increasing the contribution rate. The financial goal for all three is to achieve an asset-to-annual-expenditure ratio of at least 2 in 2078. The long-term financial goal is set relatively low to prevent over-accumulation in the pension fund and to keep the contribution rate from soaring.

The scenarios have different schedules for adjusting the rate. In scenario 1, the contribution rate is raised gradually from 2020 to 2029; in scenario 2, it rises from 2030 to 2039; and in scenario 3, it rises from 2040 to 2049. In scenario 1, the contribution rate is raised to 13.8 percent and then fixed; in scenario 2, it increases to 15.0 percent; and in scenario 3, it rises to 17.4 percent. Scenario 1 imposes the lowest burden on future generations while enhancing intergenerational equity. However, because the contribution rate is adjusted earlier, fund assets will increase more. The huge size of the accumulated fund could put operations at greater risk, which could, in turn, affect the larger economy. Thus, scenario 1 is the best option for intergenerational equity and affordability, but scenario 2 is best with regard to optimal fund size.

Another parametric reform option for the national pension is to increase the statutory retirement age. The age was raised from 60 to 65 years in the 1998 reform, but life expectancy in Korea is quickly catching up to that in other OECD countries. Raising the pensionable age further would postpone depletion of the fund. For example, if the pensionable age were increased to 67 years by one year every five years between 2038 and 2048, depletion would be postponed from 2060 to 2064. If it were raised to 68 years from 60 years on a schedule of one year every three years from 2013 to 2034, depletion would be postponed to 2069 (Lee, 2012). Increasing the retirement age seems more attractive than raising the contribution rate for achieving fiscal stability, but it would be difficult to recommend, given the current retirement age and the poor labor market conditions for older people.
TABLE 11.6
Three Contribution-Rate Scenarios to Attain the National Pension System’s Long-Term Financial Goal

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Schedule for Increasing Contribution Rate (percent per year); Period</th>
<th>Constant Contribution Rate at End of Scheduled Increases (percent)</th>
<th>Final Ratio of Assets to Expenditure (2083)</th>
<th>Assets/GDP (year: percent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.48; 2020–29</td>
<td>13.8</td>
<td>2.5</td>
<td>2020: 39.4</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2030: 27.2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2040: 72.9</td>
</tr>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>2050: 75.7</td>
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<td></td>
<td></td>
<td></td>
<td>2060: 68.1</td>
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<td></td>
<td></td>
<td>2070: 50.8</td>
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<tr>
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<td></td>
<td></td>
<td>2080: 26.6</td>
</tr>
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<td></td>
<td></td>
<td></td>
<td>2083: 17.7</td>
</tr>
<tr>
<td>2</td>
<td>0.62; 2030–39</td>
<td>15.2</td>
<td>2.5</td>
<td>2020: 39.2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2030: 48.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2040: 60.1</td>
</tr>
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<td></td>
<td>2050: 65.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2060: 60.3</td>
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<td>2070: 45.8</td>
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<td>2080: 25.3</td>
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<td></td>
<td>2083: 17.8</td>
</tr>
<tr>
<td>3</td>
<td>0.84; 2040–49</td>
<td>17.4</td>
<td>2.2</td>
<td>2020: 39.3</td>
</tr>
<tr>
<td></td>
<td></td>
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<td></td>
<td>2030: 47.8</td>
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<td>2050: 48.4</td>
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<td>2060: 47.1</td>
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<td>2070: 36.6</td>
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<td></td>
<td></td>
<td>2080: 21.6</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2083: 16.1</td>
</tr>
</tbody>
</table>

Source: Scenarios were devised by author and projected by the National Pension Research Institute using the 2013 National Pension Projection Model and the same assumptions of variables use in the third financial projection.

Introduction of an automatic adjustment mechanism is another option. But its main purpose would be to systematically reduce the benefit, which seems inappropriate for the national pension, which already has a relatively low average benefit level. Successful reform of the national pension system will require some measures for coverage expansion and adequate benefits, along with measures to ensure financial stability.

**Structural reform measures**

The most frequently suggested structural reform option is to combine the universal tax-based system (the basic old-age pension with 100 percent coverage of the elderly ages 65 years and older) and the social insurance earnings-related system (the national pension). Table 11.7 shows two scenarios for combining the two systems. In scenario 1, the national pension benefit level is reduced to 30 percent by 2038 and the basic old-age pension is changed to universal coverage with a
benefit equal to 10 percent of average earnings of those covered by the national pension. In scenario 2, the combined benefit level is 25 percent of the national pension and 15 percent of the basic old-age pension.

In both scenarios, income security will be greater than in the present public pension system. However, if the old-age pension is universal and its benefit level increases, the cost for income security will also increase. Thus, scenario 1 has a lower cost, but scenario 2 provides a more adequate benefit level. In any event, this reform option has little support among the population. People will strongly resist another benefit reduction in the national pension, and the introduction of a universal pension would also be difficult because of the high cost in an aging society.

Another option would be the introduction of a notional defined-contribution plan with a minimum pension or income guarantee. Table 11.8 shows two scenarios of equivalence between benefit level and contribution rate of the pension plan. In scenario 1, the contribution rate is fixed at 9 percent; in scenario 2, the benefit level is fixed at 40 percent.

In scenario 1, the benefit level provided by a contribution rate of 9 percent would be about 22 to 23 percent, which is too low to be accepted by participants in the national pension. In scenario 2, the contribution rate to support a benefit level of 40 percent would be about 15 to 16 percent, which is too high to be accepted.
The introduction of a minimum pension—for current participants in the national pension who have short contribution histories and elderly people who are not covered by the national pension—seems unrealistic given that it would require an enormous amount of public expenditure. Some have suggested privatizing the national pension, but this idea is unpopular and seems unrealistic.

**CONCLUSION**

Korea has experienced rapid growth in its income security system. The introduction of the national pension in 1988 was late compared with other OECD countries, but by 1999 it applied by law to all labor force participants ages 18 to 59 years. With the introduction of the individual pension in 1994 and the retirement pension for private sector employees in 2005, a multipillar income security system was established. Two pension reforms for greater financial sustainability were implemented within 20 years of implementation of the national pension, considerably changing the system’s framework.

Since the introduction of the national pension, the most important considerations have been expanding its coverage and ensuring its long-term financial sustainability. Income security for the current older generation was not addressed until the introduction of the basic old-age pension in 2007. Although this pension has wide coverage, the benefit level is low and its impact on poverty alleviation has been minimal. When the basic old-age pension was introduced, the benefit was set at 5 percent of the average earnings of those insured by the national pension; the plan was to increase the benefit to 10 percent by 2028.

The Geun-hye Park administration, which took office in February 2013, has announced plans to increase the coverage of the basic old-age pension and raise its benefit level to 10 percent of the average earnings of the national pension, thereby advancing the original schedule for increasing benefits. However, debates are expected on the equity and validity of this proposal, and on how it would be financed.

Any change in the basic old-age pension will likely influence the future of the national pension; however, significant change in the near future is unlikely owing to the resistance of the insured. Meanwhile, even without considering the basic old-age pension, the national pension should promote its own development as the main income security system in Korea. Its key tasks are to expand coverage, enhance the adequacy of benefits, and achieve long-term financial stability.

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**TABLE 11.8**

<table>
<thead>
<tr>
<th>National Pension Benefit Level and Contribution Rate Alternatives</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Scenario 1: 9 Percent Fixed Contribution Rate</strong></td>
</tr>
<tr>
<td>Earnings Benefit level: 21.8%</td>
</tr>
<tr>
<td>Interest Rate Benefit level: 23.5%</td>
</tr>
<tr>
<td><strong>Scenario 2: 40 Percent Fixed Benefit Rate</strong></td>
</tr>
<tr>
<td>Contribution rate: 16.5%</td>
</tr>
<tr>
<td>Contribution rate: 15.3%</td>
</tr>
</tbody>
</table>

Source: Scenarios were devised by author and projected by the National Pension Research Institute using the same assumptions of variables used in the third financial projection.

Note: These alternatives both assume that contributions are made for 40 years beginning in 2013 and benefits are received for 20 years beginning in 2053. Earnings are escalated according to the wage index, and benefits are adjusted by the price index.
The individual pillars of the Korean income security system need to be developed carefully and in tandem, with each pillar assuming its proper position. Numerous reform options have been considered in the past, and some of them are currently being discussed. Despite the painful and time-consuming process, all participants hope to reach consensus on reform.

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CHAPTER 12

Singapore’s Pension System: Challenges and Reform Options

MUKUL G. ASHER AND AZAD SINGH BALI

INTRODUCTION

Singapore has evolved from a low-to-middle-income country to a high-income country in a relatively short period. Singapore’s economic success notwithstanding, several factors suggest that policymakers should focus more on promoting the equity and sustainability of the country’s current pension arrangements. Concern about congestion externalities—particularly in transport, housing, and recreational facilities—and competition for positional goods—such as cars, housing, and education—have also become an integral part of the political and social discourse in Singapore.

The chapter is organized as follows: The next section briefly discusses demographic and labor market trends and is followed by a section that discusses the main characteristics of Singapore’s pension system. The subsequent section provides an assessment of the equity and sustainability of the pension system, with a discussion of possible initiatives such as implementing social pensions.

SINGAPORE’S PENSION SYSTEM

Current Structure

Singapore’s pension system relies overwhelmingly on a mandatory savings tier administered by the board of the Central Provident Fund (CPF) and supervised by the Ministry of Manpower. Set up in 1955, the system has evolved into a key socioeconomic institution that affects the welfare of Singapore households. Given the system’s complexity and multifaceted nature, a brief overview of its characteristics that are relevant for analyzing equity and sustainability is provided.¹ These aspects are aggregate indicators, high preretirement withdrawals, administered rate of interest credited to members, and CPF LIFE, an annuity scheme at the payout phase. Civil service and military pension arrangements are also discussed.

¹For a more detailed discussion of the various components of the CPF system, see Asher and Nandy (2011). The official website of the Central Provident Fund is http://www.cpf.gov.sg.
Singapore’s Pension System

Contributions are channeled into three accounts: Ordinary, Medisave, and Special. Broadly, these are to be used for housing and investments, health care expenditures, and old-age and retirement investments, respectively.

In mid-2013, US$1 was approximately S$1.27.

Aggregate indicators

The CPF system was established in 1955, but only since 1968 have a variety of preretirement asset-accumulation schemes been introduced. The schemes were introduced in response to various ad hoc policy objectives, and have frequently been revised. The contribution rate structure has been altered accordingly.

The CPF system is open only to Singapore’s citizens and permanent residents. The contribution rate and the shares allocated to the three different accounts vary with age. The contribution rate—subject to a wage ceiling of S$4,500 per month—ranges from 36 percent for members less than 50 years old, to 32.5–14.5 percent for members between 51 and 65 years old, and 5 percent for those older than 65. The proportion of the contributions allocated to a member’s different accounts also varies by age, with the share explicitly allocated for retirement purposes in the Special Account falling with age. These allocations and arrangements suggest that policymakers assign low priority to accumulation of cash balances for retirement.

Key aggregate indicators for the CPF are presented in Table 12.1. The active CPF members—those who have contributed in any of the past three months—include 85 percent of the resident labor force (that is, citizens and permanent residents). Thus, the CPF’s coverage has been comparable to that in other advanced economies and can be considered universal; however, there are a large number of inactive members.

CPF member balances as of September 30, 2012, representing the gross savings of the 3.4 million members, were the equivalent of 69 percent of GDP. The largest share was in the Ordinary Account from which withdrawals can be made for house purchases and other expenses during a member’s working life. The balances to

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2Contributions are channeled into three accounts: Ordinary, Medisave, and Special. Broadly, these are to be used for housing and investments, health care expenditures, and old-age and retirement investments, respectively.

3In mid-2013, US$1 was approximately S$1.27.
finance health care expenditure were 18 percent of GDP, while the remaining was for financing old age. This breakdown suggests that the CPF system has multiple purposes, only one of which is financing old age.

**High preretirement withdrawals**

Because the CPF has multiple purposes, substantial withdrawals are made for housing, retirement, health care, and other purposes, leading net contributions to be relatively modest. Withdrawals for 1997–2011 averaged 74.9 percent of contributions. During this period, the CPF’s contribution to gross national savings averaged 8.1 percent, including interest income earned on CPF balances. This is a relatively modest contribution because Singapore’s gross domestic saving rates have been high, averaging 49 percent during 1997–2011. This figure suggests that public and business sectors have contributed much more to Singapore’s high saving rates than have mandatory CPF savings.4

**Administered interest credited to members**

In any defined-contribution (DC) system, returns on member contributions and accumulated balances affect member savings for retirement. Since the CPF’s inception, members have been credited with an administered rate of interest, with a minimum government guarantee of 2.5 percent nominal interest on all accounts. On January 1, 2008, savings in the Special, Medisave, and Retirement Accounts (SMRA) were pegged to the 12-month average yield of the 10-year Singapore Government Security plus 1 percent. To help CPF members adjust to the floating SMRA rate, the government pledged to maintain a 4 percent minimum rate for government securities until December 31, 2013, after which the 2.5 percent floor rate legislated in the CPF Act will continue to apply for all CPF accounts including SMRA.

The asset side of the CPF balance sheet comprises nonmarketable government securities, on which interest is determined after the fact. How the proceeds from these securities, which form a major part of Singapore’s internal debt,5 are used by the government lacks transparency. IMF data indicate that during 2000–12, Singapore’s overall fiscal balance exhibited an annual surplus of 5 percent of GDP.6 This figure suggests that the government has no need to borrow from the CPF system to finance its expenditure. It is therefore a reasonable assumption that the optimum deployment of the CPF balances is not made by the CPF Board or the general government itself. The Singapore Government Investment Corporation (SGIC), Singapore’s prominent sovereign wealth fund, which invests globally, is presumed...
to be the agency ultimately deploying CPF funds. By statutory provision, SGIC is not required to reveal its financial performance and activities. Thus, CPF members are not provided information on the ultimate investments of their balances.

Figure 12.1 presents implicit real returns on CPF balances in comparison with growth in real wages and real GDP for the period 1987–2011. Because the interest credited by the CPF Board to its members’ accounts is used to estimate implicit returns, the estimation includes differing administered interest rates paid to various accounts. Mean wage data reported by the CPF in Ministry of Manpower statistics were used to calculate growth in real wages. Growth in real GDP and real wages exceeded the implicit real rate on CPF balances by nearly six and three times, respectively, in the 25-year period. Compound interest calculations suggest that a sum of money growing at 1.4 percent per year will double in nearly 50 years. In September 2012, the average CPF balance was S$66,000. Because CPF is the primary source of financing retirement expenditure, it appears that the current CPF member balances would be inadequate to provide a reasonable replacement rate during retirement, though the extent of the inadequacy will vary by member.

To the extent that the SGIC earns higher returns on CPF balances than is credited to members, there is an implicit tax on CPF wealth that is recurrent, highly regressive, and often quite large (Asher and Nandy, 2011).

The replacement rate reflects the ratio of retirement income to preretirement income, so the higher rate of wage growth, as compared with returns on balances, has adversely affected the replacement rate for CPF members. More detailed analysis of the replacement rates requires disaggregated data on the density of contributions and

**Figure 12.1** Implicit Real Return on CPF Balances; Growth in Real GDP and Real Wages, 1987–2011 (Percent)

![Figure 12.1](image-url)

Source: Authors’ estimates using data from CPF (various years), Department of Statistics (various years), and Ministry of Manpower (various years).

Note: CPF = Central Provident Fund.
CPF LIFE

CPF LIFE, introduced in 2009, is a deferred annuity scheme, with individuals bearing the cost of purchasing the annuity from their accumulated balances in their retirement accounts.\(^7\) When introduced, the scheme offered four plans: plus plan, balanced plan, basic plan, and the income plan, which varied by the amount of bequest (if any) that the participant would want to leave for his or her beneficiaries. The scheme has two parts: a deferred annuity component and a savings component. Once an individual decides to participate in the scheme, he or she is required to purchase an annuity (the premium is based on gender and age, and is paid from his or her Retirement Account), which starts either at the participant’s drawdown age or at age 80 or 90. The remaining savings (if any) in the participant’s Retirement Account is drawn down on a monthly basis until age 80 or 90, after which time the deferred annuity begins. Payouts are not indexed to prices.

Effective January 2013, the CPF Board reformed the CPF LIFE scheme to offer two plans: the standard plan and the basic plan. The scheme will be compulsory for those born after 1958 and who have $40,000 in their Retirement Accounts at age 55 or at least $60,000 at their drawdown age. Members can voluntarily join the CPF LIFE scheme at any age between 55 and 80. As before the reform, the plans vary by the amount of bequest that members wish to leave. The annuity is to be bought at age 55, but in the standard plan, payouts will not begin until the drawdown age of 65. It should be noted that CPF LIFE does not increase resources available to individuals for retirement; however, it gives greater control to the CPF Board over the stock of savings of CPF members, because CPF LIFE is organized and administered by the CPF Board. It also provides greater security to those purchasing CPF LIFE products because of the government’s implicit backing.

Civil service and armed forces pension arrangements

Singapore initiated measures to establish a common system for pensions for civil servants and private sector employees. As a result, an overwhelming proportion of civil servants, political representatives, and appointees are members of the CPF.\(^8\)

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\(^7\)The CPF LIFE scheme applies only to the Minimum Sum. At age 55, when members can withdraw funds from their CPF accounts, they are required to retain a minimum balance (US$139,000 in 2012). If at age 55 a member does not have the minimum balance, the member’s real property (regardless of whether purchased with CPF Ordinary Account funds) is automatically pledged to meet the difference. If the member’s accumulated balances are insufficient for the Minimum Sum, then there is no requirement that additional funds be deposited to equal the Minimum Sum. The Minimum Sum is based on an absolute concept of poverty.

\(^8\)There are, however, some differences in the design details, including benefit levels, between civil servants and private sector employees (Asher and Bali, 2011).
Armed forces personnel are governed by a separate DC scheme called the Saver Fund, which was established in 1998. The value of the accumulated pension benefits at the time of the fund’s introduction were estimated and transferred into members’ accounts.

The Saver Fund receives contributions from the Consolidated Revenue Account of the government, mandatory contributions from personnel, and income earned from its investments. The contribution rate for the first six years of service is 13 percent, after which it is increased to 15 percent. Unlike the CPF, the Saver Fund gives members limited options for investing their accumulated balances.

**FUTURE CHALLENGES**

Singapore’s pension system faces a number of challenges, which are partly related to the country’s past and future growth strategies.

First, one of the consequences of Singapore’s growth strategy has been the rising share of the country’s noncitizen population, a ratio that increased from 14 percent in 1990 to 26 percent in 2000, then to 38 percent in 2012. The growth rate of citizens has been a fraction of the growth rate of noncitizens. Such a trend is difficult to sustain in any country in the long term.

Second, the population of Singapore is expected to age very rapidly in the next two decades as a result of below-replacement-rate fertility rates since 1975. The United Nations (UN) projects that the population older than 65 will grow from about 0.46 million in 2010 to 1.40 million in 2030, an increase of 207 percent in just two decades (UN, 2010). Life expectancy at age 65, which was 18.3 years for men and 21.8 years for women in 2011, is also expected to rise (Government of Singapore, 2012d). It is projected that a substantial proportion will live until age 85, and the population in their nineties will also increase in the future. These demographic trends are likely to drive the need for age-related pension (and health care) expenditure.

The official response to the rapid aging of Singapore’s population is to raise productivity through business restructuring and workforce retraining, encouraging higher labor force participation, and continuing to encourage foreign labor—albeit in a calibrated manner (Government of Singapore, 2012b). This response suggests that policymakers recognize that the single-minded pursuit of growth is no longer desirable. Growth needs to be calibrated to address social and political acceptability, particularly its impact on congestion externalities and positional goods. The trade-off between the rate and composition of growth on the one hand, and social needs and political acceptability on the other hand is a major challenge.

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9In 2012, of the total population of 5.31 million, citizens constituted 3.29 million, permanent residents 0.53 million, and foreign skilled and semiskilled professionals on various work visas and their dependents 1.43 million (Government of Singapore, 2012d).

10In recent years, the total fertility rate, which measures the average number of children that would be born to a woman during her reproductive years, has fluctuated between 1.1 and 1.4, well below the replacement rate of 2.1 (Government of Singapore, 2012d).
policy dilemma for Singapore. This dilemma is especially vexing because policymakers appear unwilling to undertake substantive fiscal measures and family-friendly initiatives that could positively affect the current low fertility rates.

Third, Singapore has relied primarily on a single-tiered retirement financing system involving mandatory savings administered by the CPF. With increasing longevity and continuing increases in the old-age dependency ratio, relying on savings from income during working years to finance retirement—which, in some cases, may exceed the proportion of life spent in the labor force—has become increasingly untenable for a significant amount of the population.

Fourth, policymakers in Singapore have expected that a longer working life will significantly contribute to retirement income security even while primarily relying on the mandatory savings tier, but the age-specific labor force participation rates (LFPR) for males and females in Singapore do not lend strong support to such an expectation. In 2011, Singapore’s total LFPR, at 66.1 percent, was higher than the corresponding figure for Japan (60 percent) and Korea (61 percent), but marginally lower than that of Canada (67 percent). However, for older age groups, between 60 and 64, Singapore’s LFPR at 51 percent compares unfavorably with those of Japan (55 percent) and Korea (56 percent). A similar pattern is also observed in the LFPR for the age 65–69 group. Nevertheless, any effort to encourage longer working lives merits consideration.

**REFORM OPTIONS**

The discussion so far of Singapore’s pension system strongly suggests that the absence of risk-pooling and risk-sharing mechanisms has important implications for equity, particularly gender equity, and sustainability. This section assesses Singapore’s pension system focusing on specific measures that could improve its equity and sustainability. It suggests that introducing social pensions, which are noncontributory and financed from the budget, could help improve equity and sustainability while being fiscally affordable.

**Equity Assessment**

Equity may be interpreted in different ways but generally involves ensuring that different groups in the society, and men and women in particular, do not have vastly different levels of pension provision and characteristics. The three main areas for which opportunities to improve the equity of Singapore’s pension system exist are tax treatment, payout-phase arrangements, and treatment of foreign workers.

**Tax treatment**

CPF contributions (subject to a wage ceiling), income, and withdrawals are free of tax. Because CPF contributions by employees are tax exempt, the rate of subsidy varies with the marginal income tax rate. Individual income tax rates in 2009–10 ranged from 3.5 percent to 20.0 percent, and the total number of
Members benefit from the government’s guaranteed interest rate on CPF balances. This benefit has not been taken into account in estimating the implicit tax, and thus the net burden of the tax is likely to be lower.

The regressivity is compounded by the implicit tax on CPF wealth, which falls disproportionately on the bottom half of the income group. According to the SGIC’s Annual Report of 2008–09, for the 20-year period ending March 31, 2009, the annualized rate of return on its portfolio was 4.4 percent in nominal terms and 2.6 percent in real terms (SGIC, 2009). Assuming the CPF balances are managed by the SGIC, the implicit tax on the CPF wealth is the difference between what the SGIC has announced as its returns and what is credited to CPF members’ accounts. Applying the difference between 2.6 percent and 1.4 percent (Figure 12.1) obtained on CPF balances provides a crude estimate of the implicit tax of CPF wealth of S$2.63 billion (S$2.63 = (2.6–1.4) × S$219.3 billion). The tax is both large and regressive because households on relatively lower incomes are likely to have a larger proportion of their wealth in the form of CPF balances. In estimating Singapore’s household tax burden, this implicit tax should be included. This tax also affects intergenerational fairness, because the current generation bears the burden of reduced consumption for the potential benefit of future generations.

This implicit tax suggests an opportunity is available to improve equity by reducing or eliminating the implicit tax on CPF wealth. This tax could be eliminated by, for example, transferring progressively the CPF balances currently being managed by Singapore’s sovereign wealth funds to an autonomous CPF Board with the mandate to manage the CPF funds in the interests of CPF members in a transparent and accountable manner. The precise method of addressing the implicit tax on CPF wealth merits much more rigorous analysis than can be provided here.

**Payout-phase arrangements**

In 2009, CPF LIFE was introduced for the payout phase of the CPF. Its design raises at least two important equity issues.

First, the premiums charged for the annuity are based on age and gender, with women paying a higher effective premium than men because women, as a group, live longer. Thus, the CPF LIFE premium is structured along private, not social,
insurance methods. This structure is particularly disadvantageous to women, who, as a group, have lower CPF balances than do men but need income support for a longer period.\footnote{The mean wage for women, as a group, was 77 percent that of men in 2011 (Government of Singapore, 2012c).}

Second, the annuity benefit is specified in nominal terms, which implies that the real value of the annuity will decline in line with Singapore’s future inflation rate. This will not only reduce the replacement rate as the retirement period progresses, but will also not permit individual retirees to benefit from Singapore’s future economic growth.

The above analysis suggests that preretirement income inequalities are not only carried forward in retirement but are also accentuated. Therefore, the policy focus in Singapore needs to shift from targeting absolute levels of income to relative levels of income. There is also considerable merit to introducing a social insurance method for providing the annuity at the payout phase and to increasing the transparency of the actuarial and other assumptions relating to CPF LIFE.

**Treatment of foreign workers**

The stock and flows of foreign workers are subject to government regulation and administrative measures. The structure of the levy and its design are complex, with variances across sectors, skill levels, and nationality, and along the dependency ratio ceiling. Disaggregated data on the number of foreign workers are unavailable, but at end-2010, there were 201,000 foreign domestic workers. The budget does not provide separate revenue data for levies on foreign workers, because it combines the information with the Airport Passenger Service Charge under the “Other Taxes” category. In 2011, the revised revenue estimate from Other Taxes was S$3.15 billion (equivalent to 6.9 percent of total tax revenue; Government of Singapore, 2012a), suggesting that the revenue from the levy on foreign workers is nontrivial.

A substantial proportion of the Other Taxes collected can reasonably be assumed to be levies on foreign workers. These workers, therefore, contribute significantly to fiscal revenues in Singapore. However, they are not members of the CPF, are ineligible for social and community benefit schemes, and do not receive health care subsidies and benefits like Singaporean residents do.

To help enhance equitable treatment of foreign workers, a better balance between the revenue derived from them and the budgetary expenditure primarily benefiting them merits serious consideration.

**Sustainability Assessment**

It is important to distinguish between financial and economic sustainability of a pension system. Financial sustainability refers to the matching of liabilities and
assets. If projected liabilities are greater than assets, then the pension plan must either reduce benefits, increase contributions, increase income earned on accumulated contributions, be subsidized by the government, reduce its administrative costs, or undertake a combination of these measures to ensure that the scheme is financially viable or sustainable. By contrast, economic sustainability is the capacity of the economy to finance projected liabilities without sacrificing economic growth or other priorities. In this context, the most important macroeconomic variable is the long-term trend of economic growth (Barr and Diamond, 2008).

Sustainability in a DC-based pension system is intricately linked to adequacy of pension benefits. In a DC system—in which contribution obligations are defined but the benefits depend on the accrued balances of contributions, interest earned, extent of preretirement withdrawals, and outcomes of conversion of accumulated balances into a retirement income stream—individual members bear the investment and macroeconomic risks, such as unemployment, relatively stagnant wages, or higher-than-anticipated inflation. 13

The sustainability of Singapore’s pension system may be viewed from a narrow perspective of the CPF system’s fiscal sustainability and from a broader perspective of constructing a pension system that provides adequate real (that is, inflation-adjusted) income throughout old age, thus mitigating longevity, inflation, and survivors’ risks. From the narrow financial perspective, the CPF system is sustainable.

The CPF system is obligated to return only the accumulated balances, with an explicit government guarantee of 2.5 percent nominal interest on CPF balances and an implicit guarantee that the balances and CPF LIFE obligations will be met by the government. 14 These promises are credible given Singapore’s strong public finances, as indicated by its long-term structural fiscal surpluses (IMF, 2012) and the political importance of the CPF system.

The fact that the CPF system is fiscally sustainable is an important achievement, but is not sufficient to ensure sustainability in the broader sense. The primary reasons are an oversimplified organizing principle (mandatory savings using a DC method) and a consequent absence of social risk pooling, requiring individuals to bear macroeconomic and other risks for which they are not necessarily equipped. This oversimplification is accentuated by assigning a predominant role to mortgage finance, by requiring savings to pay for health care expenditures under the CPF system, and by employing an administered rate of return that leads to an implicit tax on CPF wealth.

The CPF Board does not publish the cash balances of its members and other relevant information, so it is not feasible to estimate the average replacement

13 In a DC system, the impact of rapid population aging is felt when net contributions to the system decline and eventually become negative, and when asset prices change in response to the elderly selling physical and financial assets to finance consumption.
14 Individual members benefit from government guarantees of individual retirement accounts, because such guarantees have a market value (Lachance and Mitchell, 2003). Because CPF members do benefit from government guarantees, this benefit to members must be included in a fuller analysis of the implicit tax. However, this more rigorous analysis is not attempted here.
rate—that is, the ratio of preretirement income to retirement income in real terms throughout retirement. It also does not publish replacement rates for members. Nevertheless, there are indications that the inflation-adjusted replacement rate will be inadequate for most CPF members. First, even for a significant proportion of active members, the requirements for setting aside the stipulated Minimum Sum for basic needs are not being met. In 2011, only 45 percent of those 33,644 active members who turned 55 in 2011 had sufficient cash balances to meet the Minimum Sum requirement of S$112,000 (in 2003 prices). Thus, the majority of members did not even meet the stipulated premium for the basic income requirement, let alone being able to maintain their preretirement living standards. The Minimum Sum is set to increase to S$120,000 (in 2003 prices) by July 1, 2015, about twice Singapore’s per capita income.

Second, retirement provision is focused on meeting basic minimum needs in old age. However, it is not absolute but relative poverty that is an increasing concern in affluent societies, including Singapore. Singapore’s pension system does not focus on relative poverty, as evidenced by the absence of social insurance principles, the absence of a budget-financed inflation-adjusted basic pension, and the insistence on levying health insurance and CPF LIFE premiums according to age and gender. The gender discrepancy particularly reduces the adequacy of retirement income for women, who, as a group, live longer and participate in the labor force in much lower numbers.

Reform Options and Their Projected Fiscal Costs

Based on the arguments above, a proposal to introduce social pensions with benefits related to average wage income or to per capita GDP, and financed through the budget, merits consideration to improve the equity and sustainability of Singapore’s pension system. A social pension could help improve equity by providing noncontributory benefits to those who have low lifetime incomes. In Singapore, a social pension would particularly benefit women, who live longer but on average obtain lower income from labor markets and capital.

Social pensions could also improve sustainability in the broader sense by addressing the adequacy of Singapore’s pension system. Because they are paid until death, social pensions better address longevity risks. Because social pension benefits are related to average wages or to per capita income, they also enable beneficiaries to share in future economic growth—which the current mandatory savings-based pension system does not allow.

The remainder of this section presents the estimated fiscal costs of a hypothetical social pension scheme that can potentially address the equity issues discussed above. The assumptions made in this estimation are as follows: GDP is assumed to grow in nominal terms between 5 and 6 percent per year. This growth rate allows for inflation

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15To the extent that a positive relationship exists between income and longevity, social pensions that are paid until an individual’s death could benefit higher-income groups for a longer period. However, this inequity can be partially addressed by income and asset testing of beneficiaries.
of 3 percent a year, and real growth of between 2 and 3 percent. These parameters are consistent with the Singapore government’s macroeconomic goals (Government of Singapore, 2013). Similarly, nominal wages are assumed to grow between 4 and 5 percent, lagging nominal GDP growth, but permitting real wage growth. No means testing using income or assets to qualify for the social pensions are used in the estimation. Social pension benefits are restricted to citizens age 65 and older and are provided on an individual basis. Ideally, because there are economies of scale with respect to family size, the benefit levels for households with more than one elderly person should be adjusted to reflect such economies of scale. However, this adjustment has not been made because of the lack of relevant data on elderly household composition.

Furthermore, the estimation does not have any behavioral foundations; it does not take into account the administrative or compliance costs of a social pension scheme. Although it takes into account the share of elderly citizens (age 65 and older) in the total population, it does not take into account the increasing life expectancy of the beneficiaries. In 2011, the average life expectancy at age 65 was 20 years (Government of Singapore, 2012d), and is expected to increase with advances in medical technology, diagnostics, and treatment. Thus, the simulation presents only the static fiscal costs required to finance the social pension.

The total population ages 65 and older is estimated from United Nations (2010) using the medium variant projections. In 2010, 9.0 percent of the population was 65 or older. This proportion is expected to increase to 23.3 percent by 2030. This projection assumes that the citizen share in total population will remain at 60 percent until 2030.16

Table 12.2 presents the estimated fiscal costs of a hypothetical social pension scheme in Singapore, assuming different benefit levels under two widely used parameters (wages and per capita GDP). Because the benefit levels are proportionate to wages or to per capita GDP, the benefits proposed enable the individual to share in the growth of the economy, which is important for improving the equity of Singapore’s pension system.

The benefit level used (20 percent and 30 percent of median annual wages in Variants A and B, and 15 and 20 percent of per capita GDP in Variants C and D) is based on international experience. For example, Australia’s social pension benefit in 2013 was S$24,799 (equivalent to 32.7 percent of per capita GDP) per year per individual and S$37,382 per year (equivalent to 49.3 percent of per capita GDP)

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16A government report published in January 2013 projected the share of citizens in Singapore’s population to be between 58.3 percent and 62.0 percent in 2020, and between 52.1 percent and 58.4 percent by 2030 (Government of Singapore, 2013). Because the social pension is targeted only at citizens, if their share in the population declines, then the fiscal cost of the scheme will be lower than projected in this chapter. Thus, if the share of citizens in 2030 is assumed to be 55 percent, the fiscal cost of social pensions—assuming a benefit equivalent to 30 percent median annual wage income—will be 2.18 percent with a range of 1.80 to 2.59 percent of GDP in 2030.
TABLE 12.2
Estimated Fiscal Cost of Hypothetical Social Pensions in Singapore (Share of GDP)

<table>
<thead>
<tr>
<th>Year</th>
<th>Variant A 20% of median annual wage income</th>
<th>Variant B 30% of median annual wage income</th>
<th>Variant C 15% of per capita GDP (current prices)</th>
<th>Variant D 20% of per capita GDP (current prices)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>0.78 (0.77–0.78)</td>
<td>1.16 (1.15–1.18)</td>
<td>0.94</td>
<td>1.26</td>
</tr>
<tr>
<td>2015</td>
<td>0.90 (0.86–0.93)</td>
<td>1.34 (1.29–1.40)</td>
<td>1.09</td>
<td>1.51</td>
</tr>
<tr>
<td>2020</td>
<td>1.16 (1.07–1.26)</td>
<td>1.75 (1.60–1.90)</td>
<td>1.42</td>
<td>2.07</td>
</tr>
<tr>
<td>2025</td>
<td>1.47 (1.28–1.67)</td>
<td>2.21 (1.92–2.51)</td>
<td>1.81</td>
<td>2.76</td>
</tr>
<tr>
<td>2030</td>
<td>1.73 (1.43–2.06)</td>
<td>2.60 (2.15–3.09)</td>
<td>2.17</td>
<td>3.46</td>
</tr>
</tbody>
</table>

Note: Figures in parentheses refer to the range for the assumed 4–5 percent nominal wage growth, and the 5–6 percent nominal GDP growth. Because the benefit is indexed to per capita GDP and these estimates are shares of GDP, there is no range for the estimates for Variants C and D.

for a two-member household.\(^\text{17}\) These benefits are subject to income and asset criteria, and are not provided on a universal basis. Additionally, individuals who may not meet the criteria receive partial pensions (Government of Australia, 2013). More conservative benefit levels are used here because access to disaggregated household composition and income data were not available to implement a means test.

The projections indicate that with the rising share of the population age 65 and older, and with increasing wages and incomes, the fiscal cost will increase rapidly between 2012 and 2030. Thus, assuming a benefit level of 30 percent of the median annual wage, the fiscal cost will rise from 1.16 percent of GDP in 2012 to 2.60 percent by 2030. The range of costs projected in the brackets for Variants A and B is due to the different assumptions of the parameters. The range widens over time because of the compounding effects of the two parameters.

It is important to reiterate that these estimates are based on many assumptions, and more rigorous simulation exercises are needed to actuarially project fiscal costs of social pensions; however, the relevant data for such exercises are not available. The exact design of the social pension will have significant implications for the fiscal outlay required to finance it. Eligibility, benefit levels, and the extent to which partial pensions are to be paid are important policy considerations that require rigorous empirical scrutiny.

\(^{17}\)See Government of Australia (2013) for more information. The conversion from Australian dollars to Singapore dollars assumes an exchange rate of 1.3.
How are these proposed fiscal costs to be financed? The government has resisted pressures to increase social expenditure on health care and pensions substantially by arguing that it would have to increase taxes to finance them, which would hurt the country’s growth potential (Government of Singapore, 2012a). As mentioned, Singapore has enjoyed structural fiscal surpluses that averaged 6 percent a year during the past decade (Figure 12.2). This suggests that pension reforms designed to enhance adequacy and equity are not constrained by fiscal capacity or fiscal space.

CONCLUSION

This chapter assesses Singapore’s pension system from the perspective of equity and sustainability, including adequacy of risk mitigation and coverage of the population. Singapore’s pension system has been organized around two main premises: that mandatory savings during the working years, micromanaged by the state, will be sufficient to provide adequate retirement financing, and that public policy should focus on the absolute rather than the relative level of income.

A pension system organized around these two premises faces increasing limitations in equity and sustainability (adequacy), requiring a fundamental rethinking. Parametric changes such as adjusting the contribution rate or the wage ceiling, or the design of the payout phase of the pension program, will not significantly improve equity or sustainability. This chapter argues that social risk-pooling arrangements through social insurance and through a proposed noncontributory budget-financed social pension, which is based on relative rather than absolute income levels, have become necessary and merit consideration.
The chapter suggests several specific measures, including changing payout-phase arrangements, ending the administered interest rate on CPF balances, and introducing social pensions to enhance the equity and sustainability of Singapore’s pension system.

The analysis suggests that structural budget surpluses will help finance pension reforms along the lines discussed above without serious reductions in expenditure on other government priorities, such as human resource development, health, and infrastructure. The main constraint on pension reforms is not fiscal, economic, institutional, or capacity related—it is the need to assign a higher priority to reforming existing pensions.

REFERENCES


CHAPTER 13

Australian Pensions: An Equitable and Sustainable Arrangement in a Postcrisis World?

ROSS CLARE

INTRODUCTION

Australia has a classic three-pillar retirement system, comprising

- A government-financed public pension, called the Age Pension;
- A mandatory contribution made by employers, generally to an individual account defined-contribution plan; and
- Voluntary contributions to pensions, primarily to defined-contribution plans, with a substantial proportion of such contributions attracting tax concessions.

This chapter is structured as follows. The next section describes the current structure of the public and private pension systems and their past evolution. The following two sections then set out the challenges facing the Australian retirement system and present recent reforms and reform options. The chapter specifically looks at the issues of sustainability and equity. The government and community are strongly concerned that the assistance provided to retirement income should be allocated fairly according to need. Australia also has a long tradition of support for what is colloquially called a “fair go.” In the context of pensions, this means that no group should face barriers to participation in the retirement income system.

DESCRIPTION OF THE PENSION SYSTEM IN AUSTRALIA

Current Structure

Public pension system

In contrast to most Organization for Economic Cooperation and Development (OECD) countries, Australia has adopted a public income protection model built around a comprehensive safety net focused on providing point-in-time income support at a flat rate to those most at risk of falling below an acceptable standard of living.
The Age Pension, like other government income transfers in Australia, does not require any history of social security contributions by the person or any history of work; receipt is determined by reaching the eligibility age, being resident in Australia for 10 years with 5 of those years being continuous, and qualifying under the applicable asset and income tests. The Age Pension is currently payable at age 65 but will gradually increase to age 67 by 2024.

Payments are ongoing provided individuals continue to meet eligibility conditions. The average Age Pension payment tends to rise with age as older individuals run down their private retirement savings and their private incomes fall. Older age cohorts also tend to have entered retirement with lower savings compared with those more recently entering retirement.

The maximum annual benefit provided by the Age Pension as of September 1, 2012, was $A 20,142 for a single person and $A 30,368 for a couple. The Age Pension is adjusted on a regular basis by the greater of the movement in prices as measured by the consumer price index or in total average weekly earnings for males. Thus, it is adjusted to keep pace with increases in the general standard of living in the Australian community. Although both the consumer price index and the average earnings measure have limitations as the basis for adjusting payments to retirees, most alternative measures that have been suggested deliver similar outcomes in the medium to longer terms.

Special adjustments to the payment rate have also been made from time to time, to reflect developments such as the impact of the introduction of carbon pricing or to otherwise deliver an increase greater than the general increase in prices or wages.

The Age Pension is part of taxable income for those receiving it, but because of a variety of rebates, those receiving the maximum benefit generally do not pay any income tax, and as a result, many recipients do not have to file a tax return. As noted above, individuals and couples with income and assets in retirement greater than the applicable thresholds receive a reduced (or no) Age Pension. The thresholds and means test are set such that most persons 65 and older receive at least a partial Age Pension. However, persons at the top of the income distribution because of employment or investment income and assets do not receive any benefit from the Age Pension.

Currently, 75 percent of Australians age 65 and older rely on a full or partial Age Pension for financial support in retirement (Table 13.1).

**Private pension system**

Occupational superannuation, as private pensions are termed in Australia, first emerged in the mid-19th century. The term superannuation was in common usage in the early 19th century to refer to the pension received after retirement. Although it is not entirely clear why the term is used in Australia instead of

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1 At the end of 2012, 1 U.S. dollar was equal to 0.932 Australian dollars.
TABLE 13.1

Number of Pensioners and Aggregate Government Expenditures, 2011

<table>
<thead>
<tr>
<th>Type</th>
<th>Age Pensioners</th>
<th>Number of People</th>
<th>Payments (A$ million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full Individual</td>
<td>622,846</td>
<td>12,126</td>
<td></td>
</tr>
<tr>
<td>Full Couple</td>
<td>671,010</td>
<td>9,841</td>
<td></td>
</tr>
<tr>
<td>Partial Individual</td>
<td>308,462</td>
<td>4,804</td>
<td></td>
</tr>
<tr>
<td>Partial Couple</td>
<td>556,669</td>
<td>6,534</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>2,158,987</td>
<td>33,305</td>
<td></td>
</tr>
<tr>
<td>War veteran pensioners age 65 and older</td>
<td>228,510</td>
<td>4,112</td>
<td></td>
</tr>
<tr>
<td>Still working</td>
<td>166,029</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self funded</td>
<td>629,901</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Memorandum:**

- Population ages 65 and older: 3,183,427
- Retirees ages 55–64: 1,361,689


Private pension, it does provide a clear distinction from the government-provided Age Pension. It also is more consistent with the availability of lump sum benefits in Australia, which are taken by a substantial number of retirees.

The coverage of the private system is very broad and uses wide definitions of employer and employee. However, there are some exceptions, chiefly those earning less than $A 450 a calendar month and part-time employees ages 18 years and younger. Moreover, the Superannuation Guarantee does not apply to the truly self-employed (other than to owner-managers who receive wages and technically are employees of companies they control).

Employees are now generally able to choose the fund into which contributions are made by their employers, but many employees have contributions made to the fund that their employer has selected as the default fund or that is specified as a default fund in a collective labor agreement. There are hundreds of corporate, retail, industry, and public sector funds, and nearly 500,000 small Self-Managed Superannuation Funds.

The number of Self-Managed Superannuation Funds has grown, while the numbers of the other types of funds have decreased. Self-Managed Superannuation Funds, which have no close equivalent in any other jurisdiction, are funds for which each member is also a trustee. These funds generally consist of members of a family, have fewer than five members each, and differ from the various individually managed accounts in other countries in that they are private trust arrangements that do not require that a financial institution be involved as a provider. They tend to be used by those with higher account balances and by those who want to exercise personal control over their pension funds.

About 30 percent of the self-employed voluntarily make contributions, partly driven by the available tax concessions. Some self-employed persons have private pensions because they were employees in previous periods. Some contractors who might be regarded as self-employed by other legal provisions are also covered in the compulsory system through the extended definition of employee.

In May 2010, the Australian Treasurer announced that compulsory employer pension contributions were to increase from at least 9 percent, which they were
at the time, to 12 percent of wages by July 2019. The gradual increase in mandatory Superannuation Guarantee contributions will start with 0.25 percentage point in the 2013/14 and 2014/15 financial years. For each of the subsequent five years, the Superannuation Guarantee contribution rate will increase by 0.5 percentage point until it reaches 12 percent in July 2019.

Along with mandatory contributions, voluntary contributions can be made from a number of sources:

- Employers (usually large companies and governments) that choose to pay a higher rate than the law requires for mandatory pensions.
- Members who make pretax contributions from their salary packages. The ceiling on tax-preferred contributions, which include the mandatory contribution, has fallen significantly in recent years to $A 25,000 a year. Salary sacrifice contributions are made by about 25 percent of upper income earners but by fewer than 5 percent of low income earners.
- Members who make after-tax contributions, which are subject to a contribution cap of $A 150,000 a year or $A 450,000 in a three-year period.
- The government co-contribution, which matches after-tax contributions up to an amount that was $A 500 (a year for low income earners in 2012).

The taxation structure for pensions is relatively complicated, but in broad terms, most members of defined-contribution funds are taxed concessional (at a flat rate of 15 percent) on both employer and other allowed pretax contributions and the investment earnings in a fund. Benefits, both lump sum and in income-stream form, generally are tax free when received at age 60 and older.\(^2\)

About 10 percent of employees are in private defined-benefit plans, but most such plans are now closed to new members. Defined-benefit plans also are largely restricted in practice to public sector employees although some large companies have them. In the long term, almost all Australians will have defined-contribution pensions. However, at least some defined-benefit pensioners will linger in the system for many decades to come.

Also important for the living standards of retirees are a high level of home ownership among retirees and government funding on a means-tested basis of residential elderly care and some other elderly care.

### Historical Developments

#### Public pension system

The basic structure of the Age Pension has not changed significantly since 2000. However, in the 2009/10 budget, the Australian government announced increases to Age Pension benefits, particularly for single persons, following an inquiry process that concluded that such payments should be increased.

\(^2\)Thus, with \(T\) representing taxed contributions, \(t\) representing concessional taxed investment income and capital gains of the pension institutions, and \(E\) representing benefits exempt from tax, this system can be characterized as \(ttE\). By comparison, the U.S. tax arrangement for most types of is \(EET\).
These increases were introduced along with a suite of budget saving measures designed to offset their long-term costs. The package of changes was projected to be budget neutral by 2021/22 and through to 2049/50 (Gruen and Soding, 2011).

The specific changes that decreased Age Pension expenditures were the following:

- A gradual increase in the Age Pension eligibility age to 67 years by 2024;
- An increase in the withdrawal rate of Age Pension in the income component of the means test; after the change, an additional dollar of private income reduces the Age Pension payment by 50 cents, rather than the previous 40 cents; and
- Closure of a complicated and seldom-used pension bonus scheme under which a higher Age Pension was paid to individuals who met both eligibility requirements and who delayed receiving the Age Pension.

Figure 13.1 illustrates that during the last 10 years, the proportion of the Australian population receiving the full Age Pension has decreased. This is most marked for those between ages 65 and 70 because this cohort has benefited from mandatory private pension contributions for a longer period of their working lives than those who retired 10 years earlier.

Although the proportion receiving a partial Age Pension has risen only marginally, the proportion of self-funded retirees has increased to a greater extent. Despite this encouraging trend for both individuals and the government, the proportion of older Australians on the Age Pension remains high, reaching more than 80 percent of the population by age 75.

Figure 13.1  Proportion of the Population Receiving the Age Pension and Self-Funded Retirees, 2000 and 2011 (Percent)

Source: Department of Human Services (various years).
**Private pension system**

From its earliest days in Australia (with the establishment of a pension fund for its staff by the Bank of Australasia in October 1842) through the 1940s, pensions were only available to a select group of mostly male salaried employees in the public sector and at some large companies. Employer-supported pensions for staff such as manual workers were less common and tended to be less generous, with smaller benefits and smaller employer contributions in plans that also generally were noncompulsory.

By 1974, 32.2 percent of wage and salary earners were covered by private pensions, made up of 40.8 percent of male wage and salary earners but only 16.5 percent of females. Most pension assets were in defined-benefit plans (ABS, 1995).

In 1983, the newly elected Labor Government expressed support for the principles of employee pensions and initiated discussions with the Australian Council of Trade Unions on the possibility of broadening access to pensions as part of the government’s Prices and Incomes Accord with the trade unions.

The process of making employee pensions a virtually universal entitlement began in September 1985 when, with the support of the government, the Australian Council of Trade Unions sought a 3 percent pension contribution to be paid by employers to industry pension funds specified in relevant industrial labor agreements, which set the minimum wages and conditions for many but not all employees in Australia (APRA, 2007).

This submission was supported by arguments addressing the following:

- Implications arising from the aging of the population, including the workforce;
- Effects of the early retirement trend;
- Existing dependence on the government-provided Age Pension and the projected significant increase in the dependence of the elderly on the working population leading to a sharp rise of Age Pension costs; and
- The fact that a large percentage of the workforce was not covered by existing pension plans and that wide disparities existed in coverage according to sex, industry, occupation, and income levels. In particular, it was argued that women, manual workers, and those in the lower income level were less adequately covered than others.

Arguably, the final point was the most compelling factor for the parties to the proposal, which included the Australian government in office at the time.

As new labor agreements were progressively negotiated according to the guidelines in the national wage case decision, pension coverage increased rapidly. In the four years after the introduction of employer contributions linked to labor agreements, total coverage, which includes the public sector for which rates of coverage were already high, grew from about 40 percent of employees to 79 percent. In the private sector, coverage grew from 32 percent in 1987 to 68 percent in 1991 (ABS, 1995).

This increase in coverage was a major achievement for collectively bargained pensions, but even more was needed to further increase coverage and to increase
the rate of contributions. Accordingly, the government announced in the 1991/92 budget that it would introduce a mandatory pension system through implementation of the Superannuation Guarantee. The Superannuation Guarantee system uses the taxation power of the Australian government to provide a powerful incentive for employers to make the required pension contributions. The guarantee part of the Superannuation Guarantee refers to contributions being made rather than to a guarantee of investment earnings or eventual retirement income.

The Superannuation Guarantee system went into effect on July 1, 1992, starting at a minimum contribution rate of 3 percent. A schedule of future increases in the compulsory contributions rate was also set, with a contribution rate for all employees of 9 percent of earnings beginning July 1, 2002. Employers already making contributions meeting the Superannuation Guarantee requirements were not required to make additional contributions.

With respect to the taxation of private pensions, although the basic structure has remained in place since 1988, numerous changes have been made to more detailed taxation settings. Some of these have been put forward as improving the equity of the tax concessions that are provided.

One statistic that received attention in public debate in Australia was that 5 percent of individuals accounted for 37 percent of tax-preferenced pension contributions. However, that figure, calculated by the Treasury, related to 2005/06, when pension policy settings were significantly different from those today. For instance, in 2005/06 a maximum deductible contribution limit of $A 100,587 (a year) applied for each employee age 50 and older, and for the self-employed age 50 and older. For those ages 35 to 49, the figure was $A 40,560 (a year).

Tax-preferenced contributions include employer contributions (including contributions made under a salary sacrifice arrangement in which wages are traded off for extra contributions) and personal contributions claimed as tax deductions by self-employed persons.

However, another important factor has been the desire of successive governments to generate substantial tax revenue to increase the budget surplus or to decrease a budget deficit. A number of such changes have been announced with little or no consultation. Significant compliance and administration costs have also featured in numerous cases.

**Income Streams in Retirement**

In an ideal world, the objective of pensions would be to provide an income stream for the whole of retirement. However, there are a number of reasons why it is difficult to structure the Australian system around regular, reliable pension payments, including the following:

- When pension contributions began to be included in labor agreements in 1986 as deferred pay (in lieu of a possible productivity wage increase) it was promoted to members as an addition to the Age Pension. The Superannuation
Guarantee pension has increased the value of contributions, but the message has not changed—members are under the impression that the private pension account balance is their own money and they expect payment flexibility.

- The government allows all members age 60 and older to retire and draw a tax-free lump sum or an annuity. The majority of older Australians also are subject to low or zero personal income tax rates given their low average incomes and various tax rebates. As a result, the incentive for individuals to leave money in the system during retirement is limited.

- Maximum withdrawal ceilings on account-based, defined-contribution pensions have been eliminated, so no one is forced to draw benefits over time.

- Members can buy lifetime annuities from the private sector (albeit from a small number of suppliers), but fewer than 100 a year are sold. Consumer research indicates that most Australians are unrealistic about the pricing of an indexed lifetime annuity and expect much more than fair value. Without compulsion or incentives, most members will not buy these products, in which case they may not be covered against the risk of outliving their savings.

- Many members retire with low benefits and they appear comfortable putting the money in interest-bearing bank accounts rather than leaving it in the pension fund. This may be influenced by their perceptions of bank safety or by their short time horizons under which they do not value higher (but uncertain) returns. They may also value instant access to their funds.

- Many people today retire with some debt (including mortgages) or the need to make home repairs or purchase consumer durables, and taking a lump sum pension to clear all such expenses or debts upon retirement is a rational decision.

- About one-third of total pension savings and about half of postretirement pension balances are held in Self-Managed Superannuation Funds that have fewer than five members and for which each member is also a trustee of the fund. Such fund members generally value control highly and are wary of purchasing an income stream from a third party such as a life insurance company or managed fund.

The combination of these factors has made the provision of income streams, particularly those that would protect members from longevity risk, difficult. In addition, transitional arrangements, especially if compulsory, can be difficult because of the plans made by those approaching retirement.

However, the evidence indicates that many Australians do take an income stream from their pension in retirement, albeit one that is account based and to which the individual has complete access. This is particularly so when larger amounts are involved.

Among males ages 60–64, 70 percent of those who have recently retired have pension accounts compared with 90 percent of those who have not yet retired. The average balance is also larger for the former than for the latter, which suggests
that those with lower balances are more likely to cash out and invest (or spend) elsewhere. For women, the drop in coverage is greater, being around 30 percentage points. Again, the average balance for those retaining retirement savings in a superannuation pension, at about $A 255,000, is higher than for those in the same age group who have not retired.

**FUTURE CHALLENGES**

Many factors will affect the long-term sustainability of the Age Pension, but the most significant are

- The aging of the population and associated increase in the dependency ratio;
- Age Pension design; and
- Growth in private savings and private pensions.

Each of these can be influenced to some extent by changing relevant policies.

**The Aging of the Population**

The projected increases in the proportion of the population ages 65 years and older, and in life expectancy, will increase the number of individuals potentially eligible for the Age Pension and the period for which they might be eligible to receive it.

However, the aging of Australia’s population structure is not occurring particularly rapidly compared with many advanced economies. Fertility rates have increased in recent years and immigration policies are designed to favor immigrants who, on average, are younger than the general population. Changes to immigration policies and measures designed to influence fertility rates can affect the rate at which the population structure ages, but generally the impact is relatively low.

Although Australia’s total population is projected to continue to grow, annual population growth rates are projected to slow gradually, from 2.1 percent in 2008/09 to 0.9 percent in 2049/50. Australia’s population is projected to grow from about 22 million people in 2010 to 35.9 million people in 2050 (Treasurer of the Commonwealth of Australia, 2010).

Average Australian mortality rates have also fallen significantly, with life expectancies rising for both men and women. These changes have added to population growth and the proportion of older people in the Australian population. As a result, the number of Australians ages 65 and older is projected to grow from about 3 million in 2010 to 8.1 million in 2050. Consequently, the number of people eligible for the Age Pension is projected to increase by about 150 percent by 2049/50.

Another consequence of these demographic changes is that the number of those ages 65 and older relative to the working-age population will continue to increase. This increasing dependency ratio could potentially increase the tax
burden on the working-age population to support existing government programs, including the Age Pension. However, the tax burden will be influenced, in part, by growth in the real income of Australians and its distribution between working-age and older Australians. For instance, if the distribution remains constant, the incomes of those in the labor force would be expected to increase.

The rate of GDP growth in Australia has been relatively strong by the standards of advanced economies, partly as the result of good economic management. However, population growth has assisted in achieving this economic growth, as has growth in national savings and investment driven by the boost to household savings from mandatory contributions to private pensions (Treasurer of the Commonwealth of Australia, 2010).

Design of the Age Pension

The fiscal sustainability of the Age Pension system is also aided by a number of its basic design features, particularly the modest level of the maximum benefit, which is defined in absolute terms rather than being related to the earnings of individuals while they were in the paid labor force. Another key design feature is that no benefit, discounted or otherwise, is possible before retirement age.

The means test, through its asset- and income-testing elements, aims to provide the greatest benefits to those most in need while restricting the access of those with higher levels of income and wealth. At the same time, the means test has thresholds and taper rates for withdrawal of benefits that are designed to provide incentives for the accumulation of private retirement savings and self provision of retirement income.

The means test also differentiates between homeowners and those who are not homeowners, so that the family home is not assessed as an asset. Wage income is treated differently from investment income. In addition, income is considered at a set rate relative to assets for some financial, and there are special arrangements for pension income streams received in retirement. A joint means test is applied to couples, which includes de facto spouses and same-sex partners.

Projected Age Pension Expenditure

Australia is unusual in that the future financial impact of programs such as the Age Pension is required to be regularly assessed in what is known as the Intergenerational Report (IGR). The IGR came to life as a key requirement of the 1998 Charter of Budget Honesty Act. The Charter requires an IGR to assess the long-term sustainability of policies during the 40 years following the release of the report, including the impacts of demographic change. The IGR has played a major role in raising community awareness of long-term fiscal challenges and, in so doing, placed greater focus on government decisions with long-term consequences.

Not surprisingly, the various IGRs indicate that population aging will contribute to pressure on government spending and fiscal sustainability. The Australian Treasury projects total government spending to increase to 27.1 percent of GDP
in 2049/50, about 4¾ percentage points higher than its projected low point in 2015/16. In today’s terms, that is the equivalent of adding about $A 60 billion a year to government spending.

About two-thirds of the projected increase in spending for the next 40 years is related to health expenditure across all age groups, reflecting pressures from aging, increasing community expectations, and the funding of new technologies.

Growth in spending on age-related pensions and elderly care is also significant, both as a proportion of GDP and in real spending per person. Currently, about a quarter of government spending is directed to health, age-related pensions, and elderly care. The IGR projects that government spending on these functions will increase significantly during the next 40 years, pushing their share of spending to almost one-half.

As a proportion of GDP, spending on health is projected to rise from 4.0 percent to 7.1 percent. Elderly care expenditures are projected to rise from 0.8 percent of GDP to 1.8 percent in 2049/50. Expenditure on age-related pensions is projected to rise from 2.7 percent to 3.9 percent of GDP (Figure 13.2).

Factors affecting the projections of age-related pension spending include the following:

- The proportion of pensioners receiving a full Age Pension is expected to decline because of the increased value of individuals’ mandatory pensions and other private assets and income.
- The proportion of people with a partial Age Pension is projected to increase significantly while the proportion of the eligible age group not receiving any Age Pension is projected to rise slightly.

**Figure 13.2** Projected Expenditure by Major Category (Percent of GDP)

![Projected Expenditure by Major Category](source: Treasury of the Commonwealth of Australia, 2010.)
• Policies will be changed to reduce expenditures, such as raising the eligibility age for the Age Pension from 65 to 67 and increasing the withdrawal rate in the income test for the Age Pension from 40 cents on the dollar of private income to 50 cents. When the next IGR is prepared in 2015, it can be expected to take into account the increase in compulsory pension contributions from 9 percent to 12 percent. This will further moderate the increase in age-related pension spending, particularly toward the end of the projection period.

Public debate in Australia about the sustainability and equity of government assistance for the aged in Australia has been considerable. However, much of this debate has been based on assertion rather than analysis. For instance, the aging of Australia’s population structure is not sufficient to come to the conclusion that current tax concessions for superannuation are unsustainable.

The projected increase in direct government expenditure on retirement income is not negligible, but it is relatively modest in comparison with many countries: even by the early 2050s, it is projected to remain below the starting point for just about all OECD countries in 2010.

**Overall Sustainability of the Retirement Income System**

**Factoring in Tax Concessions for Private Pensions**

Australia has a fairly large stock of private pension assets relative to GDP compared with most other countries, reflecting the fact that it is the fourth largest private pensions market as measured by assets. Moreover, given that the system is still maturing (unlike systems in Japan, the United Kingdom, and the United States), the ratio of concessionally taxed pension contributions to national income is among the highest in the world. This ratio will increase further with the gradual increase in the compulsory contribution rate to 12 percent of wages by 2019.

Accordingly, the amount of tax assistance provided to private pensions in Australia also needs to be taken into account when assessing the ongoing sustainability of government assistance for retirement incomes.

The *Tax Expenditures Statement* published each January by the Australian Treasury provides a starting point for assessing the cost to the government budget of the tax concessions (Treasury of the Commonwealth of Australia, 2013).

The headline figure in the *Tax Expenditures Statement* claims that the revenue the government forgoes as a result of tax concessions for private pensions was about $A 31.8 billion in 2012, and will grow to $A 44.8 billion in 2015/16. The major components of these claimed tax expenditures comprise revenue of $A 17.1 billion forgone on private pension fund investment earnings in 2012/13 and revenue forgone on employer contributions of $A 13.2 billion. The size of these figures is impressive but they do not actually reflect the overall effect of private pensions on taxation receipts.

The *Tax Expenditures Statement* estimates equal the revenue that would have been collected if all private pension contributions and income currently contributed or earned had been taxed at the full marginal rate of every member, less the tax revenue
actually collected. Among a number of conceptual problems, these estimates do not take account of any of the long-term effects if higher tax rates applied to private pensions. For instance, future retirement balances and the associated tax base would be much smaller if higher taxation applied along the way (Clare, 2012b).

Other problems with the Tax Expenditures Statement estimates for private pensions include the following:

- In the future, private pensions will aid the government budget, including through a decrease in Age Pension expenditures.
- The benchmark assumes that individuals’ saving and consumption decisions would not change if the tax arrangements were changed. In effect, it assumes that people would continue to place what they had been putting into private pensions into nonconcessionally taxed investments such as bank accounts.
- The Tax Expenditures Statement benchmark assumes that capital gains would be taxed at full marginal personal income tax rates, without the 50 percent deduction that applies to all other capital gains received by individuals.
- High returns associated with long-term managed savings in the form of private pensions are seen as increasing the cost of the tax concessions rather than reducing future claims on the government for retirement income support through the Age Pension.

In total, the amount of government assistance to retirement incomes from Age Pensions and tax concessions for private pensions is unlikely to exceed 6 percent of GDP by 2050 and could be closer to 5.5 percent. By international standards this is a relatively low figure, below the starting point for most other advanced economies and well below the projected level for nearly all other advanced economies and even many developing countries.

**REFORMS AND REFORM OPTIONS**

**Addressing the Challenges: Government Priorities**

*Specific changes to the tax treatment of private pensions*

Every Australian government budget in recent years has made changes to the tax treatment of private pensions, to subsidies for personal superannuation contributions, and to unclaimed monies provisions.

Frequent reference has been made to improving the equity of the overall retirement system, but it is likely that the desire to bring in additional revenue and to reduce government expenditures has been the dominating motivation.

Successive Australian government budgets since 2009/10 have, through a combination of tax changes and reduced expenditure on private pensions, improved the budgetary position of the government. In summary, these changes have involved the following:

- A combination of both temporary and permanent changes have been made to the co-contribution, which is a payment made by the government to the
accounts of qualifying low-income individuals who made personal contributions to their private pensions. This has led to a halving of annual expenditure on this measure from the more than $A 1 billion a year that it had previously been.

- Measures have been taken that led to account balances being paid to the Australian Taxation Office when an account is inactive and the account balance is small or the pension fund had been unable to contact the account holder. Additional revenue was raised by increasing the threshold below which accounts are treated as unclaimed from $A 200 to $A 2,000.
- Reductions have been made to the caps for contributions that qualify for tax concessions.
- Scheduled increases to contribution caps based on indexation arrangements designed to maintain their value in real terms have been postponed.
- A proposed increase in the contribution cap for those ages 50 and older has been postponed.
- The tax rate on contributions made for individuals with taxable income exceeding $A 300,000 a year has been increased to 30 percent. These proposals have become law or are in the process of being legislated.

**New assistance for low income earners**

The government has also enacted legislation to provide a new co-contribution of up to $A 500 annually for eligible low income earners beginning in the 2012/13 income tax year. The matching contribution will be 15 percent of the eligible tax-preferred contributions (including employer contributions) made by or for individuals with adjusted taxable incomes of up to $A 37,000. Individuals will also need to meet a test showing that at least 10 percent of their income is from employment or business sources and that they are residents of Australia or New Zealand. Individuals also can benefit from the co-contribution in regard to personal contributions that are not tax preferred. By its very nature, the new matching contribution will only provide assistance to low income earners who are subject to either the zero or 15 percent tax rate.

The phased increase in the rate of compulsory contributions to 12 percent will have its greatest impact on low and middle income earners, given that those with higher incomes commonly already receive contributions in excess of 9 percent of wages and will adjust to an increase in compulsory contributions.

**Net impact of the changes**

Table 13.2 compares the distribution of government tax relief and contribution assistance for pensions in 2009/10 for employees on the basis of current policy settings and what it would have been if a 12 percent mandatory contribution rate, the low-income matching contribution payment, and the current rate of co-contribution had all applied in that year. Although it will be some years before all the measures are fully in place, this approach illustrates the eventual impact on the distribution of government assistance by income level.
Addressing the Real Equity Challenge

The real issue in regard to equity is that too many Australians have too little in retirement savings rather than too much. Much public debate in Australia has focused on the top 1 percent or 5 percent of income earners, with little or no debate on how to enhance outcomes for the other 99 percent or 95 percent.

If excessive government assistance is a problem, it is restricted to a very small number of individuals, particularly since the introduction of progressively tighter caps on both tax-preferred and non-tax-preferred contributions. When properly measured, total government assistance for retirement income in the form of both the Age Pension and tax concessions for superannuation is broadly even across the entire income distribution.

After the recent contribution cap and rebate changes to private pensions, 87.3 percent of the tax concessions for pensions will flow to individuals subject to less than the top marginal tax rate, up from the approximately 85 percent that applied before the changes. The share of total concessions flowing to individuals subject to the top marginal tax rate was about 50 percent in 2007/08, with the reduction in the share since then resulting from the introduction of contribution caps and higher tax rates on the contributions of certain upper income earners together with the top marginal rate applying to a smaller proportion of taxpayers.

Moreover, voluntary contributions have remained flat in the years before 2013 in response to both tax changes and investment return developments. In particular, contribution caps and other changes to pensions are limiting the amount of voluntary salary sacrifice contributions, including by individuals seeking to catch up on contributions late in their careers. Salary sacrifice contributions are made when an individual trades off part of his or her salary for additional employer contributions.

Longitudinal data indicate that a significant proportion of the population has higher incomes (with associated capacity to make higher contributions) for a
relatively limited portion of their working careers. A higher contribution cap generally, or at least for those ages 50 and older, would assist those who need to catch up and have the capacity to do so.

**The $A 450 a month threshold for the superannuation guarantee mandatory contributions**

Although there may have been a rationale for the income threshold below which contributions are not required when the mandatory Superannuation Guarantee pension system was first introduced in 1992, it would make sense to remove it now given that nearly all employees have pension accounts and processes for making contributions are now more efficient. If the threshold were removed, about 250,000 individuals, the majority women, would benefit from higher eventual retirement savings. The cost to both employers and to the Australian budget for removing the threshold would be very modest.

**The self-employed**

Nearly 10 percent of the labor force is self-employed. Although tax concessions have led to some self-employed saving for retirement through pensions, average balances and coverage have remained relatively low. About 29 percent of the self-employed have no pension savings, and this is a more common situation for males than females. A strong case can be made for extending compulsory pensions to include the self-employed.

**Individuals on paid parental leave**

Paid parental leave is considered by the government to be equivalent to wages for the purposes of income tax. Consistent with this, it would be appropriate for the Superannuation Guarantee mandatory pension contributions to apply to such payments, which it does not currently do.

One of the reasons that women’s average pension balances are lower than those of men is time out of the paid workforce for parental reasons. Paying Superannuation Guarantee mandatory contributions on parental leave payments would help reduce this difference in entitlements. The effects of compound interest on those pension contributions would also be very favorable given that it is mostly women in their twenties and thirties who take parental leave.

The cost to the Australian government budget would be slightly more than $A 20 million a year.

**Indigenous Australians**

Indigenous Australians have lower coverage and lower balances in the superannuation schemes, on average than the general population, again largely related to differences in paid labor force experience. Pension coverage for indigenous Australians is about 70 percent for men and 60 percent for women, compared with rates of 85 percent for men and 80 percent for women for the population more
TABLE 13.3
Pension Coverage and Pension Holdings of Aboriginal and Torres Strait Islanders
(Men and women who were not yet retired, 2006 and 2010)

<table>
<thead>
<tr>
<th></th>
<th>2006</th>
<th></th>
<th>2010</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Percent with Pensions</td>
<td>Pension Balances of Those with Superannuation (SA)</td>
<td>Percent with Pensions</td>
<td>Pension Balances of Those with Superannuation (SA)</td>
</tr>
<tr>
<td></td>
<td>Mean</td>
<td>Median</td>
<td>Mean</td>
<td>Median</td>
</tr>
<tr>
<td>Men</td>
<td>68.3</td>
<td>49,589</td>
<td>9,000</td>
<td>70.7</td>
</tr>
<tr>
<td>Women</td>
<td>52.1</td>
<td>42,109</td>
<td>10,000</td>
<td>60.6</td>
</tr>
<tr>
<td>Persons</td>
<td>59.5</td>
<td>46,069</td>
<td>10,000</td>
<td>65.3</td>
</tr>
</tbody>
</table>

Source: Clare (2012a).
Note: Population-weighted results. Not enough cases to break down by age.

generally. Average (mean) balances are also lower than for the equivalent Australian population as a whole (Table 13.3).

Increases in coverage and average pension balances of indigenous Australians will clearly be associated with improvements in involvement in paid work and in wages. Labor market measures rather than pension policies drive labor market outcomes.

However, current pension arrangements and administrative requirements do not always mesh well with the circumstances and needs of indigenous Australians, particularly those in remote areas who may have difficulty in communicating with the administrators of their pension funds and in claiming benefits or identifying lost accounts.

There is scope for the pension industry and the regulators to work toward a regulatory framework and administrative arrangements that can better cope with the special needs of indigenous Australians. Such arrangements also would be likely to benefit many other Australians.

CONCLUSION

The Australian pension system is not without its shortcomings. Among other things, it is

- Too complex, particularly with regard to the taxation of contributions and fund earnings;
- Not yet mature enough to deliver a comfortable standard of living for most people in retirement; and
- Not dealing well with the financial consequences of longevity for the large majority of members who are in defined-contribution schemes.

However, compared with systems in most other countries, it is

- Sustainable, in that the burden on governments, employers, and individuals are manageable both now and in the future;
- Comprehensive, in that all Australians benefit from an Age Pension from the government that keeps individuals from poverty in retirement, and with
near universal coverage of private pensions of employees and substantial coverage of the self-employed;

- Equitable, in that when all the elements of the system are looked at together, the amount of government assistance is broadly comparable across the income distribution; and

- Helping to strengthen the financial system, in that assets in the pension system are invested in the real economy rather in notional securities issued by a central government.

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CHAPTER 14

Emerging Asia’s Public Pension Systems: Challenges and Reform Efforts

DONGHYUN PARK AND GEMMA ESTRADA

INTRODUCTION

Providing economic security for the elderly may well be the single biggest social and economic challenge facing developing Asia (henceforth Asia) in the 21st century. The growing importance of old-age income support is primarily due to a seismic demographic transition that is fundamentally reshaping Asia’s age profile. A young continent reaping the demographic dividend of a large youthful workforce is giving way to a graying continent where the ratio of retirees to workers is on the rise. In contrast to advanced economies, most Asian countries do not yet have mature, well-functioning pension systems. As a result, they are ill prepared to provide economic security for the large number of retirees who loom on the horizon. This chapter reviews the public pension systems of eight countries in East and Southeast Asia—China, Indonesia, the Republic of Korea, Malaysia, the Philippines, Singapore, Thailand, and Vietnam—that encompass a wide range of income and development levels. The demographic transition toward older populations is much more advanced in these two sub-regions than in South Asia.

The demographic trends of the eight countries as a whole resoundingly confirm the conventional wisdom of a rapidly aging Asia. All eight countries are experiencing secular increases in the proportion of the elderly relative to the working-age population (Figure 14.1) and total population (Figure 14.2). It is evident that the entire region will have a drastically different, much grayer demographic profile by 2050. As in the advanced economies, Asia’s demographic transition is driven by falling fertility and rising life expectancy. A constellation of economic and social factors, such as improved female education and better medical care, is inducing Asians to have fewer children and enabling them to live longer. Other demographic indicators also point unequivocally toward a graying continent (Table 14.1). The median age of all the countries except Malaysia and the Philippines will exceed the world average by 2050. Furthermore, life expectancy at age 60 is already fairly high, and by 2050 fertility rates will fall below the levels required for a stable population.
In addition to population aging, a number of other factors also point to an urgent need to strengthen old-age support in Asia. In particular, the weakening of informal, family-based, old-age support mechanisms suggests the need for a greater role for formal pension systems throughout the region. Asians have traditionally relied upon their children to take care of their material needs in their old age. The family network was, in effect, Asia’s pension system, especially in rural environments where extended families of three generations often lived together.
under one roof and younger family members supported older family members. However, the far-reaching social changes that accompanied the region’s economic progress have given rise to smaller nuclear families that are less conducive to intrafamily support. Such changes include rapid urbanization (Figure 14.3) and the declining relative importance of agriculture in the economy. In short, urbanization, industrialization, and sociocultural changes are creating a vacuum in Asia’s old-age support, a vacuum that must be filled by formal pension systems.

Globalization and globalization-related labor market developments provide further rationale for strengthening Asia’s public pension systems. Although Asia has reaped enormous benefits from globalization, it is not immune from the structural dislocations it wreaks. Globalization produces both winners and losers, and increases the sense of economic and social insecurity. Well-functioning social protection systems, including pension systems, can ease such insecurity and thereby promote public support for globalization. The competitive pressures unleashed by globalization are forcing firms to reduce labor costs. As a result, workers are more likely to lose their jobs and move from one job to another. In Asia, workers’ loss of job security caused by globalization is compounded by large numbers of workers in the informal sector (Figure 14.4). Those workers are

### TABLE 14.1
Demographic Indicators of Selected Asian Countries

<table>
<thead>
<tr>
<th>Country</th>
<th>Total Population (million)</th>
<th>Average Annual Rate of Change of Population (percent)</th>
<th>Total Fertility Rate</th>
<th>Median Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>World</td>
<td>6,895.9</td>
<td>9,306.1</td>
<td>1.2</td>
<td>0.4</td>
</tr>
<tr>
<td>China</td>
<td>1,341.3</td>
<td>1,295.6</td>
<td>0.5</td>
<td>−0.6</td>
</tr>
<tr>
<td>Indonesia</td>
<td>239.9</td>
<td>293.5</td>
<td>1.1</td>
<td>0.1</td>
</tr>
<tr>
<td>Korea</td>
<td>48.2</td>
<td>47.1</td>
<td>0.5</td>
<td>−0.5</td>
</tr>
<tr>
<td>Malaysia</td>
<td>28.4</td>
<td>43.5</td>
<td>1.7</td>
<td>0.6</td>
</tr>
<tr>
<td>Philippines</td>
<td>93.3</td>
<td>154.9</td>
<td>1.7</td>
<td>0.8</td>
</tr>
<tr>
<td>Singapore</td>
<td>5.1</td>
<td>6.1</td>
<td>3.5</td>
<td>−0.1</td>
</tr>
<tr>
<td>Thailand</td>
<td>69.1</td>
<td>71.0</td>
<td>0.7</td>
<td>−0.3</td>
</tr>
<tr>
<td>Vietnam</td>
<td>87.8</td>
<td>104.0</td>
<td>1.1</td>
<td>−0.1</td>
</tr>
</tbody>
</table>


Note: Total fertility rate is in births per woman.
Figure 14.3 Urban Population as Share of Total Population, 1950–2050 (Percent)


Note: Singapore, as a city-state, is excluded.

Figure 14.4 Share of Informal Sector Employment in Urban Employment (Percent)

usually not protected by labor regulations and lack access to pensions and other benefits (Felipe and Hasan, 2006). Asia’s growing labor mobility and prevalence of informal employment call for improving pension coverage and portability in the region.

This chapter is organized as follows: The next section examines the broad anatomy of the public pension systems in the eight countries. The subsequent section seeks to identify the main shortcomings of Asia’s existing pension systems and is followed by a section that reviews the main directions for pension reform that emerge from the diagnosis in this chapter.

**OVERVIEW OF ASIAN PUBLIC PENSION SYSTEMS**

Identifying the direction for pension reform in Asia requires an understanding of the current shortcomings of Asian pension systems, which, in turn, requires a basic understanding of Asian pension systems themselves. One key characteristic of any pension system is the age at which retirees begin to receive benefits. The pension age ranges from 55 in Indonesia, Malaysia, and Thailand, to 65 in Korea, the Philippines, and Singapore (Table 14.2). The difference between life expectancy and pension age is the number of years that a retiree has to depend on pension benefits for old-age support. All else equal, the larger this difference, the larger the liabilities of the pension system. The life expectancy–pension age gap ranges from 6.7 years in the Philippines to 19.2 years in Malaysia and for women in Vietnam. The pension age is expected to rise throughout Asia in response to rising life expectancy.

<table>
<thead>
<tr>
<th>Country</th>
<th>Pension Age (Years)</th>
<th>Difference Between Life Expectancy and Pension Age (Years)</th>
<th>Defined Benefit or Defined Contribution</th>
<th>Element of Income Redistribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>60 (55)</td>
<td>13 (18)</td>
<td>Defined Benefit, Defined Contribution, and Notional Defined Contribution</td>
<td>Yes</td>
</tr>
<tr>
<td>Indonesia</td>
<td>55.0</td>
<td>15.7</td>
<td>Defined Contribution</td>
<td>No</td>
</tr>
<tr>
<td>Korea</td>
<td>65.0</td>
<td>13.6</td>
<td>Defined Benefit</td>
<td>Yes</td>
</tr>
<tr>
<td>Malaysia</td>
<td>55.0</td>
<td>19.2</td>
<td>Defined Contribution</td>
<td>No</td>
</tr>
<tr>
<td>Philippines</td>
<td>65.0</td>
<td>6.7</td>
<td>Defined Benefit</td>
<td>Yes</td>
</tr>
<tr>
<td>Singapore</td>
<td>65.0</td>
<td>15.0</td>
<td>Defined Contribution</td>
<td>No</td>
</tr>
<tr>
<td>Thailand</td>
<td>55.0</td>
<td>15.6</td>
<td>Defined Benefit</td>
<td>No</td>
</tr>
<tr>
<td>Vietnam</td>
<td>60 (55)</td>
<td>14.2 (19.2)</td>
<td>Defined Benefit</td>
<td>No</td>
</tr>
</tbody>
</table>

Note: The pension age in parentheses refers to the pension age for women if different from that for men. Life expectancy refers to life expectancy at birth. The pension age applies to private sector workers in Indonesia, Malaysia, Singapore, and Thailand, and to both public and private sector workers in China, Korea, the Philippines, and Vietnam. In Singapore, the retirement age of 65 refers to 2012.
In some countries, including Australia, Chile, and Hong Kong SAR, the pension systems have been set up by the government but are run by the private sector. Individual pension members can choose from among different private sector pension fund managers. In contrast, the pension systems of all the eight countries are managed by the government. However, the basic structure of the pension systems for formal sector workers is far from uniform. The pension systems in China, Indonesia, Malaysia, and Singapore are defined contribution or notional defined contribution (DC) whereas those in Korea, the Philippines, Thailand, and Vietnam are defined benefit (DB). DC systems are generally funded while DB systems are not. China’s pension system combines a DB pillar with another pillar consisting of DC and notional DC schemes. The pension systems of only three of the eight countries explicitly redistribute income. The Philippines has a minimum pension that pays higher benefits to poor retirees. In China, the redistributive element takes the form of a DB basic pension. In both China and Korea, pension benefits are partly linked to average earnings.

The formula for computing pension benefits varies widely across the five countries with DB systems—China, Korea, the Philippines, Thailand, and Vietnam (see Box 14.1). Differences include the earnings measure used to compute benefits, indexation of benefits to wages and prices, and qualifying conditions for pension eligibility. For an individual who enters the labor market at age 20, the DB replaces 85 percent of income in Vietnam, 80 percent in the Philippines, 50 percent in Korea, 35 percent in Thailand, and 40 percent in China for that country’s redistributive basic pension. Under the DC and notional DC pension systems of China, Indonesia, Malaysia, and Singapore, the worker receives a lump sum consisting of accumulated contributions and interest income upon retirement.

The contribution rate for employees and employers differs substantially by country (see Figure 14.5). Employee contribution rates range from 2 percent of wages in Indonesia to 20 percent in Singapore. It should be pointed out that workers also make contributions under DB systems. Total contribution rates are the highest in Singapore and Malaysia and lowest in Indonesia and Thailand.

Asian countries face a strategic choice between social risk pooling and individual risk taking in pension system design. A good example of individual risk bearing is DC pension plans that make the individual responsible for his or her own investment and longevity risks. In contrast to individual risk bearing, under social risk pooling, society pools together the risks of all individual members and bears the risks on their behalf. The pension systems of Singapore and Malaysia are unique in the region for their heavy tilt toward individual risk taking and relative absence of social risk pooling. Unlike the other countries of the region, these two countries explicitly reject the social insurance principle in old-age income support. Both countries have national provident funds, which are essentially mandatory savings schemes. Singapore set up its Central Provident Fund in 1955 and Malaysia established its Employees Provident Fund (EPF) in 1951. Employers and employees are required to make contributions to the funds, which are managed by government organizations on behalf of employees, each of who has an individual account. Although the primary purpose of the two funds is to encourage saving
BOX 14.1

Benefit Rules of Asian Pension Systems

**China:** Both the defined-contribution and notional defined-contribution pensions pay lump sums consisting of accumulated contributions and interest income upon retirement. The redistributive basic pension is a defined-benefit pension and pays 1 percent of the average of citywide average earnings and individual earnings for each year of coverage subject to a minimum of 15 years of service. The earnings basis for benefits is citywide because pension systems are organized on a municipal basis. The basic pension is indexed to a mix of wages and prices.

**Indonesia:** The defined-contribution pension pays a lump sum consisting of accumulated contributions and interest income upon retirement.

**Korea:** For an individual with 40 years of contributions, pension benefits replaced 60 percent of earnings until 2007. After pension reform, the replacement was reduced to 50 percent in 2008 and will be reduced 0.5 percentage points every year until reaching 40 percent in 2028. The earnings measure used for computing benefits is a weighted average of individual lifetime earnings, adjusted for wage growth, and economy-wide earnings during the previous three years, adjusted for price inflation. Pension benefits are indexed to price inflation.

**Malaysia:** The defined-contribution pension pays a lump sum consisting of accumulated contributions and interest income upon retirement.

**The Philippines:** The monthly basic pension, which is independent of earnings, is 300 Philippine pesos. The earnings-related monthly pension is the greater of (1) 20 percent of a worker’s average monthly earnings plus 2 percent of average monthly earnings for each year of service exceeding 10 years; or (2) 40 percent of the worker’s average monthly earnings. The earnings basis is the greater of average earnings for the five years before pension claim or average earnings for the period during which contributions were made. Benefits are periodically adjusted for price inflation and wage growth on an ad hoc basis.

**Singapore:** The defined-contribution pension pays a lump sum consisting of accumulated contributions and interest income upon retirement.

**Thailand:** Workers accrue 1 percent of their earnings each year up to a maximum of 35 years. The base wage used to compute benefits is the average wage during the last five years before retirement. For example, an individual who worked for 20 years would be entitled to 20 percent of the base wage. Indexation of benefits to wage growth and price inflation is discretionary.

**Vietnam:** The pension benefit is the sum of three components: (1) a monthly benefit based on 45 percent of career average earnings for employees with at least 15 years of service; (2) a monthly payment equal to 2 percent of the average of earnings in the last five years before retirement for each year of credited service beyond 15 years; and (3) a lump sum equal to 50 percent of the five-year average monthly earnings before retirement for those with more than 30 years of contributions. Pension benefits are indexed to changes in the minimum wage.

Source: Authors’ compilation.
Emerging Asia’s Public Pension Systems

for retirement, both the Central Provident Fund and the Employees Provident Fund allow their members to use their balances for a variety of purposes, including housing, preretirement investments, and tertiary education. Furthermore, members can use part of the balances only for health expenditures. The mandatory saving nature of the funds has contributed to high national saving rates.

In contrast to Singapore and Malaysia, social risk pooling plays a greater role in the pension systems of the other countries. However, the six countries diverge widely in the economic, institutional, and technological capacity needed to apply the social insurance principle. For example, the Korean pension system is a comprehensive social security system comparable to those found in welfare states. At the other end, Indonesia is just beginning to lay the foundations of a new social insurance–based social security system. The main pension systems of Korea, the Philippines, Thailand, and Vietnam are DB systems that protect individual members from investment and longevity risks. In China, the redistributive basic pension is a DB scheme. The only country with a DC system—Indonesia—is moving toward a more mixed system with greater social assistance. In addition to the predominance of DB plans, the pension systems of the six countries are largely pay-as-you-go (PAYG). Only Korea’s DB system involves a significant amount of prefunding. The benefit payments of the other DB systems depend almost exclusively on the contributions of current workers.

Another noteworthy characteristic of many Asian pension systems is that they are relatively new and very much in a state of flux (Allianz Global Investors, 2007; Heller, 2006; Park 2011, 2012). The oldest systems are those in Malaysia, the Philippines, and Singapore, but even those are constantly evolving. The relatively

Figure 14.5  Employee, Employer, and Total Contribution Rates of Pension Systems, 2007 (Percent)

Note: DB = defined benefit; DC = defined contribution.
advanced Korean system was created only in 1988 and is still undergoing reforms. Indonesia enacted a law designed to establish a comprehensive social security system in 2004 although it has yet to be fully implemented. Likewise, Thailand and Vietnam are revamping their pension systems to extend coverage and improve benefits. The ongoing evolution of China’s pension system reflects the extensive structural transformation of its economy and society. A milestone 1997 decree provides the basic structure of the new two-pillar pension system: (1) a PAYG DB basic pension and (2) funded DC and notional DC pensions. China is in the middle of a systemic transition from a highly fragmented system to the two-pillar system.

The total size of pension assets in a country is relevant from a macroeconomic viewpoint. For example, the assets of the provident funds in Singapore and Malaysia represent a large part of national savings. Total pension assets also influence the impact that liberalizing pension asset investment has on financial markets. Countries such as Korea, Malaysia, and Singapore have set up public funds to manage the contributions of funded or partially funded pension systems. The public funds of Thailand and the Philippines manage the contributions of pension schemes for civil servants. China established a dedicated reserve fund, the National Social Security Fund, in 2000 to help cover future pension liabilities arising from demographic trends. The assets controlled by Asia’s public pension and reserve funds are sizable but vary widely by country. Total pension assets in 2006 ranged from less than US$1 billion in Indonesia to more than US$180 billion in Korea. The ratio of pension assets to GDP is the highest in Singapore, Malaysia, and Korea (Figure 14.6). The overall trend in the investment portfolios of Asia’s pension funds is toward greater diversification of asset classes and rising shares of overseas investments.

**Figure 14.6** Total Pension Assets as a Percentage of GDP, 2006

![Graph showing total pension assets as a percentage of GDP for various countries](image)

Source: Park (2009).

Note: China’s assets refer to those of the National Social Security Fund. The assets of the Philippines and Thailand refer to those of the pension systems for government workers.
PUBLIC PENSION SYSTEMS IN ASIA

The brief survey of Asian pension systems indicates a great deal of heterogeneity in design and structure. Pension reform requires a diagnosis of the main weaknesses of the pension system. Those weaknesses impede the ability of a pension system to fulfill its basic objectives, such as enabling consumption smoothing, providing insurance against longevity risks and other risks, and relieving poverty (Barr and Diamond, 2006). A diagnosis is essential for identifying the main areas of a pension system that need to be improved and strengthened, and hence for mapping out the strategic direction of reform. This entails looking at how each pension system performs with regard to its five core functions: (1) reliable collection of contributions, taxes, and other receipts, including any loan payments; (2) timely and accurate payment of benefits for each of the schemes; (3) skilled financial management and productive investment of pension assets; (4) maintenance of an effective communication network, including development of accurate data and record-keeping mechanisms; and (5) production of financial statements and reports that promote better governance, fiduciary responsibility, transparency, and accountability (Ross, 2004).

Undertaking the diagnosis also requires examining how the pension systems fare against their desirable properties. Ideally, a pension system should be broad based, that is, be adequate in both coverage and range of risks covered; affordable from individual, business, fiscal, and macroeconomic perspectives; actuarially and hence financially sound and sustainable over time; robust so as to withstand macroeconomic and other shocks; and able to provide reasonable levels of postretirement income coupled with a safety net for the elderly poor. Broadly speaking, Asian pension systems suffer from failures in (1) performing the five core functions of pension systems as well as (2) embodying the ideal properties of pension systems. Those failures suggest that Asian pension systems still have some way to go if they are to achieve their main objectives.

Developing countries and advanced economies have fundamental differences when considering pension reform. The institutional capacity of advanced economies lags considerably behind that of advanced economies. It is thus unproductive to frame pension design and reform issues in Asia in the same terms as in advanced economies that have more well-established pension systems. With the exception of Korea and Singapore, there is significant scope for reducing administrative and other transaction costs. The prevalence of such costs constrains the resources that can be made available to pensioners. More important, high administrative and transaction costs impede the ability of pension systems to perform the five core functions to varying degrees in China, Indonesia, Malaysia, the Philippines, Thailand, and Vietnam. For example, administrative inefficiency interferes with the collection of contributions from and payment of benefits to hard-to-reach groups such as rural and informal sector workers. The current state of flux of many Asian pension systems further adds to their high administrative and transaction costs.
Compliance cost is a specific transaction cost that adversely affects the pension systems of many Asian countries. Compliance cost refers to the cost to employers and employees of complying with the provisions of pension systems. For example, employers have to collect contributions from employees and remit them to the relevant authorities, in addition to contributing their share. Compliance costs are high when the pensioner does not get benefits on time and has to make several trips to ensure that benefits are paid. Furthermore, in some countries, employees have to pay bribes to receive benefits to which they are statutorily entitled. If compliance costs are too high, employers and employees may choose not to participate in the pension system. In addition, if the government has only limited capacity to enforce compliance, employers may evade rather than contribute. Even in countries with superficially comprehensive pension systems, such as the Philippines, widespread noncompliance opens a gulf between nominal and effective old-age income support.

The generally weak governance and regulation of Asian pension systems can be attributed in large part to the lack of institutional capacity. Effective performance of the five core functions of pension systems requires efficient governance, management, and regulation. In funded pension systems, governance and regulation are especially important for the sound financial management and productive investment of pension assets. In well-developed financial markets such as the United States and the United Kingdom, pension funds are subject to explicit regulatory structures and laws. In contrast, in Asia, even though banks and insurance companies are regulated, regulatory bodies for pension funds are glaringly absent. Lack of strong governance and regulation also breeds lack of public confidence in pension systems, which, in turn, discourages compliance and participation. Political support for pension systems will remain fragile unless the general public is confident that the systems will honor their promises for the future.

Challenges

At one level, Asian pension systems are failing because they do not effectively perform the five core functions of pension systems as the result of high transaction costs and lack of strong governance. At another level, they are failing because, to varying degrees, they are not well designed—that is, they are not adequate, affordable, robust, sustainable, and equitable. At this level, the biggest failure of Asian pension systems is that they cover only a limited part of the total population. The percentage of the population covered by pension systems differs from country to country, but no country has managed to achieve anywhere near universal coverage. The share of the covered labor force ranges from 13.5 percent to 62.9 percent (Figure 14.7). The coverage rate for the working-age population ranges from 10.8 percent to 45.3 percent. By way of comparison, in advanced economies such as Germany, Japan, and the United States, pension systems typically cover about 90 percent of the labor force and between 60 percent and 75 percent of the working-age population. Therefore, even in
Emerging Asia’s Public Pension Systems

high-income Asian countries such as Korea, coverage falls well short of advanced economy levels.

Another key performance indicator on which Asian countries perform poorly is the replacement rate, or the ratio of retirement income to preretirement income. The replacement rate is a widely used measure of the adequacy of pension benefit as a source of postretirement income. A higher replacement rate enables the pensioner to achieve a higher standard of living. Pension experts generally recommend a replacement rate of between 66 percent and 75 percent, adjusted for both longevity and inflation risks. A pension modeling study completed in 2008 by the Asian Development Bank (ADB, 2008) computes the replacement rate for Asian pension systems. According to the ADB study, the replacement rate ranges from 19 percent in Indonesia to 79 percent in the Philippines (Figure 14.8). The computed replacement rates are higher in China, Korea, the Philippines, and Vietnam than in Indonesia, Malaysia, Singapore, and Thailand. Among the eight countries, only the Philippines has replacement rates within the recommended range. This implies that, by and large, Asian pension systems are not providing adequate retirement income for retirees.

China’s relatively high replacement rate is deceptive in light of its low coverage. If pension benefits are high but only a small share of the population receives those benefits, it is unclear whether the pension system is adequate. A useful index that gives a more accurate picture of the adequacy of a country’s pension system is the product of multiplying the coverage rate by the replacement rate. The proposed index thus incorporates both replacement rate and coverage. For China, the proposed adequacy index adjusts the high replacement rate for low coverage.
Conversely, for countries with high coverage but low replacement rates, the index adjusts high coverage for the low replacement rate. The adequacy index is computed on the basis of coverage of the labor force. For the ADB study’s replacement rates, the index ranges from 3 percent in Indonesia to 24 percent in Korea (Figure 14.9). From the perspective of both indices, the most adequate pension systems seem to be those of Korea, Malaysia, and the Philippines while the least adequate pension systems seem to be those of Indonesia, Thailand, and Vietnam.

The apparent adequacy of the Philippine pension system brings the issues of sustainability and affordability to the fore. Sizable benefits for a high share of the population are not sustainable in the long term if the country cannot afford such a generous pension system. In this case, however, the adequacy of the pension system is more apparent than real. A widely used index of sustainability is implicit pension debt (Holzmann, MacArthur, and Sin, 2000; Holzmann, Palacios, and Zviniene, 2001; Gill, Packard, and Yermo, 2005; Barr and Diamond, 2006). The index can be broadly defined as the present value of future pension promises. As noted earlier, in Asian countries with DB pension systems, pension promises are unfunded or only partly funded. Studies by the World Bank found the implicit pension debt of China, Korea, and the Philippines to be substantially larger than the public debt of those countries (Holzmann, Palacios, and Zviniene, 2004; Sin, 2005). Therefore, relatively healthy fiscal positions should not be allowed to obscure the fiscal risks attributable to large future pension liabilities. Furthermore, in all three countries the relative size of the implicit pension debt is large enough to raise concerns about the pension system’s ability to honor its future promises. In Korea, such concerns spurred a reduction of benefits that began in 2008. The implicit pension debt is much higher in China and the Philippines than in Korea,
which suggests that the need for sustainability-enhancing reform is even stronger in those countries.

Asian pension contribution rates are generally quite low and hence seemingly affordable for both employers and employees. However, widespread noncompliance in many lower-income Asian countries suggests that the true pension costs are higher and hence less affordable for individuals. However, pension costs do not seem to significantly distort the incentives of employees to work and employers to hire, even in countries with the highest contribution rates. Given that many Asian pension systems are still evolving and consolidating, it is too early to tell whether they are robust to macroeconomic and other shocks. However, the more established pension systems of the region came through the Asian crisis of the late 1990s unscathed. Finally, as mentioned earlier, only the pension systems of China, Korea, and the Philippines have safety nets designed to protect the elderly poor. However, those safety nets fail to provide enough income for even a minimum standard of living. For example, the basic monthly pension for the elderly poor in the Philippines is lower than the poverty threshold, and a recently introduced means-tested benefit for the Korean elderly is only about 5 percent of the average wage. The replacement rate for low-income workers substantially exceeds that of average-income workers in China, Korea, and the Philippines but not in the other countries.

A key issue with existing pension systems is inequity, or lack of fairness, between various segments of the population with regard to coverage, net benefits, and retirement age. For coverage, access to pension systems tends to be skewed toward urban areas and the formal sector. For example, in China it is estimated that fewer than 10 percent of rural workers have pension coverage. Low rural

![Figure 14.9 Adequacy Index of Pension Systems, 2007](image-url)

Source: Authors’ estimates based on data from the Asian Development Bank (2008) and OECD (2012).
Note: The coverage rate used in the calculation is the coverage rate of the labor force.
coverage, in combination with the large number of rural workers, helps to explain
China's low overall coverage rate of 20.5 percent of the labor force and 17.2 per-
cent of the working-age population. Massive rural-to-urban migration is adding
to the pool of informal sector workers in China, Vietnam, and other countries.
The limited coverage of rural and informal sector workers reflects the high ad-
ministrative costs of reaching them and the limited institutional capacity of Asian
pension systems. Pension coverage is also higher for government workers than for
private sector workers throughout the region. Although in general national pen-
sion systems cover almost all government workers, access to pension systems
among private formal sector workers is much more limited, at less than 25 per-
cent in Indonesia, about 50 percent in China and Malaysia, and 27 percent in
Thailand. In fact, in many Asian countries, including Korea and Vietnam, pen-
sion systems initially covered only government workers.

Government workers' better access to pension systems is part and parcel of
the privileged position and stronger rights they enjoy relative to private sector
workers. In addition to lower coverage, private sector workers also tend to receive
lower pension benefits compared with public sector workers. A common struc-
ture among pension systems in the region is the presence of two national
programs—one for civil servants and another for private formal sector workers—
with the former offering more generous benefits than the latter. For example, the
replacement rate for public sector workers in China is estimated to be 90 percent
compared with 58 percent for urban private sector workers. In Thailand, the
replacement rate is about 70 percent for government workers, compared with
just about 30 percent for private sector workers. With regard to gender, women
pensioners tend to receive lower pension benefits than do men owing to shorter
contribution periods and lower average earnings. To illustrate, in Korea, the av-
erage pension for women is about 60–70 percent that of men. Disparity also
exists in retirement ages between public sector and private sector pension sys-
tems, as well as between gender groups. In Singapore, for example, the normal
retirement age for government workers is 55, compared with 65 for private sec-
tor workers.

With regard to gender differences, China's urban private sector pension system
has set 60 as the normal retirement age for males, compared with 55 for females.
A similar gender disparity exists in Vietnam's pension system (Guerard and oth-

The differences among members of the same generation are a form of horizon-
tal or intragenerational disparity. However, inequity may also arise between mem-
ers of different generations. When a pension system is at risk of being
unsustainable, if no action is taken, the current generation is passing on to the
future generation a heavier burden of the cost of supporting the pension system
compared with what the current generation bears. Without far-reaching reforms,
the financial burden on future generations may become politically unacceptable.
Thus, for long-term financial stability, it is important to address inequity in the
sharing of burdens across generations. Decisions regarding contribution rates and
pension benefit ages affect how pension costs are allocated across generations. For
example, faced with high pension costs, a country may raise contributions, but
without reducing pension benefits, current workers bear a disproportionate burden of the costs, in addition to the risk of reduced benefits upon retirement as the pension system becomes increasingly unsustainable.

The above evidence strongly suggests the urgency of pension reform, but reform should be implemented carefully and anchored in a well-designed scheme. A major factor to consider in the design of any pension reform is the impact on fiscal costs, both immediate and long term (Barr, 2006). For example, when a country decides to move from the traditional DB PAYG system toward individual funded accounts, there are likely to be significant fiscal costs, including transition costs, given that pensioners continue to receive benefits under the old system, but contributions flow into the new system. To finance current pensions in the new system, governments may need to raise taxes or resort to borrowing. As exemplified in the Chilean pension system, the fiscal costs of reform can be high and persistent, so fiscal consolidation before reform is critical (Arenas de Mesa and Mesa-Lago, 2006; Melguizo and others, 2009). In general, owing to fiscal prudence over the years, East and Southeast Asian countries enjoy healthy fiscal positions that they are expected to maintain for some time. Endowed with strong fiscal balances, Asian countries may be well positioned to initiate the needed reforms and deal with their fiscal consequences. The next section discusses key policy options for strengthening Asia’s pension systems.

Next Steps

The diagnosis of the current state of Asian pension systems makes it clear that pension reform is urgently needed throughout the region. There is substantial scope for improving the effectiveness of the pension systems in performing their five core functions in many Asian countries. Asian countries are also still a long way from having well-designed pension systems that satisfy ideal systemic properties such as adequacy and sustainability. Because failures in both functional performance and system design stand in the way of good execution, addressing both types of failure is essential for pension reform. Asian countries vary greatly in their pension-related needs and capacities. There are thus no one-size-fits-all solutions when it comes to pension reform in Asia. However, a number of common region-wide themes emerge from the diagnosis of Asian pension systems. Those themes can help set the direction for pension reform throughout the region.

One common area of reform is to strengthen the institutional and administrative capacity of Asian pension systems for performing the five core functions. Strengthening institutional capacity is the point of departure for pension reform in Asia given that building a well-functioning pension system is simply not possible without adequate institutional capacity. The lack of capacity is more pronounced in poorer countries such as China, Indonesia, and Vietnam but affects the other countries as well. The mundane nature of core functions such as developing accurate data and record-keeping systems should not detract from their significance for Asian pension reform. In the sequencing of pension reform, the nitty-gritty work of capacity-enhancing organizational reform should be completed before broader systemic reform is undertaken.
A second common area of reform, related to the first, is the need to improve the governance and regulation of Asian pension systems. Strong governance and regulation are essential for the operational efficiency and transparency of any pension system. They are also essential for developing the institutional capacity to perform the five core functions. Examples of specific measures for promoting good governance include better accounting, more rigorous financial controls, human resource development, computerization, and greater disclosure to stakeholders. Current regulatory structures for pensions are weak in Asia. There is thus a strong case to be made for a dedicated regulator to ensure professionalism in performing core functions, to develop the pension fund industry, to promote financial education, and to help bring about a systemic perspective that integrates the different components of the pension system.

In light of low pension coverage throughout the region, a third area of reform is expanding coverage. Even in richer economies such as Korea and Malaysia, coverage is far from universal and substantial scope remains for further widening coverage. Administrative inefficiency hampers the ability of Asian pension systems to cover more than a limited segment of the population. Coverage expansion should first target the formal sector and only later extend into the informal sector. Because of the growing mobility of Asian workers, lack of pension portability is becoming a major deterrent to expanding coverage. One solution is to offer fiscal incentives for DC occupational pension plans based on individual accounts. A pure DC scheme may, however, impose greater risks on workers, such as varying rates of return on pension assets, which can greatly discourage them from participating in the scheme. To make the scheme more appealing to workers, it may be modified to allow for some risk sharing, say, through a guaranteed minimum pension as has been implemented in some countries. One major benefit of DC plans is their portability. In countries with fragmented pension systems, such as that of China, which is organized on the basis of cities, better coordination and possibly consolidation will also enhance portability.

There is a real danger that Asian countries’ pension systems, if left unreformed, will be unable to honor their pension promises. Therefore, enhancing financial sustainability is another critical area of pension reform, especially in countries with DB pension systems. Painful but necessary reforms that adjust the parameters of the pension system—retirement age, contribution rate, benefits—are required to promote sustainability. But as Barr points out (Chapter 3 of this volume), parametric reform is subject to certain caveats. Raising the retirement age can help ease pension costs, but people vary in their preferences about when to stop working, so applying a flexible retirement age can be a sound policy option in the absence of fiscal pressures. Increasing contribution rates can boost pension funds, but is not a viable option in countries in which contributions are already high, which can lead to low compliance. Furthermore, reducing pension benefits can lower pension costs, but may worsen poverty among the elderly. Asia’s population aging favors a larger role for fully funded DC pension systems, which are less vulnerable to demographic pressures. More generally, funding, which can also occur under DB systems through accumulation of reserves, renders the payment of benefits less dependent on the willingness and ability of future workers to support the elderly.
At least some funding is desirable in light of Asia’s rapid population aging, and Asian countries are already beginning to move in that direction. A prominent example is China’s establishment of the National Social Security Fund. With more assets to manage, it is imperative for Asian pension funds to improve the returns on the assets they manage. The experiences of the highly regarded Chilean pension system clearly illustrate that improving returns is possible even for developing countries. In the past, government interference has channeled much of the funds into low-return domestic assets, often for policy-based investments. However, Asian governments have now begun to deregulate and liberalize pension fund management. For example, the share of foreign assets is growing in the pension funds of Korea, Malaysia, the Philippines, and Thailand. Maximizing the returns from pension funds requires the deepening and broadening of domestic financial and capital markets. In this sense, financial development is as much a precondition as a hoped-for by-product of pension reform. Higher returns from better asset management allow for more adequate benefits and strengthen financial sustainability.

Given their general failure to provide safety nets, Asian pension systems must strive to do a much better job of protecting the elderly poor. Old-age poverty is especially relevant for Asia, where large numbers of the lifetime poor will never participate in formal pension systems. Indeed, the lifetime poor may constitute as much as 30 percent of the labor force in some Asian countries. The best way to provide old-age income support for the elderly poor is to establish a universal social pension system that pays a small amount for basic sustenance to the entire population. However, running the program can be expensive and open to wide leakages to the nonpoor. An alternative to universal coverage is to limit beneficiaries through means testing. Either way, the basic social pension will be financed from general budgetary revenues rather than contributions. Setting up a separate social pension system with the explicit objective of poverty relief also helps prevent the ad hoc use of the main pension system’s funds. In poor countries that do not have sufficient resources to operate such a pension system, providing incentives to encourage and sustain informal arrangements of caring for the elderly can be a feasible option.

Asian policymakers could also be encouraged to think outside the box. There is no reason why the parameters facing the pension system should necessarily be constant. For example, government policies may help reverse or slow down the fall in fertility and encourage longer working lives, which would change the demographic and financial equations facing Asian pension systems. Better health enables people to work longer, and government policy can encourage firms to hire older workers. Korea, which has tried to limit population growth for decades, has reversed course and is now offering a wide range of fiscal incentives to encourage larger families. Policymakers may also provide tax breaks for adult children who support their parents. Filial piety cannot be legislated but it could be influenced by financial incentives. Outside-the-box policies entail fiscal costs of their own that will have to be weighed against their benefits.
CONCLUSION

After decades of growth-oriented policies and rapid economic growth, Asia is finally paying more attention to social protection. This shift has not happened merely because Asian countries have become richer and can now afford to devote more resources to protecting their citizens from various risks. It also reflects a growing recognition that the traditional narrow definition of growth is harmful for inclusive growth. In light of Asia’s rapid population aging, a particularly important component of social protection is to protect the old from not having adequate income to meet their needs. Economic growth in a society in which a large and growing segment of the population is poor and marginalized cannot possibly be inclusive. More fundamentally, Asia’s demographic trends mean that the social and political constraints to sustaining high growth may eventually become overwhelming in the absence of well-functioning pension systems. Therefore, the case for urgent pension reform in Asia is as much economic as social.

REFERENCES


CHAPTER 15

Reforming Pensions to Ensure Equitable and Adequate Retirement Incomes in China

XUEJIN ZUO

INTRODUCTION

China is facing many challenges in its pursuit of a prosperous and harmonious society. In the presence of increased income disparity and the progressive aging of the population, one of these challenges is how to reform the country’s pension system to enhance its equity, efficiency, and financial sustainability.

This chapter first provides an overview of the different schemes in China’s pension system. It then assesses the impact of demographic changes on the future development of China’s pension system, and follows with a discussion of previous and current reform efforts and future reform options for achieving a more equitable, efficient, and financially sustainable pension system.

THE CURRENT PENSION SYSTEM

Pension for Urban Workers and Staff

China’s current system consists of three major public pension programs: the Pension for Urban Workers and Staff (PUWS), the Pension for Urban Residents (PUR), and the New Rural Pension (NRP). The PUR and NRP are relatively new; the PUWS originated in the era of the planned economy.

For many years before the reform of the pension system in the late 1990s, two pension schemes were in place in China: Labor Insurance funded by individual enterprises, and Government (Public) Insurance funded by different levels of government. Labor Insurance provided the formal employees of urban enterprises with comprehensive benefits, including pensions, health care, insurance for work injury, child bearing, and others. Some of the benefits, such as health insurance, were partially extended to the dependents of the covered employees. For instance, dependents could get 50 percent of their medical expenses reimbursed. Government

1Most migrants cannot have their household registration changed to their new place of residence and hence do not qualify for PUR.
Insurance provided similar benefits to employees of the government and public institutions (shiye-dan-wei, such as public universities and research institutes).

**Urban Pension Reform: From Enterprise Funded to Locality Pooling**

In the early 1980s, when China’s economic reforms extended from rural to urban sectors, urban enterprises were given more autonomy, and came under increasing pressure to enhance performance and profitability. Labor Insurance became a source of unfair competition between established and emerging new enterprises, because of the differential age structures of their employees and hence burdens in supporting retirees. Furthermore, in the early 1990s many loss-making state-owned enterprises and urban collective enterprises were closed down or restructured, leading to a wave of lay-offs. Pension reforms became necessary so that the pension benefits of those laid-off workers could be protected.

The government responded by upgrading the pooling of the pension scheme from individual enterprises to localities. In a manner similar to the three-pillar pension system suggested by the World Bank (1994), and based on pilot projects in some localities in the 1980s and 1990s, the State Council (1991, 1995, and 1997) outlined the framework of the new pension scheme, and amendments were made several years later (State Council, 2005).

The new pension scheme that evolved from Labor Insurance is the PUWS. The PUWS is pooled at the prefecture or even the county level. The scheme has two pillars. The first pillar is the social pooling account based on defined-benefit and pay-as-you-go (PAYG) principles. This pillar is financed by employer contributions equivalent to 20 percent of the total payroll. The second pillar comprises individual saving accounts operating on a defined-contribution principle and full funding. This pillar is financed by employee contributions of 8 percent of their individual wages.

Workers who contribute to the pension fund for 15 years or longer by the time of retirement are entitled to receive monthly pension benefits from both the first and second pillars. The benefit from the first pillar is calculated based on the worker’s years of contribution and wages relative to the average wages in the locality. The benefit from the second pillar is an annuity derived from the balance of the worker’s individual saving account upon retirement. People who contributed

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2In China, the government hierarchy has five levels: the Center, the provinces (comprising the province-level municipalities under the direct jurisdiction of the Center, and the autonomous regions), the prefectures (or prefecture-level cities), the counties (or county-level cities), and the towns or townships. At the end of 2011, there were four provincial-level cities, 332 prefectures, and 2,853 counties in China (National Bureau of Statistics, 2012).

3The employers’ contribution rate varies by locality because of the varying age structure of the participating workers. For instance, Guangdong has both a lower contribution rate and more surpluses as a result of the participation of a large number of young migrant workers. By contrast, Shanghai and Heilongjng have the highest contribution rate, 22 percent, because of the older age structure of their urban workers.
to the pension fund for fewer than 15 years by the time of retirement are not eligible for any benefits from the first pillar; they can only receive a lump-sum payment from their individual saving accounts equal to the account’s balance upon retirement.

In practice, the determination of pension benefits is more complicated because of the transitional arrangement for those who had already retired or had contributed under the old pension system, and because of the frequent increase in pension benefits mandated by the central government. During 2005–12, the average PUWS pension increased from 700 yuan (Y) to Y 1,721. It will increase an additional 10 percent in 2013 as mandated by the State Council (Office of the State Council, 2013). Such centrally mandated increases tend to invalidate the rules for the determination of pension benefits.

To avoid financial risks involved in the investment of pension funds by the local governments, the central government mandates that all funds be deposited in state-owned commercial banks or invested in government bonds. Consequently, the lower financial risks of the pension assets are achieved at the price of very low or even negative real returns.

In the late 1990s, the prefectures established their own PUWS. However, the schemes’ high required contribution rates tended to induce contribution evasion among the employers of migrant and low-income workers. Some big cities with large concentrations of migrant workers, such as Beijing, Guangzhou, and Shanghai, initiated their own, less expensive pension schemes for migrant workers. For instance, Shanghai introduced Comprehensive Insurance for Migrant Workers, requiring that the employers of migrant workers contribute 12.5 percent of the migrant workers’ wages, of which 7 percent was allocated for pension insurance and the remaining 5.5 percent for health and work injury insurance. Since July 2011, the Social Insurance Law (National People’s Congress, 2010) has mandated that all locally initiated insurance schemes for migrant workers merge into PUWS. See Tables 15.1 and 15.2 for more information.

As reported by the Ministry of Human Resources and Social Security (2012), by the end of 2011, PUWS covered 284 million people, including 68 million retirees and 216 million working employees. The latter accounted for about 60 percent of the total urban workforce of 359 million. Total revenues of the scheme amounted to Y 1,689 billion, including Y 1,462 billion in contributions from both employers and employees, and Y 227.2 billion in budget subsidies from different levels of government. In 2011 the scheme’s total expenditures were Y 1,276 billion.

**Pensions for Rural and Urban Residents**

The introduction of the New Rural Pension and the Pension for Urban Residents was a milestone in the creation of the current pension system. The two pension

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4In mid-2013, 1 U.S. dollar was approximately 6.1 Chinese yuan.
### TABLE 15.1

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Individuals Covered by PUWS (Million)</th>
<th>Covered Working Employees (contributors)</th>
<th>Covered Retirees (beneficiaries)</th>
<th>System Support Ratio (working employees/retirees)</th>
</tr>
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<tbody>
<tr>
<td>2000</td>
<td>136.17</td>
<td>104.48</td>
<td>31.70</td>
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<td>2001</td>
<td>141.83</td>
<td>108.02</td>
<td>33.81</td>
<td>3.20</td>
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<td>2002</td>
<td>147.37</td>
<td>111.29</td>
<td>36.08</td>
<td>3.09</td>
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<tr>
<td>2003</td>
<td>155.07</td>
<td>116.47</td>
<td>38.60</td>
<td>3.02</td>
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<td>2004</td>
<td>163.53</td>
<td>122.50</td>
<td>41.03</td>
<td>2.99</td>
</tr>
<tr>
<td>2005</td>
<td>174.88</td>
<td>131.20</td>
<td>43.68</td>
<td>3.00</td>
</tr>
<tr>
<td>2006</td>
<td>187.66</td>
<td>141.31</td>
<td>46.35</td>
<td>3.05</td>
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<tr>
<td>2007</td>
<td>201.37</td>
<td>151.83</td>
<td>49.54</td>
<td>3.07</td>
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<tr>
<td>2008</td>
<td>218.91</td>
<td>165.88</td>
<td>53.04</td>
<td>3.13</td>
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<tr>
<td>2009</td>
<td>235.50</td>
<td>177.43</td>
<td>58.07</td>
<td>3.06</td>
</tr>
<tr>
<td>2010</td>
<td>257.07</td>
<td>194.02</td>
<td>63.05</td>
<td>3.08</td>
</tr>
<tr>
<td>2011</td>
<td>283.91</td>
<td>215.65</td>
<td>68.26</td>
<td>3.16</td>
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</table>

Note: PUWS = Pension for Urban Workers and Staff.

### TABLE 15.2

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Revenues (Billion yuan)</th>
<th>Contributions</th>
<th>Fiscal Subsidies</th>
<th>Total Expenditures</th>
<th>Annual Surplus1</th>
<th>Annual Surplus2</th>
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<td>2000</td>
<td>227.85</td>
<td>227.85</td>
<td>0.00</td>
<td>211.55</td>
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<td>16.30</td>
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<td>2001</td>
<td>248.90</td>
<td>248.90</td>
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<td>232.13</td>
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<td>2002</td>
<td>317.15</td>
<td>276.33</td>
<td>40.82</td>
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<td>2003</td>
<td>368.00</td>
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<td>2005</td>
<td>509.33</td>
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<td>115.70</td>
<td>596.49</td>
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<td>738.96</td>
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<td>889.44</td>
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</tr>
<tr>
<td>2011</td>
<td>1,689.47</td>
<td>1,462.27</td>
<td>227.20</td>
<td>1,276.49</td>
<td>412.98</td>
<td>185.78</td>
</tr>
</tbody>
</table>

Note: Total revenues consist of contributions to both the social pooling accounts and the individual saving accounts, as well as government subsidies. "Surplus1" is defined as total revenues minus total expenditures; "Surplus2" is defined as contributions minus total expenditures. PUWS = Pension for Urban Workers and Staff.

schemes, which have similar structures, cover the majority of rural and urban elderly who previously had no access to other pensions. The major component of the schemes is the noncontributory pension benefit financed by general revenue; the other component consists of individual savings accounts financed by voluntary contributions from individuals.

**The New Rural Pension**

Before 1992, rural households had no pension schemes. The children of the rural elderly, especially sons, had been the primary source of old-age security. Those
elderly without any family support or labor power were eligible for the “five guarantees” household program, which provided households with food, clothing, housing, medical care, and burial. The program was financed by rural collectives or villages and township governments.

The origin of the New Rural Pension can be traced back to 1992, when the Ministry of Civil Affairs devised a plan for a rural pension scheme pooled and managed at the county level. The program was primarily financed by contributions from rural households, with some aid from rural collectives if available (Ministry of Civil Affairs, 1992). This scheme did not succeed because of the unattractively small pension benefits, the small risk pools, and the consequent high financial risks and management costs, and was formally abandoned in 1999.

In 2009, the central government resumed rural pension programs under the term “New Rural Pension.” The new program is different from the old one in that the central and local governments play a pivotal role in its financing, in addition to contributions from rural households and other available sources (State Council, 2009).

The noncontributory component of the scheme provides all rural elderly 60 years and older with pension benefits of Y 55 per month. The benefits are fully funded by the central budget for the elderly in the middle and western provinces, and half funded for those in the eastern provinces, with the remaining half being funded by the provincial and local governments. The provincial and local governments are encouraged to provide additional pension benefits from their own sources of funding. However, it is likely that only the more developed eastern provinces and their localities have the resources to fund such additional pension benefits.

The other component of the scheme is the voluntary, fully funded, defined-contribution component. Rural participants can choose one of five options (Y 100, Y 200, Y 300, Y 400, and Y 500) to contribute to their individual accounts each year. Local governments are mandated by the central government to subsidize each participant’s contribution by at least Y 30 per year. When participants retire, they can receive monthly pension benefits equal to the total balance in the accounts upon retirement divided by 139.

By the end of 2011, NRP programs had been initiated in all 31 provincial-level administrations. The program had 326 million participants, including 85 million pensioners. In 2011, the total revenues of the rural pension programs amounted to Y 107 billion, of which Y 41.5 billion was from rural households’ contributions, with the remainder funded by the central and local governments. Its total expenditures amounted to Y 58.8 billion (Ministry of Human Resources and Social Security, 2012).

The Pension for Urban Residents

The PUR is designed to cover all nonworking urban residents. Similar to the NRP, the PUR consists of two components: the noncontributory pension and individual saving accounts. The noncontributory component provides qualified
urban elderly with pension benefits of ¥ 55 per month, financed by the central, provincial, and local governments in the same manner as the NRP. The other component is the voluntary, fully-funded, individual savings accounts. Participants are able to choose from among 10 options (¥ 100 through ¥ 1,000 in ¥ 100 increments) for contributing to their individual accounts. Local governments generally subsidize each participant’s contribution by at least ¥ 30 per year. When participants retire, they can receive from their own individual accounts monthly pension benefits equal to the total balance in the account divided by 139 (State Council, 2011a).

By the end of 2011, the PUR had been instituted in all 31 provinces, with 5.4 million participants, of whom 2.4 million were pension recipients. In 2011, the total revenues of the pension scheme amounted to ¥ 4 billion, with only ¥ 600 million from residents’ contributions. The total expenditures amounted to ¥ 1.1 billion.

Other Pensions

The government pension

Government Insurance for government and public employees has remained largely unchanged. Funded by government employers, it continues to provide government and public employees with generous pension benefits. This program is not explicitly an insurance scheme—the covered employees are not required to pay any contributions or premiums, which has increasingly been a source of public complaint about the unfairness of the pension system. The central government is considering merging the government pensions with the PUWS. However, no concrete steps have been taken so far.

Voluntary enterprise annuities

The general principles of the supplementary pension programs were established in the mid-1990s (State Council, 1995, 1997). Operational details for enterprise annuities were laid out in 2003 (Ministry of Labor and Social Security, 2003). Companies may contribute a maximum of one-twelfth of their total payrolls, while employees can contribute a maximum of one-twelfth of individual wages to the annuity plans. Both contributions are taxable, whereas pension benefits are tax exempt. The management of the annuities is entrusted to government-authorized asset-management firms.

PROJECTED DEVELOPMENTS IN CHINA’S PUBLIC PENSION SYSTEM

Demographic Changes

The most important factor shaping the future of the public pension system is demographic change.
Declining population

China’s population grew from 540 million to 1.3 billion between 1950 and 2010. During this period, the population growth rate declined from more than 2 percent per year to less than 0.5 percent today (Figure 15.1). The population is projected to decline in the coming decades according to the medium and high variants published by the United Nations.

The major force driving the transition from high to low population growth was the decline in the total fertility rate, which dropped from five to six children per woman in the 1950s and 1960s to two to three children per woman in the 1970s (a fertility decline unprecedented in human history) and below replacement level by the early 1990s. In the most recent decade it dropped below 1.5 (Guo, 2010). Both fertility control policies and socioeconomic changes favoring lower fertility contributed to the decline. Socioeconomic changes have been the major factor explaining the persistent fertility decline in the absence of changes in fertility control policy since the late 1980s.

Population aging

An inevitable consequence of slower population growth is population aging. Those ages 65 years and older accounted for only 4.4 percent of the population

Figure 15.1  Total Population Size and Birth, Death, and Growth Rates, 1950–2100 (Historical trends and projections under different population variants)
in 1954 and 3.6 percent in 1964, growing to nearly 7 percent in 2000, and further increasing to more than 9 percent in 2011 (Figure 15.2). By contrast, the population ages 0–14 years fell from more than 40 percent of the total in 1964 to a mere 16.6 percent in 2010, indicating the future trend of progressive aging.

According to the United Nations’ medium variant, those ages 65 years and older would account for 28 percent of the total in 2055, and about 30 percent of the total in the following three decades. In the low variant, the elderly would account for more than one-quarter of the total in 2040, increasing to more than 40 percent during 2070–90. Such an unprecedented “super aging” of the population would produce severe challenges to society.

As a result of population aging, the old-age dependency ratio increased from 6.4 percent in 1964 to 8.0 percent in 1982 and further to 11.9 percent in 2010. In the UN’s medium variant projection, the old-age dependency ratio is projected to increase to 42 percent by 2050 and 54 percent by 2080. In the low variant, the ratios would increase to 48 percent and nearly 90 percent, respectively.

The Financial Sustainability and Equity of the Public Pension System

**Provincial deficits and government subsidies**

Today, all three public pension schemes in China are in surplus. However, the reported surpluses cloud the fact that all are heavily subsidized by the government: in 2011 government subsidies accounted for 13.4 percent of the total revenues of PUWS, 61.2 percent of NRP, and 85 percent of PUR (Ministry of Human Resources and Social Security, 2012).

**Figure 15.2** Share of Those Ages 65 Years and Older in Total Population, 1950–2100 (Percent; historical trend, and projections under different population variants)
In the absence of government subsidies, many local pension schemes would be unable to pay benefits. For example, for the PUWS, of the 32 provincial administration units, 14 would have been in deficit in 2011 without government subsidies. Moreover, most of the surpluses are concentrated in coastal provinces such as Beijing, Guangdong, Jiangsu, and Zhejiang, which are the destinations of internal migration. In 2011, while the PUWS had a total surplus (net of government subsidies) of Y 41.3 billion nationwide, Guangdong had a surplus of Y 51.9 billion (Zheng, 2012).

“Empty individual savings accounts”

By design the PUWS has two pillars: the PAYG, defined-benefit, social pooling accounts and the fully funded, defined-contribution, individual saving accounts. The existence of two pillars suggests that the authority should provide two separate reports rather than one report mixing the two pillars. In practice, however, nearly 90 percent of the funds in the individual savings accounts have been used to pay current pension benefits. In China, the difference between the recorded balance and the actual balance in the individual PUWS accounts is called “empty individual savings accounts” or simply “empty accounts.”

The size of the empty accounts has been growing rapidly in recent years. As reported by Zheng (2012), it reached Y 1.10 trillion at the end of 2007, increasing to Y 2.22 trillion at the end of 2011, equal to nearly 90 percent of the recorded balance in individual saving accounts. Despite increasing government subsidies, the size of the empty accounts exceeded the total surplus of the scheme, as shown in Table 15.3.

Estimates of implicit pension debt

Several studies have projected the PUWS’s contributions and expenditures, and estimated the implicit pension debt (Zuo and Zhou, 1996; World Bank, 1997;
Wang and others, 2001). In a study of China’s national balance sheet, Ma and others (2012) conclude that in the baseline scenario, if there are no reforms, the deficits in the PUWS would become a heavy fiscal burden. In 2050, the annual deficit would account for 30 percent of fiscal expenditures, and the present value of total deficits during 2013–50 would sum to 83 percent of 2011 GDP. This study did not take into account the deficits in NRP and PUR; otherwise, the burden on fiscal expenditures would be much heavier.

**Fragmentation of the public pension system and the rural-urban duality**

One key distinguishing feature of public pension schemes in China is the fragmentation of pension pools by locality and social group. Public pensions are generally pooled and managed by prefectures, or even by counties. Each locality manages at least three pension schemes—PUWS, NRP, and PUR—plus Government Insurance. This fragmentation has resulted in thousands of small pension pools, which, in turn, has led to high management costs and potential financial risks.

To avoid financial risks arising from inappropriate investments by local pension management, the central government mandates that all pension funds be deposited in state commercial banks or invested in government bonds. This might be a rational decision to control for financial risks, given the lack of economies of scale and management skills at the local level. However, such restrictions are implemented at the price of low or even negative real returns. In addition, this practice has prevented pension funds from being important investors in the capital market, thereby impeding the full-fledged development of the capital market in China.

The fragmentation of the pension system also creates barriers to free mobility in the country’s labor market. When workers migrate across localities, they have difficulty carrying their entitlements with them. Some studies find that the PUWS tend to aggravate income inequality in the country (e.g., Zhu, 2010).

**Disparities in pension benefits**

Evidence shows that differences in pension benefits across the thousands of existing schemes are significant, even startling. The China Health and Retirement Longitudinal Survey, conducted in 2011 by the CHARLS research team (2013) at Peking University, finds that the median NRP benefit was ¥ 720, accounting for 21 percent of average per capita expenditure of rural households; that of PUR was ¥ 1,200, accounting for 38.7 percent of the average per capita expenditure of urban households. By comparison, the median pension benefit of PUWS was ¥ 18,000; and that of government pension was ¥ 24,000, accounting for, respectively, 192.9 percent and 242.2 percent of average per capita expenditure of urban households.

This is consistent with findings from a survey conducted in five provinces by the Chinese Academy of Social Sciences (Wang, 2012). Xiamen City in Fujian
Province provides an apt illustration. The survey finds that the monthly pension benefit received by retirees in the sample ranges widely, from ¥ 200 to ¥ 10,000.

The survey also finds significant differences in the perceived adequacy of pension benefits across pension schemes. On average, about 40 percent of pensioners complained that the benefits were not adequate, or do not even meet basic needs. Only 3.8 percent of the retirees of the government pension scheme made such complaints, while 56 percent of beneficiaries of the PUR and 79 percent of the beneficiaries of the NRP made such complaints.

The central government provides the retirees covered by NRP and PUR with noncontributory pensions of ¥ 55 per month. Additional benefits can be provided by local governments at their own discretion. Obviously, local governments’ capacity to provide additional benefits depends on the localities’ level of development, hence, the low-income and poor elderly, who concentrate in the less developed hinterland provinces, are less likely to receive additional benefits.

In addition, the pension benefits from NRP and PUR individual saving accounts tend to be small. Because most participants choose to contribute the minimum ¥ 100 per year, they would accumulate pension assets of only ¥ 4,000 over 40 years of work. Assuming a real rate of return of zero, upon retirement they can receive ¥ 4,000/139 = ¥ 28.80 per month or ¥ 345 per year from their individual saving accounts. This is far too little to provide meaningful support to the elderly.

**Internal migration and portability of pension benefits**

Because the PUWS is pooled at the local level, participants’ entitlements to benefits are less portable, if portable at all. Migrant workers lose their entitlements quite often when changing localities.

As discussed, some larger cities have initiated special social insurance programs for migrant workers. The 2011 Social Insurance Law requires all local insurance programs for migrant workers to be merged into the PUWS, but because the PUWS is pooled at the local level, the merger cannot resolve the portability problem.

To improve portability of the entitlements to the PUWS’s social pooling accounts, in 2009 the central government mandated that when a participant moves across localities, he or she can transfer to the place of destination the entire balances in his or her individual saving account, and the employer’s contributions to the social pooling accounts equal to 12 percent of the individual’s total wages after 1998 (The Office of the State Council, 2009). In reality, however, because most migrants were not covered by the PUWS before July 2011, the above rule can hardly apply to them.

Because migrant workers contribute to the pension schemes but often lose their entitlements, a de facto transfer from migrants to local pension schemes has been created, and from the places of origin to the places of destination. For 2010, interprovincial migration created estimated pension revenues of ¥ 52.6 billion for provinces of destination, averaging ¥ 3,424 per migrant covered in urban pension programs (Zheng, 2012). Consequently, the coastal provinces gained pension revenues of ¥ 32.4 billion from immigration, at the costs of ¥ 23.9 billion in the
middle provinces and Y 8.4 billion in the western provinces. This outcome aggravates interregional income disparities.

REFORM EFFORTS AND FUTURE OPTIONS
Previous and Current Reforms

*Expansion of the coverage of pension programs*

Great efforts were made in the past decade to expand the coverage of public pension systems, with the PUWS’s scope widened to include the employees of foreign-funded enterprises, private enterprises, and the informal sector; and the NRP and PUR were introduced to cover rural and urban nonworking residents. Although these steps, in principle, suggest significant progress, migrant worker participation in PUWS has remained very low: by end-2011, there were 253 million peasant workers, including 159 million migrant workers (Ministry of Human Resources and Social Security, 2012). Although the Social Insurance Law mandates that all peasant workers participate in PUWS beginning in July 2011, only 41 million participated, accounting for fewer than one-sixth of total peasant workers.

The scheme’s very low participation rate may be attributed to the PUWS’s high contribution rates, which often lead to contribution evasion among low-income workers. The uncertainty of being able to access their pension benefits when needed—arising from the portability problem—also discourages migrant workers from participating.

*Enhancing the financial sustainability of PUWS*

To control for the fiscal risks caused by the “empty accounts,” the central government initiated pilot projects to “refill” those accounts in 2001, 2004, and 2006 (Ministry of Labor and Social Security and Ministry of Finance, 2005). The major reform measures in the pilot were the following:

- To separate the operation of individual saving accounts from social pooling accounts, and refill the individual saving accounts with funds equal to 5 percent of the participants’ wages, mostly financed by the central government;
- To strengthen the link between individual worker’s pension benefits and contributions; and
- To encourage enterprises to set up the annuities by exempting their contributions, up to 4 percent of total payroll, from taxes.

Unfortunately, the efforts to refill empty accounts did not succeed. In 2009, Liaoning Province, the first province involved in the pilot, stopped subsidizing PUWS and again began to borrow from the individual saving accounts to pay current pension benefits. By 2011, the first three provinces involved in the pilot had the first, second, and fifth largest pension deficits among the 31 provinces (Zheng, 2012).

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5 The original Chinese word for “refill” is zuoshi, literally meaning to “make it real.”
Pooling the first pillar of PUWS

The government’s objective is to unify the pension system at the national level. However, progress toward the intermediate objective of unifying at the provincial level has been weak. There are several possible explanations for the lack of progress. Given the interprovincial and interlocality disparities in average wages, contribution rates, and replacement ratios, the better-off provinces and localities are leery of national pooling because of their concerns about possible losses from redistribution of resources. The PUWS high contribution rates tend to intensify such concerns. Even the central government might be concerned about the possible moral hazard of local governments shifting their pension debts to the central government. National pooling would reduce the fragmentation of the current system, which has an adverse impact on the efficiency of China’s labor market and impedes healthy development of the capital market.

Developing a multipillar pension system

Regardless of the central government’s intention to build a multipillar pension system in China, participation in voluntary company schemes has remained very low among both employers and employees. The PUWS’s very high mandatory contribution rates leave little room for the development of other pillars; thus, it should not be surprising that enterprise annuities and other components of the third pillar are underdeveloped.

Future Reform Options: A Five-Pillar System

The official guideline for further reforms to China’s social insurance system is to “expand coverage, ensure basic retirement incomes, develop a multi-pillar system and to enhance sustainability” (National People’s Congress, 2010). Successfully meeting these objectives would help a more equitable and sustainable pension system to be achieved. The question is how to devise feasible and operational reform measures to fulfill these objectives.

Building on the existing three-pillar pension system, a new, five-pillar system could be established by adding a “zero pillar” and a fourth pillar. In the new system, the zero pillar would be a noncontributory pension available to all senior citizens age 65 years and older, funded by the central budget. The first pillar would be a unified, nationwide, PAYG, defined-benefit scheme. The second pillar would be individual accounts held in fully funded, defined-contribution schemes. The third pillar would be the voluntary enterprise annuities and individual retirement accounts, which should be encouraged by exempting contributions from taxation. The fourth pillar would be traditional familial support to the elderly.

Zero Pillar: Noncontributory pension for all elderly

China’s present pension system cannot provide the low-income elderly, especially the rural elderly, with adequate retirement incomes. Recent studies (e.g., Holzmann and Hinz, 2005; Barr and Diamond, 2010; World Bank and Development Research Center of the State Council, the People’s Republic of China, 2013) have
suggested that China introduce a zero pillar or noncontributory pension into the system. Countries such as Australia, Canada, Chile, Korea, the Netherlands, and New Zealand have already established such a pillar, funded by general tax revenues. In fact, some elements of a noncontributory pension are embedded in China’s NRP and PUR schemes. The question is how to upgrade these noncontributory elements into a full-fledged zero pillar.

One option would be for the central government to provide all citizens 65 years and older with benefits equal to 5 percent of per capita GDP, regardless of residence, gender, or income level. This would be equivalent to about a quarter of rural household per capita income and close to 10 percent of urban. Although rural and urban elderly would receive the same absolute amount, the rural elderly would benefit more relative to their per capita household incomes. The amount could be increased later, for example, to 6 percent of per capita GDP, which is just above the official rural poverty line. Although more costly, an important argument for universal (rather than means-tested) noncontributory pension benefits for all individuals age 65 years and older is that it can foster public consensus on the new pillar, can simplify administration, and can avoid discouraging the elderly from engaging in paid jobs.

The noncontributory pension could be funded solely by the central budget. A centrally funded system can foster the development of an integrated labor market in the country and alleviate this barrier to labor mobility, as compared with the alternative of locality funding. In fact, an appropriate increase in central spending can help reduce the imbalance in allocating revenues and expenditures across different levels of government. In 2011, for instance, the central government accounted for about half of total fiscal revenues but for only 15 percent of total expenditures.5 By comparison, local governments accounted for about half of total fiscal revenues, while accounting for 85 percent of total expenditures (National Bureau of Statistics, 2012).

A tax-funded, noncontributory pension could be financially sustainable. In 2012, spending would have been less than ½ percent of GDP, equivalent to 2.2 percent of general government revenues and 4.5 percent of central government revenues. Because the central government has been providing enormous transfers to provincial governments every year in the form of earmarked funds, central provision of noncontributory pensions would, to a large extent, merely be a change in the form of the transfers.

Even when the share of those age 65 years and older doubles to 20 percent of the total population, noncontributory pension spending would increase to 1 percent of GDP, which is still affordable. If the population ages more dramatically, the eligibility age for the noncontributory pension could be raised to 67 years or more.

Moreover, noncontributory pension expenditure would be a substitute for certain other types of expenditure. For instance, the centrally funded Y 55 per

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5 Some other government revenues are not recorded in budgetary revenues, such as the contributions to the public pension and other social security programs, the revenues derived from land leasing, and other fees.
Because high income disparities between rural and urban areas persist, peasants in the agricultural sector should not be required to participate in the first pillar. Rather, they should be entitled to the zero and second pillars. Their individual accounts should be managed by the same authorized pension management companies.

A formula could be designed to closely associate an individual’s benefits with his or her contributions to the National Basic Pension. Following the practice in Germany and other advanced economies, the pension scheme can define an individual worker’s credit point for a given year $t$ as

$$b_t = \left( \frac{\lambda \bar{y}_t + (1 - \lambda) y_t}{\bar{y}_t} \right) \times 100 = \left[ \lambda + (1 - \lambda) \frac{y_t}{\bar{y}_t} \right] \times 100,$$

in which $y_t$ is the individual wage and $\bar{y}_t$ is the average wage in year $t$. The equation indicates that an individual worker’s credit point is the weighted average of his or her own wage $y_t$ and the average wage $\bar{y}_t$ (relative to the average wage $\bar{y}_t$). $\lambda = 0$ means that a worker’s credit point is perfectly related to his or her own wage; $\lambda = 1$ means that the credit point is perfectly flat. In reality, the policy variable $\lambda$ would be set in the neighborhood of 0.5. The equation also indicates that if an individual worker contributes to the first pillar for one year, he or she will be entitled to, on average, pension benefits equal to 1 percent of average wage. An individual worker can accumulate credit points over his or her whole working life. After retirement he or she can receive a pension equal to the accumulated credit points times a standard income measure such as the average wage. This is also an important measure for alleviating the concerns of high-income localities about national pooling.

**National pooling of the first pillar at a lower mandatory contribution rate**

To overcome the PUWS’s problems caused by its fragmentation and high mandatory contribution rates, the new first pillar should be pooled nationwide and across all urban workers, including employees of all levels of government, public institutions, and private and public enterprises. All of these workers, together with the self-employed, should be required to participate. Employers should contribute for all their employees; self-employed should contribute for themselves, possibly with government subsidies. A lower contribution rate would encourage higher participation of migrant workers. This pillar could be called the National Basic Pension (guomin jichu yanglaojin).

Assuming an average replacement rate of 40 percent, a contribution rate of 12 percent would allow the system to break even or perhaps run a surplus as long as the old-age dependency ratio remains less than 30 percent. The 12 percent rate would also be consistent with the “portable” contributions in the social pooling accounts when migrants move across localities (Office of the State Council, 2009). It should be emphasized that the replacement ratio of 40 percent is an average across all retirees; to encourage participation, it will vary by individual, and depend on individual wages and years of contribution.

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7Because high income disparities between rural and urban areas persist, peasants in the agricultural sector should not be required to participate in the first pillar. Rather, they should be entitled to the zero and second pillars. Their individual accounts should be managed by the same authorized pension management companies.

8A formula could be designed to closely associate an individual’s benefits with his or her contributions to the National Basic Pension. Following the practice in Germany and other advanced economies, the pension scheme can define an individual worker’s credit point $b_t$ for a given year $t$ as

$$b_t = \left( \frac{\lambda \bar{y}_t + (1 - \lambda) y_t}{\bar{y}_t} \right) \times 100 = \left[ \lambda + (1 - \lambda) \frac{y_t}{\bar{y}_t} \right] \times 100,$$

in which $y_t$ is the individual wage and $\bar{y}_t$ is the average wage in year $t$. The equation indicates that an individual worker’s credit point is the weighted average of his or her own wage $y_t$ and the average wage $\bar{y}_t$ (relative to the average wage $\bar{y}_t$). $\lambda = 0$ means that a worker’s credit point is perfectly related to his or her own wage; $\lambda = 1$ means that the credit point is perfectly flat. In reality, the policy variable $\lambda$ would be set in the neighborhood of 0.5. The equation also indicates that if an individual worker contributes to the first pillar for one year, he or she will be entitled to, on average, pension benefits equal to 1 percent of average wage. An individual worker can accumulate credit points over his or her whole working life. After retirement he or she can receive a pension equal to the accumulated credit points times a standard income measure such as the average wage. This is also an important measure for alleviating the concerns of high-income localities about national pooling.
To face the challenge of population aging, China can learn from the experiences of other countries and increase the mandatory retirement age, increase the years of contribution required for entitlement to the first-pillar benefits, and subsidize the pension scheme with general tax revenues.

Properly managing the transition period will be important. To ensure a politically popular and smooth transition from the old to the new system, high priority should be given to two principles. First, the replacement ratio should remain unchanged, if not improved, during the transition period. Second, the financial responsibilities should be shared between the central and local governments, with the center playing the pivotal role.

In 2010, the average replacement rates was 39.3 percent for the 32 provincial-level administrations (Zheng, 2012). Of all the provinces, 18 had replacement rates below 40 percent. Therefore, the proposed system’s replacement rate of 40 percent will make the retirees in these provinces better off, even if the provinces or localities do not provide any additional pension benefits. The remaining 14 provinces have replacement rates higher than 40 percent. Among them, eight had replacement rates between 40 and 50 percent, four between 50 and 60 percent, and two about 65 percent. Accordingly, these three groups of provinces should make up the difference in the replacement rates. To do so, the local governments should set up local transition funds to be financed primarily by contributions from the covered employers and employees, in addition to the 12 percent contribution to the National Basic Pension.

The burden of making up the difference should be manageable for the provinces and their localities, and could be financed by the local transitional funds in general. If the local transitional funds are not sufficient to cover the relevant costs, they should be subsidized by, in turn, fiscal revenues at the local level, other available local resources (such as profits from local state-owned enterprises), and transfers from the provincial and central governments if necessary. Box 15.1 discusses the suggested transitional arrangements in more detail.

BOX 15.1

Transitional Arrangements and Rules for Different Groups

During the transition period, individuals could be classified into four groups:

- Already retired before transition to the new system (“old retirees”);
- Not retired but have participated in the scheme for 15 years or longer by the time of the transition (“older workers”);
- Participated in the scheme for fewer than 15 years (“middle-aged workers”); and
- Participate in the scheme after the transition (“young workers”).

The suggested specific rules for these four groups are discussed below.

Old retirees would continue to receive pensions at the same replacement ratio as under the old system, with no obligation to make contributions to the scheme. Their pension benefits would grow with average wages.
The contribution rates for older workers would remain at 20 percent of the total payroll from employers, and 8 percent of individual wages from individual employees. Contributions from employers would be divided into two parts: 12 percent would go to the National Basic Pension (NBP), with the remainder, together with the contributions from individual employees, going to the local transitional funds. The whole defined-benefit scheme should be on a PAYG basis, while refilling the “empty accounts” of this set of workers should be abandoned. The NBP would provide older retirees and older workers with an average replacement ratio of 40 percent. The local transitional funds would make up the difference between the replacement ratios promised under the old system and provided under the new one so that the replacement ratio would remain the same as under the old system.

Middle-aged workers would continue to have the social pooling account and the individual saving accounts. Their employers should contribute 12 percent of total payroll to the NBP, with employees contributing between 4 and 8 percent of their wages to the second pillar. On retirement, the pension would consist of the benefits derived from the NBP and from their individual saving accounts.

One transitional issue is how to deal with the contributions that the employers of “middle-aged workers” made under the old system. These contributions are, in general, 20 percent of payroll. At least part of the difference should be transferred to the individual saving accounts of the middle-aged workers.

In addition, the exact amount of the empty accounts, including transfers from the social pooling accounts, for each of the middle-aged workers should be specified. A plan on how to “refill” the empty accounts within 15 years should be made in each of the localities. Potential sources for refilling could be contributions to the local transitional funds, subsidies from the provincial and local governments, dividends of state-owned enterprises, and central transfers to the provinces and localities.

The individual saving accounts under the new system should be funded on a defined-contribution basis. Management of the individual accounts should be transferred from local governments to licensed and competitive pension asset management companies. These asset management companies should operate nationally or even globally and have more flexibility in choosing investment portfolios. Local governments or enterprises should be allowed to choose among them to encourage competition. The operation of the pension funds should be closely monitored by the local governments that choose the pension asset management companies and the owners of the pension assets.

Employers of young workers should contribute 12 percent of their payrolls and the workers could choose to contribute between 4 and 8 percent of their wages to their individual saving accounts. When they retire, they would be entitled to receive pension benefits derived from both the NBP and their individual saving accounts. They would be able to get higher returns from the assets in their individual saving accounts because of the new management of the funds.
Urban Residents, and the New Rural Pension. Government Insurance continues to provide pension benefits to employees of the government and of public institutions. Coverage of the public pension system has expanded rapidly since the introduction of the NPR (2009) and PUR (2011). A relatively small number of enterprises have set up voluntary annuity programs for their employees.

Yet China’s public pension system has several problems that should be tackled through further reform. The very high compulsory contribution rates for PUWS tend to curb the participation of low-income workers such as migrant workers and those employed in small and medium-sized enterprises and in the informal sector. Locality pooling and the consequent fragmentation of the pension system lead to lack of economies of scale and high management costs, resulting in inefficient performance of the system. Central government regulations restricting investment vehicles for the pension funds lead to very low or even negative real returns. The present system is not equitable, as evidenced by the substantial disparities in pension benefits between Government Insurance and the PUWS, and between urban and rural schemes. The financial sustainability of the pension system presents another serious challenge. At present, most public pension programs are heavily subsidized by several levels of government. The “empty” individual accounts in the PUWS totaled more than Y 2 trillion at end-2011 and will continue to grow. Population aging and the consequent decline in the system support ratio will generate a large implicit pension debt in the decades to come.

The impact of the above-mentioned problems goes beyond the pension system itself. For instance, the fragmentation of the pension system places barriers to spatial and social mobility of labor, impeding the development of an integrated national labor market. The second pillar of the PUWS is not allowed to invest in the capital market, thus preventing the scheme from being an important investor in the market.

To resolve these issues, this chapter suggests a five-pillar pension system based on the current three-pillar system. In this system, the zero pillar is a noncontributory pension funded by the central budget, covering all urban and rural elderly 65 years and older. The first pillar is the national social pooling account based on defined-benefit and PAYG principles, covering all urban workers and the self-employed, at a lower contribution rate. The second pillar is the mandatory individual saving accounts operating as part of fully funded defined-contribution schemes, managed and operated nationwide by specialized pension asset management companies. The third pillar comprises voluntary occupational schemes, encouraged by favorable tax treatment. The fourth pillar is familial support to the elderly. The chapter also suggests detailed measures to ensure a smooth transition from the old to the new system.

The proposed reform of the pension system would greatly enhance the equity, efficiency, and sustainability of the system, ensure adequate retirement incomes for the elderly, and contribute to increases in domestic consumption, stable growth, and the construction of a harmonious society.
REFERENCES

In Chinese


**In English**


CHAPTER 16

India’s Pension Reform Initiative

DHIRENDRA SWARUP

INTRODUCTION

Nearly one-eighth of world’s elderly population lives in India. The vast majority of this population is not covered by any formal pension scheme. Instead, they are dependent on their own lifetime savings and transfers from their children or extended families. These informal systems of old-age income security are imperfect and are becoming increasingly strained, especially in light of increasing labor mobility, improving life expectancy, and an increasing old-age dependency ratio. The population older than 60 grew at an annual rate of 3.8 percent between 1991 and 2001, from 55.3 million to 75.9 million, as compared with annual growth of 1.8 percent for the general population. By 2015, India’s elderly population is estimated to be more than 113 million, and it is likely to nearly double during the following two decades.

Pension policy in India has traditionally been based on financing through employer and employee participation. As a result, coverage has been restricted to the organized sector, and the vast majority of the workforce in the unorganized sector has no access to formal channels of old-age financial support. Of the more than 300 million employed Indians in the working-age population, fewer than 12 percent are covered by some form of retirement benefit scheme (OECD, 2009). Besides the problem of limited coverage, the existing mandatory and voluntary private pension system is characterized by limitations such as a fragmented regulatory framework and lack of individual choice and portability. High incidence of administrative costs and low real rates of return are endemic in the existing system, which has become unsustainable.

Unsustainability of the existing pension system is accentuated by the sharp increase in the financial burden on the government and other employers on account of pension liabilities. The total pension expenditure for central government employees rose from 3.6 percent of GDP in 1994/95 to 7.3 percent of GDP in 2010/11.

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1The old-age dependency ratio increased gradually from 6.3 percent in 1980 to 7.6 percent in 2010.
2It is estimated that by 2035, more than 217 million persons, constituting 13.7 percent of the country’s population, will be 60 years old and older.
3See Table 16.2 for details and sources.
The dearness allowance is a cost-of-living adjustment paid to government employees and pensioners in India.

The total corpus, the aggregate of all subscribers’ funds, being managed under NPS in October 2012 was 219.51 billion rupees (Rs), which amounts to US$3.99 billion. According to the information available on the website of the Pension Fund Regulatory and Development Authority (http://www.pfrda.org.in/indexmain.asp?linkid=184), total assets under management in March 2013 were Rs 298.52 crores, which amounts to US$5.42 billion. All conversions from Rs to US$ in this chapter are made at the rate of Rs 55 to US$1.00.

### DESCRIPTION OF THE CURRENT INDIAN PENSION SYSTEM

#### National Pension Scheme

Since the early 2000s, a marked shift has taken place in pension policy in India through the introduction of a new pension system. The government’s objective was to design a defined-contribution (DC) scheme for new entrants in central government services without the need for extra pension infrastructure. The scheme was also intended to serve other groups such as state government employees, middle-class self-employed people, and low-income workers in the unorganized sectors.

The National Pension Scheme (NPS) became operational in late 2003. Participation has been mandatory for new central government employees (except the armed forces) since 2004. The NPS marked a radical shift from the defined-benefit (DB) system to a DC regime. More than 2 million central and state government employees are already covered under the NPS and contribute 10 percent of their salary and so-called dearness allowance toward their pensions with a matching contribution from the relevant governments. Since 2004, 26 states have also established DC pension systems for their own new employees. The NPS holds a corpus of nearly US$4 billion and has more than US$5.40 billion in assets under management. See Table 16.1 for the number of subscribers registered under the NPS.

The NPS, which began as a pension scheme for government employees, was opened to all citizens on a voluntary basis in 2009. The government also launched the Swavalamban Scheme under the NPS, which focuses on providing pension

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**TABLE 16.1**

<table>
<thead>
<tr>
<th>Category or Sector</th>
<th>Number of Subscribers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central government</td>
<td>1,037,017</td>
</tr>
<tr>
<td>State governments</td>
<td>1,421,281</td>
</tr>
<tr>
<td>NPS Lite</td>
<td>1,254,860</td>
</tr>
<tr>
<td>Private sector</td>
<td>151,783</td>
</tr>
<tr>
<td><strong>Total coverage</strong></td>
<td><strong>3,864,941</strong></td>
</tr>
</tbody>
</table>


Note: NPS Lite is a targeted scheme designed for providing old-age income security to the economically disadvantaged sectors of society. It operates through the use of “aggregators” who are responsible for the enrollment of subscribers into the scheme and for servicing their needs.
coverage to the informal sector. In this scheme the government contributes Rs 1,000 annually toward those subscribers who contribute Rs 1,000 to Rs 12,000 in one financial year. The co-contributions will continue until 2016–17, during which period it is expected to benefit about 7 million NPS subscribers from the unorganized sector.7

For all subscribers to the NPS, including civil servants covered on a mandatory basis, as well as all other citizens who choose to open NPS accounts, annuitization of at least 40 percent of accumulated pension wealth upon attaining the age of 60 is compulsory. The balance is payable as a lump sum or through phased withdrawals between ages 60 and 70, at the option of the subscriber. There are seven private pension fund managers licensed by the Pension Fund Regulatory and Development Authority (PFRDA) to manage voluntary NPS assets, and individual subscribers are free to choose the fund manager they wish to use for managing their retirement savings. There are four broad categories of pension schemes, including a life-cycle, investment-based “default” scheme that offers investment options with varying ratios of equity and fixed-income instruments. Subscribers may choose their schemes. Full transparency and disclosure of information regarding investments is required to be provided by the intermediaries. Portability is provided to the participants along with the ability to transfer accumulations from one fund manager to another.

**Occupational Pension Schemes**

In addition to the NPS, several other categories of occupational pension schemes are in operation in India. These include the DB civil services pension schemes that cover 22 million central and state government employees, and employees’ provident and pension funds managed by the Employees’ Provident Fund Organization and other employer-managed funds under which another 15 million workers are estimated to be covered (OECD, 2009).

**Civil service pensions**

The Civil Servants’ Pension (CSP) is a pay-as-you-go, DB scheme for employees of the central government who were hired up to December 31, 2003, and for employees of state governments hired up to the effective date mentioned in notifications issued by those governments. A modified one rank–one wage principle applies wherein all retired employees of a certain rank receive the same pension. Pension payments are revised periodically to reflect growth in wages and the consumer price index. Growth in pension benefits in old age is typically higher than inflation.

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6In mid-2013, 1 U.S. dollar was approximately 59.5 Indian rupees.
7Further information on the Swavalamban Scheme is available at http://www.pfrda.org.in/indexmain.asp?linkid=186.
The central government provides information on its annual pension payouts, as well as payouts by the state governments, in budget documents (Table 16.2). Estimates of the unfunded liability associated with the benefits under the CSP are, however, neither computed nor disseminated.

Fiscal stress is the main problem for CSP: it was designed at a time when most of the employees who retired at age 60 were expected to live to 68. The value of the annuity embedded in the CSP has risen as the result of improvements in longevity. The mortality characteristics of government employees, who belong to a relatively higher income group than the average, are more or less in line with populations in the Organization for Economic Cooperation and Development countries. The fiscal stress at the subnational level has been even more acute, partly for demographic reasons, and has led to noncompliance on the part of scheme underwriters. Some of the state governments have not made timely payment of pension benefits.

**Private sector employees’ mandatory schemes**

Pension benefits of other employees in the organized sector are governed by the Employees’ Provident Funds and Miscellaneous Provisions Act, 1952, under which the Employees’ Provident Fund (EPF) and the Employees’ Pension Scheme (EPS) were established. The provisions of this act are applicable to all businesses employing more than 20 workers. The schemes are administered by the Employees Provident Fund Organization (EPFO): all functions and processes of the EPF and the EPS are handled by the EPFO, except fund management, which has been outsourced to four professional asset management companies. However, some schemes under the purview of EPFO are allowed to manage their own funds. EPFO treats them as exempted funds. These exempted funds are required to follow the EPFO’s investment guidelines and are required to match the EPFO’s returns.

The EPF is an individual account, DC scheme wherein the employee and employer each contribute to the fund at the rate of 12 percent of the employee's pay. In 2012, the total assets under EPFO’s control was more than Rs 3 trillion (US$54.5 billion). There are a number of provisions under the scheme for

### TABLE 16.2

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>Expenditure (Rs billions)</th>
<th>Percent of GDP</th>
</tr>
</thead>
<tbody>
<tr>
<td>1994/95</td>
<td>364.31</td>
<td>3.6</td>
</tr>
<tr>
<td>2000/01</td>
<td>1,439.49</td>
<td>6.9</td>
</tr>
<tr>
<td>2004/05</td>
<td>1,830.00</td>
<td>5.6</td>
</tr>
<tr>
<td>2010/11</td>
<td>5,740.45</td>
<td>7.3</td>
</tr>
</tbody>
</table>

Sources: Central government: Statement 1, Consolidated fund of India, Revenue Account–Disbursements, Budget Documents; Table 2, Macroeconomic aggregates (at constant prices), Handbook of Statistics on the Indian Economy, 2010–11, Reserve Bank of India.
preretirement withdrawal of accumulated balances. These provisions are frequently used by scheme members, which leads to reduced balances at the time of their retirement. These depleted balances lead to negligible old-age income benefits. The EPFO scheme enjoys an “EEE” (exempt, exempt, exempt) tax structure, which constitutes a major tax subsidy.  

The EPS is a DB scheme based on a contribution rate of 8.33 percent from the employee and an additional 1.16 percent from the government. The EPS was introduced in 1995 to replace the Family Pension Scheme of 1971, and is applicable to workers who entered into employment after 1995 and those who were covered under the previous scheme.

The Family Pension Scheme (framed under the Employees Provident Fund Act) remained unquestioned and there were virtually no changes in contribution rates, administration, and benefits for almost four decades. The first major change occurred in 1995, with the conversion of part of the DC EPF scheme into the DB EPS. This change marked an important break from the existing policy of the EPFO in two ways: (1) a mandated annuity to private sector employees was introduced for the first time; and (2) it added a new pension liability (the scheme is not fully funded) to the government’s existing liability with regard to the civil servants of central and state governments.


Employers may also choose to set up voluntary provident or superannuation funds to provide retirement benefits to their employees. Such funds are entitled to certain tax benefits if they are approved by the tax authorities.

**Social assistance programs for the elderly**

The current pension landscape in India includes social assistance programs operated by the government. The following social pensions are covered under the National Social Assistance Program: the Indira Gandhi National Old Age Pension Scheme, the Indira Gandhi National Widow Pension Scheme, and the Indira Gandhi National Disability Pension Scheme. These transfers are targeted to those below the poverty line. Of these, only the Indira Gandhi National Old Age Pension Scheme applies to those older than age 65. The central government finances a monthly pension of Rs 200, which is further supplemented by state governments. Details of the pensioners covered under these schemes are given in Table 16.3.

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8The “EEE” status of the EPFO-administered schemes indicates that the contributions made to the fund, the returns earned during the accumulation phase, as well as the final withdrawal, are all exempt from taxation. In contrast, the NPS follows an EET tax structure under which the contributions are exempt, accumulations are exempt, but withdrawals (in old age) are taxable income.
Increasing Coverage

The existing pension system, which leaves more than 88 percent of the Indian workforce uncovered, is unlikely to act as a social security umbrella for aging Indians. Even for those covered by the system, the defined benefit is not guaranteed given that the DB schemes are unfunded or underfunded. Improvements in health care leading to increases in life expectancy, the evolution of nuclear family structures, and rising expectations resulting from increases in per capita income, education, and the like are some of the factors likely to compound the problem in the future. The new pension system, based on defined contributions and funded liabilities is a significant step toward addressing this problem. The spread of the NPS is seen by many as the direction in which pension reform needs to move to find a viable and sustainable solution to the problem of old-age income security because it is felt that neither the existing system nor any antipoverty drive by the government is likely to solve the problem.

Introduction of the NPS for new employees of the central and state governments is a positive step for reforming the pension system in India. The road ahead has many challenges that need to be tackled for the system to spread wide enough to cover the unorganized sector, agricultural workers, temporary and casual workers, and the self-employed.

The low level of financial literacy and the high numbers of the rural elderly make the task daunting. The gender ratio of the workforce and economic status of women pose special problems in the design of pension systems. Designing an effective, efficient, and accessible system that meets the requirements of a heterogeneous workforce is the immediate priority of those concerned with the pension reform process in India. The challenges of translating the design into reality will arise thereafter and will take a while to be overcome.

Fiscal Challenges

The new pension system is an attempt to move away from DB pension plans to DC-based schemes. However, this change is applicable only to new employees in the central and state governments. The problem of financing the pension liability for those already in unfunded or partially funded schemes is likely to cause fiscal stress for the next two or three decades. Parametric changes will, therefore, become

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**TABLE 16.3**

<table>
<thead>
<tr>
<th>Scheme</th>
<th>Beneficiaries (millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indira Gandhi National Old Age Pension Scheme</td>
<td>15.6</td>
</tr>
<tr>
<td>Indira Gandhi National Widow Pension Scheme</td>
<td>2.3</td>
</tr>
<tr>
<td>Indira Gandhi National Disability Pension Scheme</td>
<td>0.5</td>
</tr>
</tbody>
</table>

Note: The data are as of December 14, 2009.
necessary for effective and efficient discharge of this liability. Thus, apart from the expansion of NPS, the introduction of parametric changes in the existing DB mandatory pension systems is equally necessary for reducing the fiscal stress. Attempts to estimate the future pension liability arising from the existing unfunded pension plans are at a nascent stage in India. The most recent reliable study of this issue puts the implicit pension debt liability of the central and state governments arising out of civil servants’ pensions and the funding gap of the EPS at Rs 20,034 billion, or 64.5 percent of GDP in 2004/05 (Bhardwaj and Dave, 2005). The study also highlights that the enormity of the problem becomes even more apparent when this liability is compared with the public debt of the government of India, which was 84.9 percent of GDP in 2004/05. Although both the methodology and the results can be questioned, the magnitude of the problem this estimate suggests cannot be ignored.

Empirical evidence collected through a survey commissioned by the Asian Development Bank suggests that India is in transition from old-age support systems based on the family to a new reality in which the balance between family support and self-support in retirement is likely to fall heavily in the latter direction. The survey data show that “of the 363 million earning members of the workforce, less than half have an expectation of financial support in retirement. For younger generation the figure is significantly lower (less than one-third)” (ADB, 2006, p. 109). It is, therefore, essential that policymakers correctly anticipate the course of the transition so that adequate countermeasures are in place at the appropriate time. The ADB data also indicate that without guidance, encouragement, and support, most Indian workers will not save sufficiently for their old age and the capacity of the government and the labor market to face the challenges is likely to become even more limited than it is now. Recognizing the fact that pension reforms are an urgent social priority, policymakers in India are working to transform pension systems so that they are not only capable of meeting the present challenges but are able to adapt and restructure to meet unforeseen future developments.

**Adequacy**

A major challenge of the National Pension System is to provide the individual subscriber with adequate retirement income. Public sector pension schemes involve policy risk, inasmuch as the government of the day may not be able to pay required pension outlays, leading to delays in pension payments or defaults in some cases. By contrast, private pension schemes are less subject to this policy risk because governments are less prone to confiscate private property, but DC funds do involve capital market risk during the accumulation phase when contributions and returns on investment build up in the fund. The risk is that the pension funds’ performance may be insufficient to give reasonable retirement income to the pension subscribers.

**Social Acceptance**

Traditionally, coverage in India has been obtained by mandating participation and contributions along with providing tax incentives and guaranteed returns on retirement savings. The voluntary nature of the NPS, along with poor financial
literacy and the attitude of households toward financial savings, risk, and retirement planning, poses a challenge to achieving optimum coverage. Creating awareness about these reforms and gaining the confidence of the people is the single most important challenge faced by policymakers.

Even as the PFRDA attempts to increase voluntary coverage of the NPS, a large proportion of unorganized sector workers (perhaps as many as half) may not be in a position in the foreseeable future to self-provide for retirement, and the NPS will, therefore, be an ineffective policy tool for dealing with their old-age poverty challenges. These workers include the lifetime poor, who may not be able to save anything for their old age, and unpaid workers who have no cash incomes with which to make pension contributions. Equally, the NPS will be unable to address the retirement savings needs of informal sector workers who are presently nearing retirement or those who are already age 60 or older. For each of these groups, the government would need to design and implement effective social assistance policies and programs that adequately support them in their old age.

The absence of a meaningful and efficiently delivered old-age pension benefit continues to impose a significant social transfer burden on younger low-income workers. The ability of poorer households to support the elderly is an issue that requires closer analysis and urgent policy attention. The presence of an elderly household member may cause all persons in the household to be in measured poverty, which would, in turn, further depress the capacity of low-income earners to save for their own retirement. In this eventuality, therefore, lifting elderly persons out of poverty through fiscal transfers may offer the possibility of lifting the entire household out of poverty.

**Voluntary Contributions**

Although the NPS may not be a universal solution to India’s pension coverage gap, its success can dramatically reduce the size of the workforce that must rely on a combination of fiscal and social transfers to combat old-age poverty. Equally, the underlying design considerations that form the basis of the NPS architecture may present a useful benchmark for assessing the efficacy of other existing retirement arrangements, as well as a basis for their reform.

The government and the PFRDA are already using the NPS framework to address the lower levels of the income distribution with conditional cash transfers aimed at encouraging voluntary enrollment and disciplined retirement saving by low-income workers. Such transfers are also useful for increasing the value of their terminal savings. This strategy is expected to improve voluntary NPS enrollment by the working poor. A significant communication and public education effort will also be required to support policy and regulatory efforts to produce optimum, regular savings for old age by a population that faces largely intermittent incomes.

The spread of the NPS would be possible only through the combined efforts of the public and private sectors. The private players, who have hitherto played only a marginal role in the field, are anxious to have a reliable estimate of the likely size of the market before venturing into it.
REFORMS AND REFORM OPTIONS

Developing an Inclusive and Equitable National Pension Strategy

A fundamental issue in improving existing retirement programs is the absence of a comprehensive national pension policy. A policy-based benchmark by which the performance of existing occupational schemes can be evaluated needs to be defined. For example, several current occupational schemes fail to deliver an “adequate” retirement income. Yet, subscribers are unable to demand a different outcome simply because there is no clear definition of “adequacy.” The policy objectives of India’s pension system are not clearly stated, nor are the specific responsibilities of administrators and trustees of both compulsory and voluntary programs in targeting or ensuring adequate retirement income security for Indian workers.

Therefore, the government should aim to develop an inclusive and equitable national pension policy that provides equal opportunities and identical rights to all citizens, regardless of their employment status, to achieve a dignified retirement in a secure and well-regulated environment. This policy should enable individual portability across jobs and locations, as well as across a range of pension programs. The design and performance of existing and new pension programs, as well as the underlying actions of regulators, administrators, and trustees, should be guided by this proposed national pension policy. The process of designing this national pension policy should be preceded by a comprehensive review of existing arrangements as well as a broad-based survey of labor markets. Although several regulatory and supervisory deficiencies can be addressed without undertaking such a sweeping review, the effectiveness of the “system” to deliver adequate and sustainable pensions cannot be fully assessed in its absence.

The national pension policy should identify the government’s objectives and goals, including the following:

- The value of retirement income it seeks to provide and the percentage of income it expects the pension system to generate for individuals in retirement (expressed, for example, as a flat amount relative to the poverty line or as a percentage of salary, or some combination thereof);
- The level of coverage it seeks to attain (expressed as the percentage of the workforce in the organized and unorganized sectors);
- The relative extent to which pension provision is to rely on compulsory and voluntary employer-sponsored pension schemes, individual savings and investment, and other government programs; and
- The means of financing pension provision, including for persons who will be unable to participate in contributory retirement programs.

Extending the Reach of the NPS

An important first step toward a unified and inclusive pension policy framework for formal and informal sector workers was taken in 2004 when the government...
decided to bring new government employees into the NPS. There is considerable consensus already that the NPS is well suited to serve as a genuinely national pension system because it protects subscriber interests through an incentive-compatible architecture and a dedicated regulator, promotes ease of access, and provides flexible and attractive investment options and low transaction costs. The use of the NPS as a policy tool to implement pension reforms can be broadened and strengthened by extending it to salaried private sector employees covered by legislated pension and provident fund arrangements on a mandatory basis, as well as to salaried workers participating in voluntary, employer-sponsored superannuation and provident fund arrangements.

**Increasing Portability**

At an institutional level, existing pension and retirement saving programs should be required to outsource scheme administration and the management of individual subscriber records to the Central Recordkeeping Agency regulated by the PFRDA. Similarly, the management of aggregated voluntary and compulsory retirement contributions by salaried workers should be managed by PFRDA-regulated pension fund managers. Salaried workers should be able to use their employers’ or PFRDA-regulated points of presence (primarily banks) to access information on their retirement account balances as well as periodic account statements. Through this strategy, salaried employees in large private or public sector firms would begin to enjoy the same portability rights, as well as product and fund manager choices, that are already available to civil servants and others participating in the NPS. As a result, salaried workers would be able to switch employers or locations, or move from formal to informal or self-employment, without any administrative overhead related to their individual retirement accounts.

Policy implementation may be phased in by providing such employees with an initial voluntary option for switching their existing retirement savings from publicly or privately managed, DC pension, provident fund, and superannuation plans to NPS products. These employees may also be provided with the right to continue using the existing fund-management services of EPFO or other pension and Provident Fund administrators. The task of enforcing mandatory contributions by both employees and employers should continue to rest with the EPFO and other pension and Provident Fund administrators. This policy option has obvious equity benefits because it would provide India’s formal and informal sector workers with a uniform and well-regulated retirement savings arrangement, and identical rights and choices for maximizing their retirement incomes.

**Looking after Stakeholders**

The implementation of a larger reform will need to be carefully staged so that the government, the PFRDA, and pension sector stakeholders can adapt effectively. Special attention should be paid to stakeholders upon whom much of the success or failure of the reforms will rest, especially with respect to schemes that are established on a voluntary basis. These stakeholders include financial institutions
and other service providers that may assist employers in managing their schemes and scheme assets, as well as the employers themselves and their employees. An effective communication and education campaign would be required to inform and educate salaried workers about new product options, as well as their rights and responsibilities as subscribers to market-linked retirement products with variable returns.

Improving the Governance of Mandatory Occupational Pensions

The mandatory occupational pension programs administered by the EPFO will also need to be reformed: they currently deliver inadequate terminal accumulations as a result of conservative investment policies, suboptimal returns, inefficient administration, liberal preretirement withdrawals, and poor subscriber information and service quality. In parallel, the governance of these schemes needs to be radically improved. In contrast to many countries, India already has a well-established body of financial sector regulations, and many of the key regulatory concepts are already present within its legal framework. As a result, there is sufficient capacity to rapidly build a robust regulatory and supervisory framework for these occupational pension schemes.

The reform process for these schemes will involve a combination of parametric, procedural, and systemic changes. Parametric reforms could aim to increase the types and value of benefits paid to “adequate” levels. Procedural reform would aim to improve administration, operations, governance (including member rights and entitlements), and the manner in which investment decisions are made to strengthen the security and sustainability of the programs. Systemic reform may include issues of regulation as well as fundamental changes in the design of benefit arrangements.

REFERENCES


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CHAPTER 17

Pension Reform Experience in Indonesia

IENE MULIATI AND MITCHELL WIENER

INTRODUCTION

The government of Indonesia will implement a new National Social Security System (referred to as Sistem Jaminan Sosial Nasional or SJSN) during the three years beginning in 2013 that, when fully implemented, will radically transform the structure of the social security system in Indonesia. The legal bases for these changes are Law No. 40/2004 on the National Social Security System (referred to as the SJSN law) and Law No. 24/2011 on Social Security Administrative Bodies (referred to as Badan Penyelenggara Jaminan Sosial or the BPJS law).

The SJSN law was enacted in 2004 and created five national social security programs—a health program and four employment programs (work accident, old-age savings, pension, and death benefits) that will eventually cover all Indonesians, including formal and informal sector workers, and provide the same benefits for all. The bodies formed under the BPJS law will be responsible for collecting contributions from workers, employers, and the government to finance promised benefits, and contributions will be placed in separate social insurance funds for each program. Formal sector workers and their employers will make contributions as a percentage of wages; informal sector workers will contribute a flat amount in rupiah (Rp) and the government will make contributions for the poor that will also be a flat amount in rupiah.

The enactment of the BPJS law in November 2011 marked the end of a long debate about the administration of the national social security programs and cleared the way for the design and implementation of those programs. The BPJS law established BPJS Kesehatan (BPJS Health) to administer the SJSN health program and BPJS Ketenagakerjaan (BPJS Employment) to administer the SJSN employment programs. It transforms the current administrators, PT Askes (Persero) and PT Jamsostek (Persero), from state-owned enterprises to BPJS Health and BPJS Employment, respectively, and changes their legal form to public legal entities. By law, the BPJS are to start their operations on January 1, 2014. BPJS Health is to start offering the SJSN health program on January 1, 2014, while BPJS Employment is to start offering the SJSN employment programs on July 1, 2015.

The enactment of the BPJS law is a significant step in the implementation of the SJSN, but much work remains to be done. Since the enactment of the BPJS
law, the government has been working on road maps that will provide guidance for the implementation of BPJS and SJSN programs. The road map for the implementation of BPJS Health and the SJSN health program was launched in December 2012, while the road map for the implementation of BPJS Employment and the SJSN employment programs is expected to be launched and finalized in 2013.

This chapter discusses the effects of the implementation of the SJSN and BPJS laws on the Indonesian pension system. To understand the purpose and effect of the SJSN implementation, this chapter also gives a brief overview of the current programs and their challenges, a brief overview of the SJSN law and the BPJS law, key features of future SJSN programs, potential issues for its implementation, and key required actions for reform. This chapter is based on the SJSN law, the BPJS law, and discussions with the road map team and several members of the government who were responsible at the time for the implementation of the SJSN system. Although this chapter discusses critical issues and possible implementation actions, implementation remains at an early stage and much more work remains. This chapter primarily focuses on the two retirement programs (pension and old-age savings). Other programs covered by the existing system and the SJSN system, such as health, work-accident, and death benefits, may be briefly mentioned but are not included in the discussion in later sections of the chapter.

CURRENT PENSION SYSTEMS IN INDONESIA

Historical Context

Pension programs were offered to civil servants during the Dutch occupation period and were reaffirmed in 1956 when the president enacted a law on pension spending. Civil service pension rules were once again revised in 1969 with the issuance of Law No. 11/1969, which is still in effect. Civil servants and the armed forces participate in defined-benefit (DB) schemes only and receive pre- and postretirement life insurance, lump sum benefits, and monthly pensions after retirement. Pension programs for civil servants and members of the armed forces are very much the same although they are based on different laws.

The issuance of the civil service pension law in 1969 and the introduction of tax incentives for pensions in 1983 created interest among social organizations and state-owned enterprises in providing pensions to their employees and resulted in the establishment of Yayasan Dana Pensiun (a form of nonprofit foundation under the civil code that managed pension programs) and supported the growth of pension funds in Indonesia.

Formal private sector workers have been participating in a scheme providing lump sum benefits at retirement since 1977. The scheme was initially established as endowment insurance bundled in a social insurance program for formal sector workers. It was run by PT Astek (Persero), a state-owned company. The scheme was changed to a provident fund in 1992 when Law No. 3/1992 on social security programs for workers was enacted. At that time, PT Astek (Persero) was
changed to PT Jamsostek (Persero), which then assumed responsibility for managing the provident fund. There are four programs—old-age savings, death benefits, work accident, and health insurance. Employers can opt out of PT Jamsostek’s health program if they provide a separate health program with the same or better benefits. PT Jamsostek programs are mandatory for companies with more than 10 employees or with a monthly payroll of at least Rp 1 million (approximately US$100).

The existence of private pension funds can be tracked back to the early 1970s, when several employers registered their pension funds with the Minister of Finance. Law No. 11/1992 (referred to as the Pension Fund Law) was introduced to regulate voluntary occupational private pension programs offered by private sector employers to their workers, to provide voluntary pension funds for individuals, and to emphasize the importance of voluntary private pension funds in providing old-age income. A pension fund is a separate legal entity from its founder and cofounder(s). This specification is made to ensure the separation of pension assets from the assets of the founders and cofounders. The law also stipulates two types of pension funds, which are further defined by the following government regulations:

- Government Regulation No. 76/1992 concerning Employer Pension Funds, which can offer either DB or defined-contribution (DC) programs to employees of the sponsoring employer or employees of a cosponsor.
- Government Regulation No. 77/1992 concerning Financial Institution Pension Funds, which are DC programs open to employees and the self-employed who wish to accumulate retirement savings through supervised and regulated tax-sheltered group vehicles offered by approved banks and insurance companies.

To set up an Employer Pension Fund (EPF) or a Financial Institution Pension Fund (FIPF), the company has to apply for a legal license from the Ministry of Finance.

The issuance of Law No. 13/2003 on Labor (referred to as Labor Law 13/2003) required employers to provide mandatory termination indemnity DB plans to all permanent private sector employees, about one-third of the total workforce. Upon termination of employment, regardless of the reason, the employer is obliged to provide severance pay and long-service pay in a lump sum. The payment of severance benefits under Labor Law 13/2003 is solely the responsibility of the employer and is regulated under manpower rules.

Indonesia’s experience during the 1997–98 financial crisis showed that the country’s social protection system was not sufficiently robust to protect citizens against the severe ramifications of the financial crisis, which included a sharp drop in real GDP, large increases in unemployment, currency devaluation, and declining real wages and income. As a result, the Indonesian Constitution was amended.

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1In mid-2013, 1 U.S. dollar was approximately 9,929 Indonesian rupiah.
to require the establishment of a national system of social protection. In 2004, the government issued the SJSN law and planned to fully implement the system in 2009. However, the implementation process was delayed because of the lack of a law on social insurance administrators. Consequently, SJSN implementation did not begin until the BPJS law was enacted in November 2011.

**Issues with the Current Arrangements**

The SJSN and BPJS laws were enacted to implement the system required by the Indonesian Constitution and to solve several key shortcomings of the current system.

**Equity and sustainability**

The current pension system is fragmented and varies by labor market groups—civil servants, the military, and formal sector workers. As shown in Tables 17.1, 17A.1, and 17A.2 (see Appendix 17A), each segment has a different legal basis and different types of benefits and contributions, thereby creating inequality in membership and benefit coverage. Each segment also has a different administrator, and supervision and enforcement is a challenge. (The government also sponsors a variety of targeted social assistance programs for the poor and vulnerable; however, this chapter does not discuss these social assistance programs.)

As of 2012, only about 12 percent of the total labor force of 114 million was covered; much of the formal sector and the entire informal sector are not covered.

All civil servants and the military participate in the civil service pension program. PT Taspen data provide information on the employment structure for civil servants. As shown in Table 17.1, there were 4.5 million active civil servants and 1.9 million beneficiaries. Panel 1 of Figure 17.1 shows that active contributors peak with the 45–49 age group, resulting from past hiring patterns.

Panel 2 of Figure 17.1 shows beneficiaries as of December 2010. This distribution peaks with the 60–64 age group, but there are a significant number of beneficiaries who are 80 or older. Panel 2 also shows that female beneficiaries live longer than male beneficiaries. About 59 percent of beneficiaries are old-age or disability pensioners, and approximately 35 percent of beneficiaries are spouses of deceased workers. The remaining beneficiaries include children and parents.

Panel 1 of Figure 17.2 shows the change in the program’s dependency ratio. The dependency ratio—the ratio of the number of beneficiaries to the number of active contributors—was about 42 percent in December 2010. Under current conditions, this ratio will increase rapidly because of the temporary surge in retirement that will occur during the next 20 years, and less rapidly but continuously thereafter; it is expected to exceed 100 percent eventually if no change is made in the eligibility conditions for retirement.

Panel 2 of Figure 17.2 shows that growth in the number of civil servants and beneficiaries is sporadic and concentrated in certain years. In 2012, the workforce reduction was caused by a temporary moratorium on civil service recruiting. The
<table>
<thead>
<tr>
<th><strong>Normal retirement age</strong></th>
<th>Civil Service Pension</th>
<th>PT Jamsostek’s Old-Age Savings</th>
<th>Private Pensions</th>
<th>Mandatory Termination Allowance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>56 or age 50 with 20 years of service</td>
<td>55 or 5 years of contributions for termination</td>
<td>Commonly 55; maximum 60</td>
<td>As per prevailing law</td>
</tr>
<tr>
<td><strong>Program formula (percentage of pensionable wages)</strong></td>
<td><strong>Pensionable wages</strong></td>
<td>Basic salary plus family allowance</td>
<td>Basic salary plus family allowance</td>
<td>Basic salary plus family allowance</td>
</tr>
<tr>
<td><strong>Accrual rate</strong></td>
<td>2.5% for each year of service</td>
<td>5.7%</td>
<td>Maximum: DB: 2.5%/year; DC: 20%/year</td>
<td>Lump sum benefit varies by years of service</td>
</tr>
<tr>
<td><strong>Maximum</strong></td>
<td>75% of basic salary</td>
<td>n.a.</td>
<td>DB: 80%; DC: 20%/year</td>
<td></td>
</tr>
<tr>
<td><strong>Benefit payment mode</strong></td>
<td>Annuity benefit for life</td>
<td>Lump sum payment of accumulated contributions plus the declared rate of return on account balances and contributions</td>
<td>20% lump sum; 80% monthly pension for life</td>
<td></td>
</tr>
</tbody>
</table>

| **Contribution (percentage of pensionable wages)** | **Employee** | Formal sector worker: 2% | Formal sector worker: 2% of income (“income” set up at minimum wage level of Rp 1 million/month) | None |
| **Employer** | PAYG, varies by actual expenditure | Formal sector worker: 3.7% | The total contributions in a year shall not exceed 20% of pension base earnings | PAYG, fully paid by employer |

| **Coverage** | Number of participants | Formal sector workers: 9.3 million active contributors (2010) | Informal sector workers: Approximately 400,000 members in at least one of the four programs | 2.8 million active contributors (2010) |
|              | 1.9 million beneficiaries receiving pensions (June 2012) | 4.5 million active civil servants, that is, contributors (June 2012) |  |

| **Assets** | Total assets (Rp trillion) | 100 (including non-investment assets) | 99, based on PT Jamsostek annual report 2011 | 130 (2.03% of GDP) |
|            | Based on PT Taspen annual report 2011 | Based on PT Jamsostek annual report 2011 | Based on Bapepam LK Pension Fund Report 2010 | Based on Bapepam LK Pension Fund Report 2010 |
|            | None | None | None | None |

Source: Authors’ compilation.
Note: DB = defined benefit; DC = defined contribution; n.a. = not applicable; PAYG = pay as you go.
average growth rate of the number of active civil servants is less than the growth rate of civil service pension beneficiaries. This trend is likely to continue for another 10–15 years because the large number of civil servants hired in the mid-1970s and early 1980s are now reaching retirement age. Data on military and police personnel are not as readily available as for civil servants.

Although all civil servants participate in the civil service pension program, the current pension has an adequacy issue. The benefit is calculated using final base
pay, but results in only a small percentage of the total take-home pay received by civil servants, especially for mid-level to senior officials. Consequently, the pension benefit received by mid- to high-level officials can be highly inadequate compared with the total compensation they were receiving before retirement. For highly paid civil servants, pensions can be less than 20 percent of total pay at retirement. Thus, the current pension program does not guarantee adequate income following retirement, forces civil servants to look for other sources of retirement income, and may provide an incentive for corruption. Reform of the design is necessary to generate benefits that are equitable across all pay levels, to align it with the government’s reforms to the bureaucracy and to pay levels, and to ensure program sustainability.

Almost all formal sector employers and their workers are required to participate in the social insurance programs offered by PT Jamsostek (Persero). However, as of 2012, out of 34 million formal workers, only 10.9 million, or approximately 32 percent, participated in and actively contributed to PT Jamsostek’s old-age savings program, indicating high levels of evasion from the mandatory contribution requirement for this program. Table 17.2 shows the history of membership in PT Jamsostek’s old-age savings program. Total membership in PT Jamsostek’s old-age savings program for both active and inactive accounts has grown since 2006. However, the number of inactive accounts has grown more rapidly than active accounts. It is likely the number of inactive accounts will decrease sharply in 2014 and 2015 as these amounts are paid out in anticipation of the start of the SJSN old-age savings program and the transformation of PT Jamsostek (Persero) to BPJS Employment.

The number of employers participating in PT Jamsostek’s old-age savings program has also increased and at a more rapid rate than the number of participating workers. Consequently, the average number of active workers per active employer has dropped from 93.7 in 2006 to 69.9 in 2010. Inactive employers are

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2Active accounts are for those workers who are still making regular contributions to PT Jamsostek’s old-age savings program. Inactive accounts are for those workers who are no longer making regular contributions but who have not yet begun to withdraw their account balances.

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**TABLE 17.2**

<table>
<thead>
<tr>
<th>Membership in PT Jamsostek’s Old-Age Savings Program</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td><strong>Employee</strong></td>
</tr>
<tr>
<td>Active</td>
</tr>
<tr>
<td>Inactive</td>
</tr>
<tr>
<td><strong>Total</strong></td>
</tr>
<tr>
<td><strong>Employer</strong></td>
</tr>
<tr>
<td>Active</td>
</tr>
<tr>
<td>Inactive</td>
</tr>
<tr>
<td><strong>Total</strong></td>
</tr>
</tbody>
</table>

Source: Jamsostek (2011).
those that have become bankrupt or merged with another company. Note that inactive workers are not just employees of inactive employers. They can also be workers who have left employment with active employers and not received distribution of their account balances.

The benefit under PT Jamsostek’s old-age savings program is paid as a lump sum instead of as a monthly annuity. There is no guarantee that employees will invest this lump sum wisely for future income security after retirement. Furthermore, the PT Jamsostek account balance can be withdrawn if a worker becomes unemployed, has contributed to the program for five or more years and has been unemployed for six months or more. This capability further reduces the size of the account balance available at retirement.

Table 17.3 shows the reasons for payouts in 2010 and 2011. The vast majority of distributions are early withdrawals. The table clearly shows that the program is not serving its primary purpose of accumulating savings for retirement. It may also indicate system abuse; there is anecdotal evidence that workers leave to receive their accumulations and are quickly rehired, or they move from one covered employer to another and improperly receive their accumulated contributions.

In addition to PT Jamsostek’s mandatory program, formal workers may also participate in voluntary private pension programs sponsored by their employers. Table 17.4 provides information on private pension fund membership in both employer-sponsored and individual private pension programs under FIPF. It shows that the number of participants in employer-sponsored pension programs (DB and DC combined) is about equal to the number of participants in individual DC programs.

Table 17.5 shows that the numbers of employer-sponsored DB plans has been declining, but the number of such plans is still much larger than the number of employer-sponsored and individual DC programs combined. It also shows that many DB pension funds were shut down between 2006 and 2010, primarily because of employer bankruptcy, financial problems, and mergers and acquisitions. And as mentioned in the previous section, the introduction of mandatory severance pay has also affected the growth of private pension funds in Indonesia.

### TABLE 17.3

<table>
<thead>
<tr>
<th>Type of Claim</th>
<th>2010</th>
<th>Share (percent)</th>
<th>2011</th>
<th>Share (percent)</th>
<th>Growth rate (percent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age of 55 years</td>
<td>61,816</td>
<td>7.12</td>
<td>66,332</td>
<td>7.33</td>
<td>7.31</td>
</tr>
<tr>
<td>Leaving Indonesian territory</td>
<td>633</td>
<td>0.07</td>
<td>636</td>
<td>0.07</td>
<td>0.47</td>
</tr>
<tr>
<td>Permanent disability</td>
<td>45</td>
<td>0.01</td>
<td>43</td>
<td>0.00</td>
<td>–4.44</td>
</tr>
<tr>
<td>Becoming state official</td>
<td>12,333</td>
<td>1.42</td>
<td>7,897</td>
<td>0.87</td>
<td>–35.97</td>
</tr>
<tr>
<td>Five years of membership</td>
<td>773,311</td>
<td>89.12</td>
<td>808,150</td>
<td>89.31</td>
<td>4.51</td>
</tr>
<tr>
<td>(early withdrawal)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Passed away</td>
<td>19,585</td>
<td>2.26</td>
<td>21,869</td>
<td>2.42</td>
<td>11.66</td>
</tr>
<tr>
<td>Total</td>
<td>867,723</td>
<td>100.00</td>
<td>904,927</td>
<td>100.00</td>
<td>4.29</td>
</tr>
</tbody>
</table>

Source: Jamsostek (2012).
### TABLE 17.4
Numbers of Participants and Beneficiaries of Employer Pension Fund and Financial Institution Pension Fund

<table>
<thead>
<tr>
<th>Description</th>
<th>Year</th>
<th>Increase/Decrease</th>
<th>Persons</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Active participants of Employer Pension Fund</td>
<td>923,023</td>
<td>903,981</td>
<td>-19,042</td>
<td>-2.1</td>
</tr>
<tr>
<td>(2) Inactive participants of Employer Pension Fund</td>
<td>455,965</td>
<td>478,760</td>
<td>22,795</td>
<td>5.0</td>
</tr>
<tr>
<td>a. Pensioners</td>
<td>289,488</td>
<td>305,515</td>
<td>16,027</td>
<td>5.5</td>
</tr>
<tr>
<td>b. Widows and widowers</td>
<td>96,271</td>
<td>101,594</td>
<td>5,323</td>
<td>5.5</td>
</tr>
<tr>
<td>c. Children</td>
<td>2,850</td>
<td>2,898</td>
<td>48</td>
<td>1.7</td>
</tr>
<tr>
<td>d. Deferred vested employees</td>
<td>67,356</td>
<td>68,753</td>
<td>1,397</td>
<td>2.1</td>
</tr>
<tr>
<td>(3) Participants of Employer Pension Fund: (1) + (2)</td>
<td>1,378,988</td>
<td>1,382,741</td>
<td>3,753</td>
<td>0.3</td>
</tr>
<tr>
<td>(4) Active participants of Financial Institution Pension Fund</td>
<td>1,197,065</td>
<td>1,322,684</td>
<td>125,619</td>
<td>20.0</td>
</tr>
<tr>
<td>a. Individual participants</td>
<td>461,359</td>
<td>546,270</td>
<td>84,911</td>
<td>10.5</td>
</tr>
<tr>
<td>b. Group participants</td>
<td>735,706</td>
<td>776,414</td>
<td>40,708</td>
<td>18.4</td>
</tr>
<tr>
<td>(5) Inactive participants of Financial Institution Pension Fund (deferred vested)</td>
<td>105,180</td>
<td>112,572</td>
<td>7,392</td>
<td>7.0</td>
</tr>
<tr>
<td>(6) Numbers of Financial Institution Pension Fund participants: (4) + (5)</td>
<td>1,302,245</td>
<td>1,435,256</td>
<td>133,011</td>
<td>10.2</td>
</tr>
<tr>
<td>Total numbers of pension fund participants: (3) + (6)</td>
<td>2,681,233</td>
<td>2,817,997</td>
<td>136,764</td>
<td>5.1</td>
</tr>
</tbody>
</table>


### TABLE 17.5
Number of Private Pension Programs in Indonesia

<table>
<thead>
<tr>
<th>Description</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Active Private Pension Funds</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employer Pension Funds, defined-benefit plan</td>
<td>235</td>
<td>226</td>
<td>216</td>
<td>210</td>
<td>208</td>
</tr>
<tr>
<td>Employer Pension Funds, defined-contribution plan</td>
<td>37</td>
<td>36</td>
<td>39</td>
<td>41</td>
<td>40</td>
</tr>
<tr>
<td>Financial Institution Pension Funds</td>
<td>25</td>
<td>26</td>
<td>26</td>
<td>25</td>
<td>24</td>
</tr>
<tr>
<td>Total</td>
<td>297</td>
<td>288</td>
<td>281</td>
<td>276</td>
<td>272</td>
</tr>
<tr>
<td><strong>Terminated Private Pension Funds</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employer Pension Funds, defined-benefit plans</td>
<td>68</td>
<td>77</td>
<td>88</td>
<td>96</td>
<td>98</td>
</tr>
<tr>
<td>Employer Pension Funds, defined-contribution plans</td>
<td>23</td>
<td>26</td>
<td>26</td>
<td>28</td>
<td>29</td>
</tr>
<tr>
<td>Financial Institution Pension Funds</td>
<td>10</td>
<td>11</td>
<td>11</td>
<td>12</td>
<td>13</td>
</tr>
<tr>
<td>Total</td>
<td>101</td>
<td>114</td>
<td>125</td>
<td>136</td>
<td>140</td>
</tr>
</tbody>
</table>


Labor Law No. 13/2003 requires employers to pay DB termination indemnities to permanent employees upon termination. The benefit under the law varies by years of service. The law does not require funding of the severance pay benefit, but its accrued liability and accounting expenses must be recognized in the company’s financial statements. This requirement can have a significant effect on a company’s net worth and profitability, particularly for publicly listed companies. For those companies that were providing employer-sponsored private pension
plans before enactment of the law, it meant additional labor costs. Therefore, some companies simply terminated their private pension programs or postponed their plans to provide them to their employees, eroding the growth of private pension programs. Because the benefit is not funded, workers cannot be sure they will receive benefits on employment termination.

In addition, because the severance pay benefit is paid as a lump sum, it is unlikely employees will save it for retirement, but rather will spend it immediately. Therefore, the purpose of securing income following retirement is also not met.

Informal workers can voluntarily participate in the PT Jamsostek program. However, as of 2012, out of 80 million informal workers, fewer than 1 million participated. Thus, most informal sector workers, who constitute approximately 60 percent of the total labor force, are uncovered. This lack of coverage creates significant inequality between the formal and informal labor forces and is a serious threat to Indonesia’s goal of providing social protection and reducing poverty in Indonesia given that informal workers are usually the most vulnerable to economic shocks.

The aging of the population may also create another issue for Indonesia’s pension program. Life expectancy in Indonesia has improved significantly. World Bank data show that in 2010, Indonesians’ life expectancy at birth was 71. However, current retirement ages in Indonesia (usually 55 or 56 years old) are quite low relative to life expectancy. Figure 17.3 shows Indonesians’ life expectancy at ages 20, 56, 60, and 65 for men and women.

Figure 17.3  Life Expectancy by Age and Gender

![Life Expectancy by Age and Gender](image)

Retirement ages currently vary significantly by program and type of group. The standard retirement age for civil servants is 56, but can be extended for certain positions to 60, 62, 65, or 70 based on the government’s needs. Civil servants can retire as early as age 50 with a minimum of 20 years of service. More than 1 million civil servants are age 50 or older and approaching the standard retirement age of 56, so most of the group is already eligible for immediate retirement without actuarial reduction (see panel 1 of Figure 17.1). There will be a surge in retirement during the next 20 years.

Most private sector employees retire at age 55 but some are eligible for early retirement as early as age 45. Low retirement ages result in short contribution periods and longer periods for receiving benefits, putting significant pressure on the system. Therefore, the retirement age needs to be increased now, and increased further as life expectancy improves, for the system to be able to pay adequate benefits and maintain fiscal sustainability.

### Governance: Lack of oversight and transparency

Current reporting procedures for the civil service pension program do not give an accurate and transparent view of the financial status of the program. Cash accounting is used for pension expenses in the government’s financial statements. Although pay-as-you-go (PAYG) funding is acceptable, PAYG accounting is not consistent with international accounting principles and does not allow accounting costs to be easily and equitably allocated to subnational government units. Proper disclosure of the program’s unfunded liability, expenses for accruing pension benefits, and interest expenses is necessary. See Table 17.6 for the civil service pension system’s report of assets.

The PT Jamsostek provident fund has also been under public observation for years, and employer associations, labor unions, and international organizations have criticized its design and operation. Disclosure was poorly managed by PT Jamsostek (Persero) until recently. Although it now publishes annual financial statements in national newspapers, it has not satisfactorily informed the public about the management of its assets and liabilities. Moreover, disclosure of benefit information to participants is also lacking. Some participants may have received an individual benefit statement but the majority do not know the amount of their contributions and accumulated account balances.

At about 2 percent of GDP, Indonesia’s ratio of pension assets to GDP is lower than in neighboring countries. That said, a higher ratio of pension assets to GDP

### Table 17.6

<table>
<thead>
<tr>
<th>Assets and Investments (billion Rp)</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Investment assets</td>
<td>30,063</td>
<td>34,868</td>
<td>48,190</td>
<td>62,559</td>
<td>81,314</td>
</tr>
<tr>
<td>Non-investment assets</td>
<td>6,937</td>
<td>9,317</td>
<td>12,472</td>
<td>14,608</td>
<td>18,683</td>
</tr>
<tr>
<td>Total assets</td>
<td>37,001</td>
<td>44,186</td>
<td>60,661</td>
<td>77,167</td>
<td>99,997</td>
</tr>
</tbody>
</table>

guarantees neither the adequacy of a pension system nor a higher rate of economic growth. Rather, adequacy depends on the pension system structure itself, the development of local capital markets, and other factors. Nonetheless, the lack of pension asset management supervision, control, and transparency under the mandatory pension plans is a major impediment to pension asset growth, especially for the civil service pension program and PT Jamsostek’s old-age savings program. Only private pension programs are strictly regulated by the Ministry of Finance. Good governance and investment policy requirements for private pension programs are set out clearly by the Ministry of Finance, and annual reporting by independent professional auditors and actuaries is required at least once every three years.

**REFORMING THE PENSION SYSTEM**

**Drivers of Pension Reform**

As noted, the 1997–98 financial crisis, together with the shortcomings in the current pension systems, led to recognition of the need to reform the pension system and to the enactment of the SJSN and BPJS laws. Changes are needed to extend coverage, ensure programs meet their objectives, ensure program fiscal sustainability, and improve the overall governance and transparency of the pension system.

However, changes in demographics and culture, a move toward greater democracy and decentralization, and Indonesia’s emergence as a middle-income country with a growing middle class have also been key contributors to the need for reform. Indonesia needs to change its systems and institutions to support its needs as a democratic and rapidly growing middle-income country. Key changes driving the need for reform include the following:

- **Changing demographics.** Declining mortality and fertility rates have led to major demographic changes in Indonesia and elsewhere in the world. Life expectancy is increasing at the same time that the total fertility rate is declining, leading to rapidly aging societies. This phenomenon will lead to a large increase in the number of elderly and the requirement for an adequate pension system to meet their income needs. It will also increase pressures on the country’s pension systems as fewer and fewer workers must support an ever-increasing number of elderly.

- **Change in social culture.** Urbanization and the decline in the number of children have changed the family and social structures in Indonesia. There are now fewer children to help support their elderly parents than in the past. Children are also leaving their villages and moving to cities in search of more lucrative employment opportunities. Consequently, the family support system is not as robust as in the past and there is a greater need for the state to assist with the establishment of programs and institutions to care for the elderly.
• **Economic growth and the emergence of democracy.** Indonesia has enjoyed robust economic growth since its recovery from the 1997–98 financial crisis, the fall of the Suharto regime, and the emergence of more inclusive political institutions. Indonesia’s entry into the Group of 20 created another economic advantage for the country. Indonesia’s more robust economy also minimized the impact of the 2008 global financial crisis, and rapid growth continued. Indonesia needs a pension system that will support and help it sustain its economic growth.

• **Sustained and inclusive economic growth.** Indonesia has successfully moved from being a low-income country to being a middle-income country. To help avoid the middle-income trap, avoid increases in income inequality, and sustain inclusive economic growth, Indonesia has developed integrated economic growth and poverty reduction master plans to support Indonesia’s Millennium Development Goal objectives and to ensure income protection and opportunity for all. National social protection programs that extend social insurance coverage to the entire labor force and social assistance programs targeted to the poor and vulnerable are major components of any strategy for and an investment in inclusive and sustained economic growth.

• **Improved government capacity.** As a middle-income country, Indonesia’s civil service will be expected to provide greater and more professional services for the population. Meeting these expectations will require a significant increase in the government’s capacity to design, implement, and administer programs to sustain economic growth and social development. As the country makes the transition from low to middle income, the role of the government in social protection will change from social income provider to a combination of social income provider for the poor and vulnerable and regulator of public and private social protection systems to meet the needs of Indonesia’s emerging middle- and upper-class citizens. Successfully making this transition will require the development of much stronger and more sophisticated risk-management capacity within the government of Indonesia.

• **Expanded financial literacy.** As a result of economic growth, Indonesia has developed a significant middle class who are more educated, have different needs, and have more money to set aside for retirement. The government cannot meet all of the income protection needs of the country through public programs. Citizens will need to supplement government programs with private savings. Increasing citizen responsibility will require the development of a culture of financial planning and asset management. This step is also necessary to ensure the financial independence and the growth of the private sector. By its constitution, the country is obliged to provide basic protection for its people so they can live with dignity. However, the private sector will need to supplement government services and benefits to relieve fiscal pressure on the government; at the same time, industry must be strictly supervised to educate and protect the public.
Current Reform

Increasing coverage, improving benefits, and ensuring fiscal sustainability are key goals of the pension reform, but establishing the administrative systems and governance structures needed to protect program assets and ensure system efficiency and accuracy is equally important. Key administrative issues include the use of unique identification (ID) numbers by both the BPJS and by the organizations working with the social security administrators and an improved process for governance of the assets in the social security system. More clarity is needed for how the governance structure under the new laws will work in practice. The SJSN and BPJS laws establish a very different governance structure, moving away from a structure based on for-profit administrators reporting to the Ministry of State-Owned Enterprises to a model based on not-for-profit public entities reporting to the president and managing social security trust funds on behalf of participants.

Key features of reform

The BPJS law establishes the governance and administration of the national social security programs. The key provisions of the law are outlined below:

- **Transformation of the current administrators into the BPJS.** Under the law, the BPJS will be a public legal entity that is responsible to the president. Unlike the current social security administrators, the BPJS will not be for-profit state-owned enterprises, and the Ministry of State-Owned Enterprises will no longer be responsible for supervising their activities. This brings Indonesia into compliance with established international practice. Social insurance programs should not be a profit center for the government. Rather, they should be established to protect citizens against financial and macroeconomic risk. PT Taspen and PT Asabri (the administrators of the social insurance programs for civil servants and the military, respectively) will be transformed much later, but before 2029. In many countries, civil servants and the military have separate programs from the rest of the population, and Indonesia will need time to integrate these groups into the national social security system.

  In establishing the BPJS, the assets, liabilities, employees, rights, and obligations of the current administrators will be transferred to the BPJS. The government will also pay in initial capital of not more than Rp 2 trillion each of BPJS Health and BPJS Employment.

- **Governance structures of the BPJS.** The BPJS law defines a governance structure with a typical Indonesian two-board setup. The Board of Commissioners will consist of seven members including two government representatives, two employee representatives, two employer representatives, and one public figure. The Board of Directors will consist of at least five members selected on the basis of professional qualifications.

  Members of both boards serve five-year terms and can be nominated for a second five-year term. For the first two years, the boards of the BPJS will be the same as the boards of PT Askes and PT Jamsostek.
• Distinction between the assets of social security funds and the assets of the BPJS. The BPJS law improves the legal and financial structure of the social insurance system by legally separating the assets of the BPJS from the assets in the social security funds. The government must first decide on the benefits to be provided under each of the five programs and the required contribution rates. These contributions should be sufficient to fully pay for all benefits and administrative costs for that program. No cross-subsidies among social security funds are permitted.

Contributions from employers, workers, and the government and investment income on those contributions will be placed in the appropriate social security fund. These assets can only be used to pay benefits to participants and pay for administrative expenses. The assets in these funds are managed by the BPJS but do not belong to the BPJS. Social security fund assets will be held at the state-owned custody bank.

The BPJS’s own assets come from several sources—paid-in capital from the government, assets transferred from PT Askes and PT Jamsostek, and fees charged by BPJS to the social security funds for its administrative services. The BPJS can charge fees equal to a percentage of contributions or a percentage of investment income (or both) to cover its administrative costs for each of the five programs. This structure is similar to that of Indonesia’s mutual funds and private pension funds.

The separation of administrator and fund assets in different legal entities and the use of a custodian to hold fund assets are important safeguards for fund members and are consistent with international best practice. In theory, this ensures that BPJS creditors cannot seize fund assets, keeps the BPJS from having direct control of the assets that belong to members, and allows the custodial bank to review the financial transactions requested by the BPJS to ensure they comply with the law. Additional regulations will be needed to ensure the system operates as intended.

• Risk management. It is important for the government of Indonesia to ensure that the financial risks of the social insurance programs are properly managed. If the contribution rates are set too low relative to promised benefits, or if the contributions and benefits are not periodically adjusted, or if program funds are mismanaged, the social security funds could become insolvent. This prospect creates a potentially large contingent liability for the state budget, which is the ultimate guarantor of fund solvency. Consequently, the government has a strong incentive to ensure the programs are properly managed. This will require the creation of risk-management capability within the government and strong supervision and control of BPJS operations to prevent fraud and corruption, ensure proper financial management, and control operational expenses.

• Supervision of BPJS. BPJS activities will be subject to both internal and external supervision. The BPJS will be supervised internally by the Board of Commissioners and an internal audit department. In addition, it will be
supervised externally by the National Social Security Council, the new Financial Services Authority, and the State Financial Audit Board.

- **Administrative system.** BPJS’s responsibilities will include registration of employers and workers (in both the formal and informal sectors); assignment of identification numbers to all members; collection of contributions in cooperation with other government agencies, local governments, and state-owned enterprises (with only public organizations allowed to be involved in the collection of contributions); application of sanctions to nonpayers; processing of claims; verification; monitoring; and reporting. The reporting procedures for BPJS include a requirement to submit to the president semiannual and annual reports. The BPJS must also inform participants about their rights and, at least once per year, the benefits they have earned in the pension and old-age savings programs.

The BPJS is also required to manage the investment of social security fund assets and establish technical reserves based on standard actuarial practice. Finally, at all times, the BPJS must operate the social insurance programs in the best interests of the participants.

**Issues with current reform**

The SJSN and BPJS laws offer general guidance but leave much of the specifics to regulations, and significant information is contained in the elucidation of the law rather than in the text of the law itself.

**Equity and sustainability.** One of the primary purposes of the SJSN law is to mandate universal coverage of the formal sector for the SJSN pension program and universal coverage of the entire labor force for the old-age savings program. Because the pension program is mandatory for the formal sector only, informal sector workers will not be eligible to participate and receive monthly lifetime pension benefits. The government may wish to consider offering separate non-SJSN income-protection programs on a targeted or universal basis to informal sector workers. In the long term, the government may want to consider requiring informal sector participation in the SJSN pension system.

In a country in which 65 percent of workers are in the informal sector, achieving universal coverage in an old-age savings program based on payroll contributions is virtually impossible. The informal sector is likely to evade the contribution requirement even though the programs are (theoretically) mandatory. To reach high coverage levels, the program must provide benefits that the informal sector needs and wants, those benefits must be provided at a cost that is affordable, and the process of applying for and receiving benefits must be easy and reliable.

The SJSN law does not define the level of benefits under the DB pension program or the level of required contributions to the DC old-age savings program. The new benefit designs and contribution rates for SJSN pension and old-age savings
programs will need to take into account the different characteristics, needs, ability, and willingness to pay contributions of formal and informal sector workers. All these factors will be set by government regulation. The decisions on program design, including levels of benefits and contributions, will have to be made in a highly political atmosphere. Politicians may try to seek short-term gains by offering high benefits with lower than necessary contribution rates and leave financial problems to future generations.

Fiscal sustainability of pension programs depends largely on the number of workers relative to the number of participants receiving pensions. This ratio tends to decrease rapidly in countries that are aging and thus requires adjustments in benefits, contribution rates, or both. Figure 17.4 shows that after 2030, the population begins to age rapidly. The proportion of the population ages 60 and older increases rapidly, while the percentages of the population that are children or are of working age decrease significantly. Population aging will make the financing of the SJSN pension program difficult. On a PAYG basis, the costs of the SJSN pension program, which requires 15 years of contributions to receive a lifetime pension, will start out very low and will grow rapidly as the number of pensioners increases, the population ages, and the system matures.

Life expectancy (average of male and female) at retirement age is expected to increase significantly during the next 50 years. This increase in life expectancy has significant implications for pension program design and financing. It means if retirement ages are not increased, benefits will be paid for ever-increasing periods of time and will require increases in contribution rates, decreases in benefit levels, or both.

**Figure 17.4** Population by Age Ranges (Percent)

The design of the SJSN’s old-age savings and pension programs will have to take into account the following factors:

- It should be recognized that DB programs favor women and vulnerable groups. The primary purpose of pensions is to prevent elderly poverty. Those older than age 80 are predominantly female and often live alone. Because DB pensions guarantee income for life and women generally live longer than men, these programs are vital for women. DB plans can guarantee lifetime income to spouses of breadwinners who die young, as well. Because women have lower labor force participation rates, survivor benefits are more crucial for women than for men. DB programs also help other vulnerable members of the population such as the disabled and the underemployed. Program design can help those with low pay or short service and can give service credit to those who are out of the labor force to raise children or for other reasons.

- Conversely, DC plans are not favorable to vulnerable groups, including women. Benefits are based only on the accumulated account balance. Those with low pay, higher periods of absence from the labor market or with high periods of unemployment, and those who become disabled or the survivors of people who die at young ages also receive only their accumulated account balance, which is likely to be inadequate.

**Governance structures.** Although the BPJS reports to the president, it is not clear who in the president’s office will actually be responsible for supervision and control of its operations. The National Social Security Council is responsible for synchronizing the administration of the SJSN system, but it is not clear what its specific functions are. The law also states that the new Financial Services Authority is responsible for external supervision, but does not clarify its functions. Given the huge amounts of money that will flow into the two BPJSes and the critical role they will play in the social protection system for the country, the roles, functions, accountability, and responsibility for each of the supervisory bodies must be clearly stated in writing and agreed to by all parties.

**Organizational transformation and readiness.** Significant changes in PT Jamsostek’s legal, governance, and organizational structures; job descriptions; business processes; and information technology systems will be needed as it transforms from a state-owned organization managing programs for a particular labor market segment to BPJS Employment managing nationwide programs covering thousands of employers and millions of informal sector workers. BPJS Employment will also need to implement a new pension program and manage an old-age savings program that will eventually be significantly larger than the existing old-age savings program that it manages today.

For the social security programs to be properly administered, it is important that everyone receives a unique ID number. The Ministry of Home Affairs is working on an electronic ID program, but the time frame for its rollout is unclear. It likely will not be ready in time for the start of the SJSN health program. This
means that BPJS Health will likely need to develop a separate ID number solely for the SJSN system. Once again, it makes no sense for the two BPJSes to separately issue ID numbers. Instead, BPJS Health and BPJS Employment must work together to ensure that the ID numbers are issued and are unique—everyone has one and only one number.

Another set of concerns relates to the collection of contributions. The first issue is unnecessary duplication—both BPJSes are charged with collecting contributions from the same employers and individuals. A second issue is making sure that the required contributions are paid on time and in the correct amount. It is good that the BPJSes have been given the right to impose administrative sanctions for non-compliance. PT Jamsostek does not have that authority, making enforcement difficult and leading to widespread evasion. Despite the availability of administrative sanctions, collecting from millions of informal sector workers individually and from micro-enterprises will prove very challenging.

Program design and contributions required and their impact on the labor market. It is important to understand that social insurance programs—programs that are financed by payroll taxes on employers and workers—raise serious labor market, labor relations, and macroeconomic issues. Employers and workers will both be required to pay contributions to the health, pension, and old-age savings programs, while the work accident and death benefit programs will be fully financed by employers. These contributions will be a percentage of covered payroll. If benefit programs are too generous, then the contribution rates could be high enough to create hiring disincentives. The payroll taxes, in combination with the recent large increase in minimum wages in some parts of the country and new restrictions on outsourcing and contract employment, could have a serious negative impact on employment.

Indonesian policymakers need to be realistic about the true cost of the government’s social security programs and the affordable level of benefits. If programs are properly priced, employers and workers will be forced to make a choice between paying higher contributions or receiving smaller benefits.

Impact on the growth of private pension programs. Opting out of the SJSN social insurance programs will not be allowed, which may discourage employers who already have voluntary pension programs from continuing them. The total costs of pension promises may become too high for employers to bear. Because the pension benefit formula and level of contributions to the old-age savings fund are not prescribed in the draft law, but must be developed in supplemental regulations, early assessment of total costs is not yet possible. If pension benefits and old-age savings fund contributions are set high in government regulations, the existence of voluntary pension programs will be adversely affected. Employers will tend to satisfy their obligation to the mandatory program before funding voluntary ones.

The commercial interests of banks and life insurance companies may also be affected by the implementation of the SJSN system. While making pension
programs compulsory and publicly managed may help avoid adverse selection, centralizing the management of fund assets with the government may destroy the pension businesses of banks and life insurance companies; therefore, the government should carefully consider its role and that of the private sector and individuals in securing future income protection.

**Tax.** Taxation of contributions and benefits is not described in the legislation. The BPJS managing the programs will be not-for-profit entities and will not be taxed at all. Although it is understood that taxation is more appropriately taken care of within tax legislation, a proper description of the general framework of taxation may avoid ad hoc treatment, which has frequently plagued all of the existing pension programs and is one of the contributing factors to the low rate of participation in the voluntary pension schemes.

**CONCLUDING COMMENTS**

The enactment of the BPJS law is a significant step in the implementation of a social protection system for all Indonesians. However, much work remains to be done to design the individual programs, calculate appropriate contribution rates, and properly manage the governance and financial risks associated with these programs.

The government of Indonesia should learn from other countries’ experiences, especially from those countries whose systems have already been in operation for more than 15 years. It is also necessary to conduct regular socialization on program design and proposed contribution rates so employers and workers are aware of the program’s benefits and requirements. This is particularly important to avoid any misperceptions about the system that can be exploited for political purposes.
### APPENDIX 17A. STRUCTURE AND BENEFITS OF THE CURRENT AND SJSN PROGRAMS

#### TABLE 17A.1

<table>
<thead>
<tr>
<th>Type of Program</th>
<th>Type of Worker</th>
<th>Programs</th>
<th>Status</th>
<th>Administrator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Civil Service Pension</td>
<td>Civil servants</td>
<td>Pension–DB</td>
<td>Mandatory</td>
<td>PT Taspen</td>
</tr>
<tr>
<td></td>
<td></td>
<td>THT</td>
<td>Mandatory</td>
<td></td>
</tr>
<tr>
<td>Military and police</td>
<td></td>
<td>Pension–DB</td>
<td>Mandatory</td>
<td>PT Asabri</td>
</tr>
<tr>
<td></td>
<td></td>
<td>THT</td>
<td>Mandatory</td>
<td></td>
</tr>
<tr>
<td>PT Jamsostek’s Old-Age Savings</td>
<td>Private sector workers</td>
<td>DC:</td>
<td>Mandatory, except for health (opt out is possible)</td>
<td>PT Jamsostek, but PT Jamsostek optional for health</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Work-accident</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Old-age savings</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Death benefits</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Health</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Informal sector workers</td>
<td>DC:</td>
<td>Voluntary</td>
<td>PT Jamsostek</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Work-accident</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Old-age savings</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Death benefits</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Health</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voluntary Occupational Private Pension</td>
<td>Private sector workers</td>
<td>DB or DC</td>
<td>Voluntary</td>
<td>EPF</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DC</td>
<td></td>
<td>FIPF</td>
</tr>
<tr>
<td>Mandatory Termination Allowance</td>
<td>Private sector workers</td>
<td>DB</td>
<td>Mandatory</td>
<td>None</td>
</tr>
</tbody>
</table>

Source: Authors’ compilation.

Note: BPJS = Badan Penyelenggara Jaminan Social; DB = defined benefit; DC = defined contribution; EPF = Employer Pension Fund; FIPF = Financial Institution Pension Fund; SJSN = Sistem Jaminan Sosial Nasional; THT = Endowment Savings Program.
### TABLE 17A.2

**Structure and Benefits of Future Programs**

<table>
<thead>
<tr>
<th>Type of Program</th>
<th>Type of Worker</th>
<th>Future System (SJSN)</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Civil Service Pension</td>
<td>Civil servants</td>
<td>• Health • Work-accident • Old-age savings • Pension • Death benefits</td>
<td>Mandatory • BPJS Health for health program • BPJS Employment for employment programs Voluntary supplemental program may be provided to civil servants and armed forces under other systems outside the SJSN to maintain current levels of benefits enjoyed by these groups</td>
</tr>
<tr>
<td></td>
<td>Military and police</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PT Jamsostek’s Old-Age</td>
<td>Private sector workers</td>
<td>• Health • Work-accident • Old-age savings • Pension • Death benefits</td>
<td>Mandatory • BPJS Health for health program • BPJS Employment for employment programs SJSN pension program is currently not offered to informal sector workers.</td>
</tr>
<tr>
<td>Savings</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Informal sector workers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voluntary Occupational</td>
<td>Private sector workers</td>
<td>• Health • Work-accident • Old-age savings • Death benefits</td>
<td>Voluntary supplemental program may still be provided to private sector workers to maintain current level of benefits enjoyed by these groups, however, it is purely the employers’ decision.</td>
</tr>
<tr>
<td>Private Pension</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mandatory Termination</td>
<td>Private sector workers</td>
<td></td>
<td>This program may need to be revisited upon implementation of SJSN programs.</td>
</tr>
<tr>
<td>Allowance</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Authors’ compilation.

Note: BPJS = Badan Penyelenggara Jaminan Social; DB = defined benefit; DC = defined contribution; EPF = Employer Pension Fund; FIPF = Financial Institution Pension Fund; SJSN = Sistem Jaminan Sosial Nasional; THT = Endowment Savings Program.

## REFERENCES


INTRODUCTION

In 1991, Latvia inherited its pension system from the Soviet Union, including its low statutory retirement age (55 for women, 60 for men), high income replacement rates (50 percent to 100 percent of previous monthly income), and pension expenditures financed directly from the state budget. Because this system was deemed unsustainable and not properly equipped to face existing and increasing socioeconomic and demographic challenges (such as increasing life expectancy and decreasing fertility rates), and decreasing state budget revenues, the Latvian pension system required fast and fundamental changes. As a response to these challenges, since 1995 the Latvian government has undertaken a systematic reform of its pension system, replacing the classic pay-as-you-go (PAYG) public pension pillar with individual defined-contribution plans. The main goals of the reform were to

- Reallocate and distribute risks and related costs among participants;
- Establish a stable and sustainable personal taxation system with the introduction of a fixed social contribution rate of 33.09 percent; and
- Introduce a new state social insurance program and its attendant legal framework.

In 2001, a new three-pillar model was established.

The purpose of this chapter is to provide a brief historical and economic review of the operation and performance of Latvia’s reformed three-pillar pension system, with a particular focus on funded pension schemes. The chapter also provides an analysis of the latest successes and implications of the system.

DESCRIPTION OF THE PENSION SYSTEM

A Multipillar System

Using the experience of the Swedish pension reform as a basis, the Latvian pension system underwent a structural reform between 1995 and 2001. In 2001, the
reform was complete and a new three-pillar pension system became operational. This new system was set up to deal flexibly with a number of growing demographic challenges, for example, increasing life expectancy, migration, changes in labor and capital markets, and changes in the age structure of the population more generally. Figure 18.1 shows the projected sharp long-term decrease in Latvia’s working-age population resulting from these demographic trends. Simultaneously, the changes in the age structure of Latvia’s population are projected to lead to a significant increase in the old-age dependency ratio (that is, the number of people ages 65 and older as a proportion of the number of people ages 16 to 64): from 30 percent today to 75 percent in 2060.

**A First Pillar Based on Notional Defined Contributions**

Latvia was among the first countries in central and eastern Europe to address all of these challenges by introducing a multipillar pension system, and it was the first country in the world to introduce a first-pillar PAYG (“solidarity”) pension system involving notional defined contributions (NDCs). In 1996, Latvia was one of the first countries to make a complete transition to NDCs for the entire working population. From a regulatory perspective, the reform included the gradual introduction of a statutory uniform retirement age of 62 years (applicable beginning in 2003 for men and 2008 for women), which since Soviet times had been 58 for men and 55 for women. From a financial perspective, the reform established a total contribution rate of 20 percent, shared between the first pillar

![Figure 18.1 Projection of Trends among Working- and Retirement-Age People, and Resulting Old-Age Dependency Ratio in Latvia](https://www.imf.org/External/Pubs/FT/SP/2011/eng/110315.pdf)
based on notional defined contributions and the second pillar based on funded defined contributions (FDC). The original split of 18 and 2 percent between these two pillars was scheduled to change to 10 and 10 percent by 2010.

However, the 18 percent contribution rate allocated to the NDC did not suffice to finance old-age pension spending during the reform’s transition period. The total state social insurance contribution rate of 35.09 percent (33.09 percent before 2011) covers the transition to the new regime and finances current social insurance spending including old-age pensions; disability pensions; and unemployment, sickness, and parental benefits. The reform promised stability in the face of demographic and economic fluctuations, and it took into account the broad range of possible economic and demographic scenarios present in Latvia’s European Union (EU) accession process. The conversion to the NDC system in 1996 also raised a number of transition issues that had to be resolved; some of them had to be revisited in the period immediately following the initial reform legislation. The most important issue concerned the manner in which rights acquired under the old regime would be valued in the new, NDC regime and how to introduce the system in an economic environment characterized by structural upheaval, given that the country was just beginning to transform from a command to a market economy.

The main purpose of the new system was to establish personal pension accounts for each qualifying individual in both the notional defined-contribution and funded defined-contribution schemes. The reform also addressed allocation of the administrative and custody rights for the management of these pension accounts to the State Social Insurance Agency (SSIA) and of the assets of funded defined-contribution schemes (second tier) to licensed private pension fund managers. Initially, management of financial accounts was exclusively delegated to the State Treasury (October 2007), but during the transitional period (by 2008), the Treasury terminated these operations and the funded pension assets were completely transferred to private pension management funds according to each member’s selection or were equally distributed among the private pension funds.

Although the first pillar covered all workers, joining the second pillar was mandatory only for workers born after 1971. People born between 1953 and 1971 could join voluntarily while workers born before 1953 were not allowed to participate in the FDC pillar. By December 31, 2012, 12 years after the inception of the second pillar, the average age of participants was 39 years (for mandatory participants, 30.4 years, for voluntary affiliates, 51 years). As seen in Figure 18.2, the largest share of second-pillar pension participants was in the 25–40-year-old age group.

**Contributions to the First and Second Pillars**

The personal NDC accounts are financed through compulsory social contribution payments, which are directly levied on workers’ reported wages. Based on growth forecasts and expected wage growth before and after Latvia’s accession to the EU, the total social contribution rate was reduced from its previous level of
38 percent to 33.09 percent. To allocate social and economic responsibility properly between the state budget and private individuals, 20 percentage points of the total 33.09 percent was allocated to finance the first and second pillars of the reformed pension system.

Ultimately, to reduce the future fiscal burden resulting from population aging and the rapid decrease of fertility rates in the 1990s, the 20 percent contribution was split differently between the first and second pillars in the years following reform (see Table 18.1).

The initial pension model calculations—which accounted for the aging of Latvia’s population, migration rates, and the level and volatility of returns on funded assets—concluded that the optimal division of contributions between the first and second pillars would be 14 percentage points and 6 percentage points, respectively. After initiation of the second pillar in 2001, management rights for

<table>
<thead>
<tr>
<th>Year</th>
<th>First Pillar</th>
<th>Second Pillar</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001–06</td>
<td>18</td>
<td>2</td>
</tr>
<tr>
<td>2007</td>
<td>16</td>
<td>4</td>
</tr>
<tr>
<td>2008</td>
<td>12</td>
<td>8</td>
</tr>
<tr>
<td>2009</td>
<td>18</td>
<td>2</td>
</tr>
<tr>
<td>2010–12</td>
<td>18</td>
<td>2</td>
</tr>
<tr>
<td>2013</td>
<td>16</td>
<td>4</td>
</tr>
<tr>
<td>2016(^1)</td>
<td>14</td>
<td>6</td>
</tr>
</tbody>
</table>


\(^1\)Future plans of the government of Latvia.
the assets were legally and exclusively allocated to the State Treasury. However, after private pension funds also received the right to operate in this market, the State Treasury’s administration rights were legally terminated and, in October 2007, completely transferred to private pension management funds, which, in a majority of cases, were subsidiaries of large financial institutions. Subsequently, the private pension funds lobbied for the second-pillar contributions to be increased to 10 percent. However, according to the Ministry of Welfare’s projections, no further increases are planned for the contribution rate toward the second pillar—that is, the 6 percentage point share will remain unchanged for the long-term sustainability purposes of the first pillar.

To maintain the NDC pension accounts’ present real value as well as to adjust future pension payments to recover the transition costs during 1996–99 for members with job service before 1996, the collected contributions in the first-pillar NDC accounts are indexed annually by the average wage growth index. However, the system reduces accumulated pension capital if the index is negative. The applied index rates are used as chain indices for NDC capital increases by annually indexing the accumulated capital retrospectively by the rates in Table 18.2.

Contributions allocated to the second pillar (see Table 18.1) are transferred to personal FDC accounts at private pension fund managers selected by individuals and are invested. Accordingly, the growth or reduction of value of the pension capital in the second pillar depends directly on the performance of the selected pension plan as well as the investment strategy and structure of its financial instruments (deposits, bonds, equities, and the like).

Achieving Adequate Income Replacement Rates

An important indicator of the success of the system from the contributors’ perspective was the achievement of higher net replacement rates. In July 2005, the Latvian government set the goal of achieving replacement rates equal to 40–60 percent of previous employment income by participation in both the mandatory first and second pillars. Assuming average wage growth of 2 percent and average second pillar net returns of 4 percent, the contribution rate split of 14 percent to the first pillar and 6 percent to the second pillar to apply beginning in 2016 would yield a 60 percent net replacement rate after 45 years of service. The latest government decision to increase the statutory pension age from 62 to 65 years by 2025, with most people being in the reformed system by that time, is consistent with these assumptions. An additional, voluntary contribution of 10 percent to third-pillar schemes would bring the net replacement rate to 100 percent after 40 years of service—assuming average wage growth of 3 percent

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**TABLE 18.2**

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<td>0.7978</td>
<td>0.9455</td>
<td>1.0618</td>
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and net returns in the second and third pillars of 6 percent. If the previous assumptions are used (40 years of service with 2 percent wage growth and 4 percent net returns) the replacement rate would be 83 percent. This illustrates the importance of contributing to voluntary third-pillar schemes to increase expected net replacement rates. Also, it is crucial to enhance long-term, low-risk investment initiatives for second- and third-pillar schemes so that they earn sustainable returns of 4 percent to 6 percent.

**FINANCIAL PERFORMANCE OF THE REFORMED PENSION SYSTEM**

Total assets in the second pillar have grown steadily as a result of a continuous increase in the number of participants (275,000 at end-2001, a year after the system was launched; 790,000 at the beginning of 2006; and 1,194,000 at end-2012). At end-2012, the value of second-pillar assets was 1,027 million Latvia lats—equivalent to 12 percent of Latvia’s 2011 GDP. Because of the successful launch of the second pillar, the rapid growth of new participants and their contributions, and favorable rules for pension plan managers with respect to guaranteed flat administration fees directly linked to collected contributions, fund managers were greatly interested in obtaining management licenses from regulators. By the end of 2011, there were nine licensed private pension funds in Latvia. Private pension funds succeeded in incorporating into funded pension legislation a ceiling of 2 percent for administrative fees out of collected contributions into the pension plans; in 2011, average administrative fees were 1.5 percent. These fees are collected by pension funds regardless of reported losses or profits of managed pension assets.

Regulations have been strictly binding with respect to allowed proportions of financial instruments and geographical segmentation. The second pillar’s investment structure as of December 31, 2012, is shown in Figure 18.3.

Figure 18.3 shows that regulatory limits on investment types as well as limits on foreign exchange exposure (10 percent of a single currency) created the current situation in which nearly half of pension assets are invested in Latvia. Because of underdeveloped financial markets, these assets are invested heavily in term deposits and government bonds. So-called conservative plans are not allowed to invest in equity markets, and their yields depend directly on domestic monetary and fiscal policies. So-called active plans are allowed to invest up to 50 percent in equity markets, with a limit of up to 5 percent invested in any particular asset. Because of these limitations, the majority of assets are allocated to relatively low-yielding, short-term government bonds and term deposits with a maturity of one to three years. As a result of insufficient investment opportunities, Latvian investment funds yielded returns of between 1 and 2 percent, which was below wage growth, depressing expected income replacement rates in the long term. More recently, investment returns either have been lower or slightly higher than consumer price inflation (in 2012, the average yield in FDC accounts
was 4.14 percent). The history of return rates on funded pension assets is provided in Figure 18.4.

In 2009, after the start of the global financial crisis—which resulted in a rapid decrease of contribution revenues after a drastic increase in unemployment and salary cuts—the Latvian government had to make the unpopular decision to

**Figure 18.3** Allocation of Latvia’s Funded Defined- Contribution Net Assets by Geography and Financial Instrument

![Pie chart showing allocation of Latvia’s Funded Defined-Contribution Net Assets by Geography and Financial Instrument.](source)

- Latvia: 22%
- European Union and United States: 23%
- Eastern Europe: 49%
- Other countries: 55%
- Equities: 6%
- Bonds: 37%
- Deposits: 7%


**Figure 18.4** Returns on Funded Defined-Contribution Pension Assets (Percent yield)

![Line graph showing returns on funded defined-contribution pension assets.](source)

significantly reduce the second-pillar contribution rate from 8 percent to 2 percent. The 6 percentage point difference was redirected to the financing of current pension expenditures in the first pillar. A minimum amount of second-pillar contributions were retained to be put toward the aforementioned demographic challenges. In addition, to compensate for the unemployment rate, in 2011 the government increased the total state social contribution rate to 35.09 percent, which is paid by employees and employers to the state. As can be seen in Table 18.1, the share of contributions to the second pension pillar was raised to 4 percent in 2013 and is scheduled to be 6 percent (the previously mentioned optimal rate) in 2016.

In 2013, from a public expenditure perspective, first-pillar expenditures exceed contributions. However, following the decision in 2012 to increase the retirement age to 65 by 2025, and based on growth expectations, the Ministry of Welfare projected that first-pillar contributions will exceed expenditures, leading to a surplus. This surplus is available to the general government budget to accrue in a special-purpose social budget to meet future long-term demographic challenges (see Figure 18.5).

Also, assuming that the first-pillar surplus will continue to increase and that the share of contributions to the second pillar will increase to 6 percent and remain at that level, it is expected that collected contributions in NDC accounts as a share of GDP will drop from 7.0 percent to 6.4 percent by 2050.

**Initial Success of the Reformed Pension System**

Latvia’s three-pillar pension system has been in place for almost 10 years and has experienced outstanding successes and failures. The system’s launch had a positive

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**Figure 18.5** Projections of First-Pillar Expenditures Versus Contributions and Their Share of GDP

[Graph showing projections of first-pillar expenditures versus contributions and their share of GDP]

impact on participation rates that resulted in a steady increase in contributions. The early successes of second-pillar implementation in all three Baltic countries was mainly due to the following:

- Governments ran public communication campaigns about the social and economic necessity of reforming the legacy system and about why people should be involved and contribute to the new system, ensuring that the number of people joining the second pillar increased rapidly and that participation remained surprisingly high (see Figure 18.6).

- The introduction of the second pillar coincided with a period when the returns on financial investments in global markets were high, and it was assumed that this trend would continue for many years, ensuring high returns both before and after Estonia, Latvia, and Lithuania entered the EU.

- The number of people joining the system increased as a result of the entry into the labor force of population cohorts born during the 1970s and 1980s, a period of high birth rates in the former Soviet Union.

- Contribution revenues grew rapidly between 2005 and 2008 on the back of rapid economic growth in all three Baltic economies. Contributions continued to increase partly because of wage growth and partly because second-pillar contribution rates went from 2 percent to 8 percent. Even in the years following the financial crisis of 2009–10, when wages were cut significantly, contributions continued to increase, which mostly occurred because of the compulsory entry of new participants into the system (Figure 18.7).

Figure 18.6  Number of Participants in the Second Pillar

![Graph showing the number of participants in the second pillar from 2002 to 2012.](source: Financial and Capital Markets Commission (www.fktk.lv).)
FUTURE CHALLENGES

Sustainability Remains a Key Issue

The first challenges to payouts and the reliability of the system occurred about 10 years after the reform began, attracting attention from the public and causing negative attitudes about the system. If the initial reasons for the former PAYG system’s unsustainability, and for the introduction of NDC and FDC accounts, were low fertility rates, increases in longevity, and the migration of the working-age population, after the global financial crisis (which severely affected the Baltic economies), the reasons for unsustainability became the permanently high unemployment rates in all Baltic countries, the unacceptably high flat-rate administrative fees charged by pension plan administrators, and the regulatory restrictions against investing pension assets in long-term real economy projects.

In 2009 and 2010, the government’s main argument for the drastic reallocation of contributions from the second pillar to the first was the need to retain the sustainability of the social insurance budgets and to meet ongoing pension payment obligations. In addition, the Latvian government, under an IMF-supported program, executed a 10 percent nominal cut to current pensions in 2009. However, this cut was retrospectively reversed by a verdict of the constitutional court. Following this reversal, payments from the social budget had to be made; as a result, beginning January 1, 2011, the total social contribution rate increased by an additional 2 percentage points, to 35.09 percent.

NDC accounts continued to accrue higher notional pension capital, which continued to increase the government’s notional liabilities toward current contributors. However, these notional long-term liabilities had never been recognized from a public finance perspective (as in other types of unfunded pensions).
Delivering Targeted Income Replacement Rates

At end-2009, nearly 90 percent of total funded assets were concentrated in pension plans managed by financial corporations, helped by rapid growth in contributions. The government’s decision in 2009 to cut the contribution rate to the second pillar to 2 percent was influenced by public debate and pressure from the finance industry; hence, the more difficult option of terminating the second pillar entirely was cast aside. Still, the change was highly unsatisfactory to the industry, which argued that the decision would have a negative impact on the future pension incomes of the system’s current FDC account holders.

Learning from the Financial Crisis

During 2008 and 2009, major pension plans at SwedBank, SEB, and Citadele, which managed the largest amounts of second-pillar funded assets, reported significant decreases in returns on the net value of pension plans, ranging from −5 percent to −25 percent (see Figure 18.4). The decreases in returns, as well as the reduction in contributions to FDC accounts, were mostly explained and publicly presented as a result of the financial crisis. Nevertheless, other less widely publicized reasons also contributed to these outcomes:

- Fund managers promoted high-risk pension plans based on historical returns without adequately explaining the risks involved.
- Public and administrative support was lacking for reallocating pension assets into less volatile financial instruments in a timely manner during the global financial crisis and subsequent reinvestment activities before capital markets recovered.
- Local capital market opportunities were limited and regulatory restrictions were in place on the investment of second-pillar assets into local equities and derivatives through national stock exchanges or risk capital funds, as well as into direct infrastructure or energy development projects, which could have provided higher and more sustainable long-term returns.
- Legal measures that would limit or even eliminate pension plans’ administrative fees if negative returns were reported were not in place.
- Political decisions on the role of the social insurance system were influenced by private sector lobbying between 2004 and 2006, resulting in incoherent changes to the overall pension system. Moreover, the accrued social insurance budget surplus, the original purpose of which was to close the social insurance deficit between 2009 and 2012, was spent during that period.

REFORMS AND REFORM OPTIONS

Ease Investment Restrictions and Encourage Domestic Investment

After the global financial crisis, Latvia, along with the other Baltic countries, was one of the first European countries to restructure its public finances. From the
slump in GDP during those years, the economies of these three countries recovered and returned to a positive GDP growth trend (in 2011, 8.3 percent in Estonia; 5.5 percent in Latvia; and 5.9 percent in Lithuania). Larger EU economies were stagnating, with the result that EURIBOR rates continued to fall: the 12-month rate decreased from 4.711 percent in 2007 to 0.631 percent in September 2012.

As a response, the government should revisit investment restrictions and facilitate long-term investment initiatives in the national economy. These initiatives could include allowing funded second-pillar pension assets as well as third-pillar assets to be invested in real economy sectors, leading to a sustainable increase of economic capacity and value of investments, and increases in productivity, competitiveness, and guaranteed long-term returns. Such investments could include

- Infrastructure projects;
- Renewable energy and natural resources; and
- Risk and venture capital.

### Deal with the Issue of Interrupted Employment Records

Long-term unemployment and interrupted careers have become more common in Latvia. Both have negative effects on future pension benefits because interrupted employment also reduces the accumulation of capital (notional or actual) in the first and second pillars. Historically, the main arguments for pension system reform and introduction of a funded second pillar were low fertility rates and the general aging of the population, but after the global financial crisis, high unemployment rates—peaking at 18.7 percent in 2010—and the stagnation of EU economies jeopardized the long-term sustainability of Latvia’s pension system.

To reduce the poverty risks of people who had lost jobs during the global economic crisis, the Latvian government established numerous social support programs and transferred the social support expenditure burden from the state budget to municipalities’ local budgets. Existing legislation provides legal framework for municipalities to finance and execute generous social support programs to support unemployed people and low-income households. The system of social support and benefits allows people to live sustainable lives, reducing their motivation to seek full-time jobs and integrate back into the labor market. This obstacle further damages Latvia’s pension system because it no longer collects sufficient contributions to cover the current expenditures of the first pillar nor does it allocate sufficient contributions to FDC accounts to provide reasonable replacement rates. Furthermore, it has implications for future income equality. Instead of continuing on this course, the government, in cooperation with municipalities, should invest financial resources into partnership programs with private investors for long-term employment initiatives that would help train these people for work with new technologies and integrate them back into the real, unsubsidized labor market.

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Reduce Management Fees

Although the median level of total administrative fees in funded systems around the world ranged from 0.16 percent to 0.70 percent of total assets under management in 2011 (Rudolph, 2012), rates were significantly higher in Latvia, varying from 1.5 percent to 1.75 percent. The SSIA also charged each second-pillar participant an additional 0.76 percent on second-pillar assets to cover its administrative costs.

To diminish pension plans’ oligopoly incentives and to increase competition among pension plan managers, current management fees should be replaced by flat rates on contributions collected with performance-based fees on yields earned. Performance-based fees could be supplemented by capped fees, not exceeding 0.5 percent of contributions, to cover portfolio and account management costs.

Improve Financial Literacy

Financial literacy in the population can be closely linked to pension planning. A simple methodology is used in a number of countries to discover the population’s level of financial literacy. This methodology shows that only half of Americans ages 50 and older are able to answer simple questions about inflation and other basic financial concepts, and that only one-third have ever tried to develop a personal savings plan (Lusardi and Mitchell, 2009). Within this one-third, only two-thirds are able to properly manage and supervise their developed investment plans. The researchers prove that people who display high financial literacy are able to develop a pension plan and adhere to it better that those who do not. These findings are strengthened by research conducted in Germany (Bucher-Koenen and Lusardi, 2011) that confirms the positive impact of financial knowledge on pension planning using a similar but more complex methodology. Another stream of research finds that deliberate financial education has a larger positive effect on participation and savings rates than merely publishing information about existing savings and pension programs (Bernheim and Garrett, 1996). Unfortunately, Latvia’s financial literacy is still a largely unexplored topic; however, some indirect evidence shows that, on the whole, Latvians severely lack knowledge of available pension options and the ability to assess them to make an educated choice.

Latvia’s second-pillar pension system is administered by the SSIA. The only instrument of communication with citizens is the website providing information about available pension funds and pension plans, and their historical and latest returns (updated daily). These sites also allow users to download their individual pension statements. However, real-life evidence shows that the majority of Latvians are still ignorant about their pension options. The attitude of second-pillar participants toward the future wealth that had accumulated in their state-funded pension schemes shows that the majority do not believe that the government will be able to provide them with an adequate pension and that only today’s earnings matter. The 25–45-year-old age group in 2011 would be the first generation
whose pensions would mostly depend on second- and third-pillar savings; therefore, providing these individuals with sufficient information about investment opportunities and related risks is crucial. Because Latvian pension funds’ assets were severely hit by the global financial crisis, people started paying more attention to their investment behavior; however, without more active state support, via information campaigns, it will be much more difficult to ensure the adequacy of retirement income.

Ultimately, the pension reforms initiated in Latvia during the past decade were relatively successful and helped the country address its demographic issues. But experience from other countries indicates that without a sufficient level of financial literacy, people tend to over-rely on the government and do not consider long-term financial saving to be a means of ensuring retirement income. Moreover, the population exhibits significant differences in general attitudes toward money and financial information as well as in their willingness to plan for retirement. Therefore, future pension reforms should increase the general level of financial literacy and familiarity with, as well as attitude toward, the pension system and the importance of future personal long-term retirement savings.

CONCLUSION

In response to growing demographic risks from low fertility, increasing life expectancy, and emigration of the working-age population, and the shortening of the employment service period, Latvia successfully introduced its new pension system, which established good preconditions for mitigating these risks.

The financial crisis indicated that the new Latvian pension system was not properly designed to protect funded assets against real economic risks such as long-term unemployment and low rates of return.

Regardless of high participation rates in second-pillar pension schemes when they were introduced (attributable to positive government campaigns and high returns in global capital markets), people’s reliance on the new system significantly dropped after the global financial crisis. The financial crisis led to the decision to decrease second-pillar contribution rates and to divert those contributions toward addressing current fiscal deficits. The rapid decrease of the value of funded pension assets caused by double-digit negative returns on investment also played a part in citizens’ reactions to the pension scheme.

Legislative restrictions and insufficient international diversification of second-pillar funded assets caused Latvia—in comparison with Lithuania and Estonia—to be the most conservative and least competitive of pension systems. Its severely restricted geographical allocation of funded pension assets outside of its national economy and its investment of these assets in the national economy in mostly low-risk investment instruments such as term deposits and government bonds are leading to its very low returns. This chapter argues that the government has to revisit legislation on investment restrictions and encourage long-term investment in the national economy. The prospects and consequences of such investment
policies would ensure long-term, low-risk, sustainable market returns of 4–6 percent on contributions in the second and third pillars. These investment policies would lead to the retention of local capital to be primarily invested into the national economy thus increasing national yield. It would also have a multiplier effect by generating new jobs to resolve long-lasting, double-digit unemployment rates; developing supporting industries; and enhancing tax collection for the state and for special social budgets (first pillar). At the same time, to protect such returns it is also important to develop a legal framework and reasonable financial instruments—such as project bonds issued by the government and supervised special purpose vehicles—to guarantee adequate yields within the life cycle of the project as well as return of principal at the maturity of the bond.

REFERENCES


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CHAPTER 19

Reforming the Public Pension System in the Russian Federation

FRANK EICH, CHARLEEN GUST, AND MAURICIO SOTO

INTRODUCTION

As in many other countries, public pension reform in Russia is a key policy challenge. To combat the effects of the global financial crisis on the economy, in 2009–10 Russia undertook a large fiscal stimulus of about 9 percent of GDP, mainly comprised of permanent measures including an increase in pension benefits. Although some of the stimulus has been withdrawn, the end-2011 non-oil deficit—which is a relevant measure of the fiscal stance in oil-producing countries, given the volatility of oil prices and the nonrenewable nature of oil reserves—was still more than double the level considered consistent with equitable use of the oil wealth across generations (Gust and Zakharova, 2012) and should be reduced in coming years. This deficit reduction will be needed to avoid procyclical policies that fuel inflation and real appreciation, which undermine competitiveness and contribute to boom-bust cycles, as well as to reduce fiscal vulnerabilities (IMF, 2011b). Given that discretionary spending at the federal level is only about one-third of total expenditures, durable fiscal consolidation will need to be underpinned by fundamental structural reforms, including in pensions and health care. In addition, an aging population means reforms will be needed to contain future pension spending.

In the wake of the global financial crisis, there was renewed interest in the future of the Russian pension system, with experts and groups putting forward proposals, including Strategy 2020 (2011), Dmitriev (2011), and Gurvich (2010), on how to ensure adequate and sustainable pensions. Official interest was also high, with the Ministry of Health and Social Development publishing a paper in 2010 entitled “Results of Pension Reform and the Long-Term Outlook for Development of the Pension System of the Russian Federation Accounting for the Influence of the Global Financial Crisis” as part of their strategy for pension system long-term development through 2050.

This chapter presents projections of pension spending as a share of GDP in the absence of reform, estimates the impact of some of the proposals to increase the pension age and reduce early retirement, and puts forward some alternative proposals.

The remainder of this chapter is structured as follows: The next section presents an overview of the Russian pension system in 2013 and is followed by a section that examines the demographic and other challenges the Russian pension
system faces. The final section discusses the considerations that should guide pension reform; assesses some of the recent reform proposals put forward in Russia; and discusses further reforms that could address remaining pension spending pressures consistent with fiscal consolidation needs, the implications for equity, the functioning of labor markets, and economic growth.

DESCRIPTION OF THE PUBLIC PENSION SYSTEM

Russia’s current pension system was introduced in 2002. Before 2010, the system had three components: a basic pension, an insurance benefit based on a notional defined-contribution account, and a funded defined-contribution scheme (available only to individuals born after 1967). After 2010, the basic pillar was folded into the pay-as-you-go (PAYG) portion of pensions. In addition to old-age labor pensions, disability and survivor labor pensions are part of the system. This chapter focuses mainly on old-age labor pensions. Table 19.1 provides a description of the key parameters of each pillar in 2013:

- The basic pension is a flat amount provided to all those reaching retirement age (age 60 for men, and age 55 for women) with a minimum contribution record of five years (rising to 15 years by 2025). Most current elderly fall within this group, so coverage among the elderly is virtually complete. Although the basic pension is supposed to be uniform, higher levels are granted to pensioners in a variety of categories, including to all those age 80 and older, those who are disabled with limited working capacity, those who are caring for a dependent family member, and those who live or have worked in Arctic regions. Indexation rules are complex. As of 2010, the basic pension was indexed the same way as the insurance portion, that is, annually to average wages, but limited to the annual growth of the Pension Fund of Russia’s (PFR) income, expressed per pensioner. There is also the possibility of preventive (advance) indexing during the year if inflation exceeds 6 percent (see Ministry of Health and Social Development of the Russian Federation, 2010, for further details). Increases outside this formula were legislated in 2009 and 2010. As of 2010, the basic pension was about 12 percent of the average wage.

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1Before 2002, pensions were based on the length of work and the wages in the last two years of that work record (or in any five years of work), according to the following formula: Pension = LC × (pensionable wage for individual divided by average wage in Russia for the last two years of the individual’s work record) × average wage in Russia in the previous quarter; LC is between 0.55 and 0.75, depending on length of work record. The ratio of pensionable wage for the individual to the average wage in Russia could not exceed 1.2. In addition, pension rights accumulated before January 1, 2002, were converted into a portion of the notional accounts. Pre-2002 notional capital is subject not only to indexation but to valorization from the federal budget. For a further description of how the pre-2002 system worked, see Mansoora and others (2002).

2In line with legislation at the time, basic pensions were increased at the end of 2009 to bring them closer to the subsistence level for pensioners.
### TABLE 19.1

<table>
<thead>
<tr>
<th>Pension Parameter</th>
<th>Basic (part of PAYG)</th>
<th>Notional Defined Contribution (part of PAYG)</th>
<th>Funded</th>
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<tr>
<td><strong>Retirement age</strong></td>
<td>60 for men and 55 for women with a minimum of five years of contributions (15 years by 2025), but there are many provisions for earlier retirement</td>
<td>Notional account system, based on actual contributions made, with an assumed 19 years of benefit receipt at the normal retirement age beginning in 2013, phased in from the assumed 12 years in 2002</td>
<td>Based on individual contributions and interest earned on those contributions</td>
</tr>
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<td><strong>Benefit rate</strong></td>
<td>Rub 3,170/month, but higher for those ages 80 or older, disabled persons, those caring for disabled persons, or those who spent at least 15 years working in Arctic areas</td>
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<td></td>
</tr>
<tr>
<td><strong>Interest rate on contributions</strong></td>
<td>n.a.</td>
<td>Growth rate of contribution revenue from working-age population per pensioner</td>
<td>Interest rate earned by fund chosen by individual</td>
</tr>
<tr>
<td><strong>Indexation post-retirement</strong></td>
<td>Indexed to average wages, but can be limited by availability of revenue</td>
<td>Indexed to average wages, but can be limited by availability of revenue</td>
<td>Paid as a scheduled withdrawal</td>
</tr>
<tr>
<td><strong>Contribution rates</strong></td>
<td>6 percent of yearly wages up to Rub 512,000; 10 percent of yearly wages exceeding Rub 512,000</td>
<td>16 percent for those born before 1967 of yearly wages up to Rub 512,000; 10 percent for those born in 1967 or later of yearly wages up to Rub 512,000</td>
<td>6 percent for those born in 1967 and later of yearly wages up to Rub 512,000</td>
</tr>
</tbody>
</table>

Sources: World Bank; Russian Ministry of Health and Social Development; and Pension Fund of Russia.

Note: PAYG = pay-as-you-go; Rub = rubles. In mid-2013, 1 U.S. dollar was approximately 33 rubles.

- The labor insurance component is a notional defined-contribution pension. This is a PAYG scheme that includes old-age, disability, and survivors benefits. Contributions to individual accounts are not invested in financial assets. Instead, these contributions are recorded in a notional individual account by the PFR. These accounts earn a “notional” return set by law—currently, the return is equal to average wage growth, but limited to the growth rate of pension contributions per pensioner. Between annual indexation on April 1 of each year, pensions can be indexed to inflation (if inflation exceeds 6 percent) to prevent a sharp drop in purchasing power during the year. Typically, notional account balances are divided by life expectancy in months at retirement, which provides some automatic fiscal adjustment as life expectancy increases in the long term; however, this automatic adjustment has been disabled in the Russian pension system by the use of fixed conversion factors.

- The third component is a funded defined-contribution system, in which individuals contribute to pension fund accounts that are invested by public or private asset managers. The default option is for individuals to keep the account in the PFR to be managed by a state financial institution—about 85 percent of contributors and assets are currently in the default option.
Reforming the Public Pension System in the Russian Federation

(Heinz and Holtzer, 2010). However, individuals can opt out of this arrangement by choosing a private asset manager or by transferring the account to a private pension fund. Upon retirement, an individual receives both the contributions and the investment returns earned on those contributions in the form of a lifetime annuity.

- The pension system also pays state pensions (including early pensions to civil servants and military personnel, disability social pensions, and social pensions for people older than the retirement age who are not entitled to other pensions) and offers monthly allowances to certain categories of citizens, including veterans, the disabled, and persons affected by radiation exposure. In addition, the PFR funds a benefit top up that increases pensions to the “subsistence minimum level” (about 20 percent of the average wage, varying by region). If the regional subsistence level is higher than the federal level, the difference is covered from the regional budget. These top ups, both from the PFR and the regions, are not a major source of spending—together they amounted to only 0.3 percent of GDP in 2010.

- The system is funded by payroll contributions and transfers from the federal budget. The contribution rate is 22 percent of wages up to an annual cap of about 165 percent of the average wage (Rub 512,000). Of this, 6 percent of wages is diverted to the funded defined-contribution component for younger individuals. In addition, an individual’s earnings in excess of the annual cap are subject to a 10 percent tax rate to finance basic pensions.

Relatively Low Statutory and Effective Retirement Ages

One important characteristic of the Russian pension system is its relatively early statutory retirement age. Men can claim a full old-age labor pension at age 60 and women at age 55—in contrast to an average retirement age of 64 for men and 63 for women in the advanced economies, and 61 for men and 58 for women in emerging market economies (IMF, 2011a). Furthermore, many individuals retire even earlier: the average effective retirement age in Russia is estimated to be

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3Until late 2009, the investment of the monies in the default option was restricted to government securities. Since then, investment alternatives have been expanded to allow investment in a wider range of domestic securities (including corporate bonds, mortgage bonds, and Russian Bank deposits) and bonds of global banks listed in Russia. This conservative investment policy largely explains the poor returns on these accounts—the real annual return of the default fund during 2004–09 was –3.9 percent. However, average returns on the other options have also been disappointing (Heinz and Holtzer, 2010).

4Note that the relative underdevelopment of the third pillar is possibly a missed opportunity for domestic financial markets, especially given ambitions for Moscow to become an international financial center.

5Old-age social pensions are payable five years after the regular retirement age for labor pensions, that is, at age 65 for men and 60 for women.

6See Fornero and Ferraresi (2007) for a discussion of why increases in the retirement age might not have been part of previous reform efforts.
These estimates are consistent with Dmitriev (2011).

Workers can also retire early on a disability labor pension. In the range of 52–54 for women and 54–58 for men (Dmitriev, 2012; Gurvich and Sonina, 2012). Nearly 30 percent of pensioners retire before the statutory retirement age (Table 19.2). This large number of early retirees is explained by a complicated system under which early pensions are provided to insured persons based on working conditions, work environment factors, and regional living conditions. For example, early pensions are available to citizens who have a work record in Arctic regions; mothers with five or more children or disabled children; unemployed males at age 58–59 and unemployed females at age 53–54; and men with at least 10 years in hazardous employment and females with at least 7½ years (hazardous employment includes a long list of occupations, including miners, geologists, and seamen). Furthermore, no minimum retirement age applies to teachers with 25 years of work with children, health workers with 30 years in urban and 25 years in rural medical institutions, professional ballet dancers, and some other artists.

### Spending

Overall, total spending on pensions and allowances equated to about 9 percent of GDP in 2010 (Table 19.2). About 30 percent of this spending was devoted to the basic pension, 60 percent to the insurance component, and 10 percent to allowances. Allowances were expanded in 2005—from less than 0.3 percent to about

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7These estimates are consistent with Dmitriev (2011).

8Workers can also retire early on a disability labor pension.
1 percent of GDP, as part of the monetization of benefits (i.e., they replaced a portion of nonmonetary subsidies). The trend in pension spending also shows a large increase (about 3½ percentage points of GDP) between 2007 and 2010. This increase in spending reflects measures that substantially increased the generosity of the system: pensions and allowances relative to the average wage increased from 27½ percent in 2007 to 40 percent in 2010.

Figure 19.1 Contribution Rates and Replacement Rates, 2010

Sources: Organization for Economic Cooperation and Development (2011); IMF (2011a).
Note: Contribution rates refer to the nominal contribution rates that apply to the pensionable base.
However, taking into account the recent increases in spending and reductions in contribution rates, Russia is near international averages for both contribution rates and replacement rates (Figure 19.1).  

### FUTURE CHALLENGES

#### Demographic Challenges

The key challenges facing Russia are ensuring adequate incomes in retirement, keeping funding burdens reasonable, and maintaining the pension system’s long-term sustainability as well as sufficient flexibility to adapt to the evolving economic and demographic environment.

As in other advanced and emerging market economies, Russia is facing a demographic challenge:

- **Life expectancy at age 60 in Russia is lower than in several other countries**—the gap with the best performing country in emerging Europe (Poland) is 3.3 years for females and 2.2 years for males (Figure 19.2). However, life expectancy is projected to rise by nearly four years by 2050, as rapidly as in other countries. Furthermore, a more rapid convergence is possible in light of the high economic growth expected during the next few decades. (Under the baseline projections from the United Nations, the life expectancy gap between Russia and the averages for eastern Europe and advanced economies remain roughly unchanged over time).

- **Fertility rates** (the number of children per woman) are projected to remain low in the coming decades. Fertility rates in Russia in 2005–10 stood at about 1.4, similar to that in the majority of other eastern European countries. Although fertility rates across eastern Europe are projected to increase to nearly 1.8 children per woman by mid-century, they will remain significantly below the natural replacement rate of 2.1.

- **These projected increases in longevity combined with relatively low fertility rates explain the aging of the Russian population in the coming decades**—the old-age dependency ratio (the ratio of the population 65 and older to the working-age population) is projected to nearly double from about 18 percent to 36 percent between 2010 and 2050. This indicates that the population will age at about the same pace as population in the advanced economies, for which old-age dependency ratios are projected to increase from about 23 percent in 2010 to 46 percent in 2050.

#### Fiscal Sustainability

At nearly 9 percent of GDP, Russia’s pension spending level was similar to that of emerging Europe and advanced economies in 2010 (Figure 19.3). These two

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9In 2012, the payroll tax rate was reduced from 26 percent of wages to 22 percent. The revenue loss of this reduction is estimated to be 0.5 percent of GDP.
groups of countries spend substantially more than emerging market economies outside Europe. Public pensions cover only about one-quarter of the elderly in emerging Asia and 60 percent in Latin America compared with nearly universal coverage in emerging Europe and the advanced economies, and populations are younger.

Russia, however, devotes a relatively large share of its budget to the financing of public pensions. Pensions are about 23 percent of general government primary spending in Russia, just at the emerging Europe average, compared with 20 percent in the advanced economies and only 13 percent in emerging market economies outside Europe. This higher proportion of public spending might make Russian public finances more vulnerable to demographic pressures than are those of other countries.

For Russia, the baseline scenario assumes that the replacement rate (the ratio of average pension to average wage) will remain at its 2010 level for the foreseeable future. In fact, increases in the replacement rate to about 40 percent of wages is consistent with earlier announcements that pensions would be brought
In November 2007, then-President Putin expressed the need to raise replacement rates to 40 percent (Hauner, 2008). More recently, Prime Minister Putin has noted that pensions “will certainly continue to grow” (Putin, 2012) and reaffirmed that in the future, pensions should reach a replacement rate of 40 percent (see http://en.rian.ru/russia/20120229/171613261.html).

to this level and would be maintained at this level in the future. Under this assumption, pension spending is projected to increase from 9 percent of GDP in 2010 to 12 percent in 2030 and 16 percent in 2050 (Figure 19.4). The cumulative cost of this projected increase is large: the present discounted value of increases in pension spending during 2010–50 is about 105 percent of 2010 GDP.

The magnitude of this projected increase contrasts with the expected trends in the rest of emerging Europe, for which average public pension spending is

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10 In November 2007, then-President Putin expressed the need to raise replacement rates to 40 percent (Hauner, 2008). More recently, Prime Minister Putin has noted that pensions “will certainly continue to grow” (Putin, 2012) and reaffirmed that in the future, pensions should reach a replacement rate of 40 percent (see http://en.rian.ru/russia/20120229/171613261.html).
Reforming the Public Pension System in the Russian Federation

Projected to remain stable at about 9 percent of GDP until 2030 and increase to only 11 percent of GDP by 2050. Projected increases are also more moderate in advanced economies, for which spending is projected to increase from 8 percent of GDP in 2010 to 11 percent in 2050. These lower increases in spending in other countries largely reflect the impact of reforms they have already enacted.

Achieving Equitable Outcomes

The most prominent equity issue in Russia’s public pension system appears to be the existence of preferential retirement ages. The statutory retirement age for females is five years lower than that for males even though women having substantially higher life expectancy at birth and at age 60 than do men. In addition, many individuals can take advantage of early retirement arrangements while continuing to work in their existing professions.

One possible justification for a lower female statutory retirement age is that it compensates women for the loss of earnings during motherhood and while providing informal caring functions (e.g., looking after children or frail elderly relatives). However, such concerns can be addressed through other measures, for example, by offering pension credits.

Retiring early while continuing to work is particularly widespread within the education, health care, science, and culture sectors (Góra, Rohozynsky, and Sin-yavskaya, 2010). These highly educated groups have enjoyed substantial increases in life expectancy since the early 1990s, whereas those with lower educational attainment (and therefore generally lower socioeconomic status) have experienced sharp drops in life expectancy (Murphy and others, 2006), making the system even less equitable.

Reform Options

The cost of providing public pensions depends mainly on the number of pensioners and the size of the average benefit. To contain or offset projected pension spending, there are three main dimensions along which pension reform to a PAYG system can be undertaken:

- Reducing the generosity of the system (the replacement rate);
- Curtailing eligibility (reducing the number of people receiving a pension); and
- Increasing revenues (by raising the contribution rates).

However, it is important that pension reforms do not undermine the ability of the public pension system to alleviate poverty among the elderly. Pension reforms should contribute to required fiscal consolidation efforts and support economic growth (IMF, 2011a). They should also address equity issues, for example, by ensuring a minimum income in retirement, by treating similar people in a similar way, or by ensuring that the fiscal burden of providing public pensions is shared fairly across generations.
Reducing the Replacement Rates

Absent reforms, maintaining the current replacement rate would require substantial increases in public pension spending—from 9 percent of GDP in 2010 to 12 percent in 2030 and 16 percent in 2050 (the baseline scenario described above). One option for containing the growth of spending would be to reduce benefits relative to average wages. In Russia, this reduction would take place if the current law—which decreases returns in the notional defined-contribution component of pensions—were allowed to run its course and not be overridden with ad hoc adjustments. This decline would take place because the notional return on contributions in this component is capped at the growth rate of contributions per pensioner. As the ratio of retirees per worker increases, the growth rate of contributions per pensioner, and thus the return on contributions, is likely to decline. This decline could generate savings by lowering the replacement rate. But the magnitude of the benefit cuts needed to stabilize spending would be substantial: to keep pension spending at its current level, replacement rates would have to decline from about 40 percent as of 2010 to 28 percent in 2030 and to 20 percent in 2050. However, although a lower replacement rate remains a theoretical possibility for containing spending, and indeed could happen if the current pension system were left unchanged, recent experience in Russia—including ad hoc adjustments—suggests that cuts of this magnitude are unlikely to take place and would be socially undesirable.

Reducing Pension Eligibility

One way to reduce the number of individuals eligible for pensions is to increase statutory retirement ages. Increasing the retirement age helps pension finances by increasing the years of contributions and reducing the number of years pensions are paid. In addition to its fiscal impact, raising retirement ages has other advantages: it would have a positive impact on economic growth by promoting higher employment levels; it would boost the growth of real consumption, even in the short term; and it could help avoid even larger cuts in replacement rates (IMF, 2011a).

In Russia, the objections often raised to increasing retirement ages are the relatively frail health and low life expectancy of the elderly, particularly males. The

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11 For the notional defined-contribution component, for which the savings from delaying retirement could be offset by higher benefits, increasing statutory retirement ages would also entail an adjustment of the conversion factor from notional accounts to pensions. The simulations herein assume that increases in the statutory retirement ages do not increase the replacement rate. Under current law, an increase in the statutory retirement age would offset part of the decline in the replacement rate (because returns on the notional defined component depend on the number of contributors).

12 Another objection often raised is that it would increase unemployment. However, there is little evidence that increased labor force participation of the elderly would increase the aggregate unemployment rate in the long term. See, for instance, IMF (2011a).
argument is usually that it will be impossible for many to extend their working lives. The Ministry of Health and Social Development of the Russian Federation (2010) notes that more than 70 percent of the recipients of early old-age pensions who have not reached the universal retirement age continue to work—the majority of them at the same jobs. Thus, the majority of the individuals who retire early do not seem to have health impediments that prevent them from working. Therefore, delaying the effective retirement age could be a feasible option for many Russians. In addition, the expected improvements in life expectancy at retirement—about one year per decade—indicate that at least part of these gains in longevity could be spent in the workforce.

One option would be to equalize the retirement age across genders, that is, to set the statutory retirement age at 60 for both men and women. Today, most advanced economies have equal ages of retirement for both genders and many emerging market economies are in the process of equalizing them. Equalization in Russia could be done gradually over the next 10 years. Such a reform would reduce pension spending by nearly 2 percentage points of GDP in 2030 and 2050 (Figure 19.5).

A more ambitious reform could aim to gradually increase the retirement ages of both men and women to age 63 by 2030. This proposal alone would be enough to keep pension spending in 2030 as a share of GDP essentially unchanged from its 2010 level while maintaining a replacement rate of about 40 percent. However, without further increases in statutory retirement ages, pension spending will start to increase after 2030—from 9 percent in 2030 to 11½ percent in 2050. If, instead, the pension age for both sexes were further increased to 65 years by 2050—about one year per decade, in line with the projected increases in longevity—pension spending in 2050 would be only marginally above its 2010 level. This shows that retirement age increases in line with life expectancy would be required to keep spending in check. Of course, if

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13Kolev and Pascal (2002) examine the factors that lead pensioners in Russia to continue working and conclude that making the receipt of full pension benefits conditional on leaving the labor force could save public resources and allow higher pension benefits for those unable to work.

14Strategy 2020 (2011) proposes increasing the retirement age to 63 for both sexes by 2030, among other proposals to provide an “adequate pension size.” Dmitriev (2011, 2012) proposes increasing the pension age to 63 for both sexes by 2025. He estimates that this reform plus a restructuring of early retirement schemes could cover two-thirds of the funding gap for the PFR. Gurvich (2010) investigates the option of increasing the retirement age to 62 for men and 60 for women, which would yield a replacement rate of 35 percent in 2030 and 31 percent by 2040, and estimates in Gurvich (2011) suggest that increasing the pension age to 62 for men and 60 for women would yield savings of 1.4–2.3 percent of GDP. Sinyavskaya (2005) emphasizes the importance of raising the retirement age for women to equalize it at age 60 with men, as well as reforming early pensions and the right to work while collecting a pension. Góra, Rohozynsky, and Sinyavskaya (2010) analyze various pension reform options for Russia, including an increase in the pension age, but do not include quantitative estimates of the impact. They note, however, that an increase in the retirement age would lead to longer participation in the labor market and reduce pressure to increase contribution rates. Nazarov (2011) notes an increase in the pension age is needed but may be politically difficult in the near term. He suggests that tightening pension indexation rules and introducing incentives for voluntary delayed retirement could be first steps on a path to future reform that should include parametric reforms of the PAYG system.
Considering that the average retirement age is 52 for women and 54 for men, there would be women and men who are presently retiring before age 50 who are not captured in this simulation. Therefore, life expectancy developed differently from what is currently projected, the required changes to the retirement age would be different. Also, it is important to note that some people might not be able to keep working much longer beyond the current retirement ages, so these proposals should be accompanied by adequate disability pensions and social assistance programs to protect those who cannot extend their working lives. For those who are able to extend their working lives, it would be important to tighten eligibility criteria for disability and survivors pensions as the retirement age is increased.

As noted, a significant share of retirees take advantage of early retirement. In the baseline scenario, it is assumed in this chapter that no one can retire before age 50 and everyone retires at the statutory retirement age of 55 for women and 60 for men. Those who have not yet reached retirement age are counted as retired if they were employed at ages 45–49 but are no longer employed at 50–54 for women or 50–59 for men.

Tightening early retirement eligibility could also help contain pension spending, though not to the same extent as increases in the retirement age. For example, if it is assumed that no individual can claim a pension before age 55 for women and 60 for men, pension spending would be decreased by about half a percent of GDP in both 2030 and 2050.\(^\text{15}\)

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\(^\text{15}\) Considering that the average retirement age is 52 for women and 54 for men, there would be women and men who are presently retiring before age 50 who are not captured in this simulation. Therefore,
Increasing Revenues

Projected public pension spending increases could also be offset by increasing system revenues, for example, by increasing the payroll tax rate from its current level of 22 percent of wages to about 30 percent of wages in 2030 and to more than 40 percent in 2050. These levels of contribution are higher than the currently observed payroll tax rates in other countries—nearly all advanced and emerging market economies have pension contribution rates of less than 30 percent of wages. These large contribution hikes can have adverse labor market effects and can further promote informality. In addition, such increases would go against Russian authorities’ recent efforts to reduce the cost of labor—contribution rates were reduced from 26 percent of wages to 22 percent in 2011.16 Other options for increasing revenues include using alternative revenue sources, such as consumption taxes, particularly to finance the redistributive components of the system such as allowances.17 Similarly, Russia can aim to improve the efficiency of payroll contribution collection.

Reform Options and Their Impact on Equity

The options presented above could all help to make the Russian public pension system fiscally sustainable in the future. However, because the burden of adjustment would fall on different parts of society, their implications on equity would differ.

Reducing the average replacement rate sharply in the coming decades could lead to a significant increase in pensioner poverty, would make the system less equitable, and as argued, would be socially undesirable. This result is magnified because the replacement rate for workers on below-average salaries would be even lower than the average (Dmitriev, 2013). Increasing revenues, for example, by raising payroll taxes, would similarly have an adverse effect on equity because it would introduce labor market distortions, and the increased funding needs would have to be borne by future workers. By contrast, reducing pension eligibility by increasing the statutory retirement age in general and that of females in particular, and by limiting the availability of early retirement options, would make the Russian public pension system more equitable because it would align contribution and benefit periods more closely.18

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16 In Russia, recent reforms have shifted payroll tax collection to the PFR. Although establishing a unified collection agency can have many advantages, the integration of collection can be very difficult, particularly in countries in which tax administration and the social security agency are at very different stages of modernization (Barrand, Ross, and Harrison, 2004). Before integrating collection tasks, efforts should focus on harmonizing policy and legislation for compliance and increasing interagency coordination and data sharing. Furthermore, it is important to proceed with a broad-ranging modernization program across all government sectors.

17 Note that allowances are currently financed from the federal budget, not from pension contributions.

18 Even equalizing male and female statutory retirement ages would not ensure equality, however, because females have a substantially higher life expectancy at retirement than do males.
CONCLUSION

The appropriate reform mix depends on country circumstances and preferences, although increasing retirement ages can have many advantages (Karam and others, 2010). First, it would promote higher employment levels, which would raise both the rate and level of economic growth. In contrast, raising distortionary payroll taxes could decrease labor supply and potential economic growth. By increasing lifetime working periods and earnings, raising the retirement age can also boost the growth of real consumption, even in the short term. Second, raising retirement ages would help avoid a socially undesirable decrease in the replacement rate. Third, increases in retirement ages could also be easier for the public to understand in light of increasing life expectancies. Fourth, out of the available options, it would have the biggest impact on equity.

Given that retirement ages are low in Russia, the most immediate policy reform option is to raise them. This chapter finds that gradually increasing statutory retirement ages for men and women to 63 by 2030 and to 65 by 2050 will largely contain public pension spending while maintaining a replacement rate of about 40 percent. If life expectancy trends beyond 2030 turn out to be different from those currently projected, these increases could be revised accordingly. At the same time, increases in the retirement age should be accompanied by measures that protect the incomes of those that cannot continue to work. Older workers should be protected fully by disability pensions where appropriate and by social assistance programs to ensure that increases in retirement ages do not raise poverty rates. This will be particularly important in a country as diverse as Russia, which is home to many ethnic groups facing very different life circumstances and with significant differences in life expectancy, and where a “one-size-fits-all” policy would have limitations.

Increases in the statutory retirement age should also be accompanied by steps to limit early retirement. One way to limit early retirement is to phase out the complex categorical system that allows certain occupations and professions to claim benefits early. Another way to limit early retirement is to strictly control alternative pathways to retirement such as disability pensions, for instance, by conditioning disability pensions on stringent medical evaluations. In any case, benefits claimed before the retirement age should be reduced to reflect the longer period over which they will be received.

Reforms to put Russia’s pension system on a sustainable footing could help support the needed fiscal adjustment in the medium to long terms to ensure an enduring return to a sustainable fiscal position.

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Macroeconomic Implications of Pension Reform in Brazil

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INTRODUCTION

The long-term challenges facing Brazil’s pension system are well documented. Recognizing these challenges, the authorities have sought to advance reforms. Much of the debate has focused on the fiscal implications of the outlook for and possible future adjustments to the pension system. However, different reform options can have very different macroeconomic implications, including for savings and growth, and have different effects on the intra- and intergenerational distribution of wealth. To illustrate these differential impacts and to inform the debate on the issue, this chapter simulates the general equilibrium effects for Brazil of various pension reform options that have been used in countries around the world. All options examined help address the system’s long-term funding gap and are conducive to raising real private savings and growth in the long term. However, the analysis finds that reforms that involve lower mandatory contributions or higher retirement ages have larger effects on output through a boost in labor supply. Meanwhile, reforms focused on reducing benefits would promote growth mostly through a larger impact on private savings.

THE BRAZILIAN PENSION SYSTEM

Current Structure and Fiscal Position

The Brazilian public pension system currently comprises three defined-benefit schemes: a mandatory private sector regime (Regime Geral de Previdência Social, RGPS), currently covering some 25 million beneficiaries and disbursing the equivalent of about 7 percent of GDP; a mandatory public sector regime (Regimes Próprios de Previdência Social, RPPS), with close to 1 million beneficiaries

1In addition, a network of private pension funds (mostly defined contribution) is growing. Participation in these schemes is voluntary, and the government plays only a regulatory and monitoring role. An optional defined-contribution pillar was introduced in 2013 in the public sector, and is discussed in the chapter.

This chapter updates and builds on IMF (2012). The author is thankful for comments provided by the Brazilian authorities.
and disbursements of some 2 percent of GDP; and a noncontributory branch for rural workers, disabled people, and other low-income families, which disburses the equivalent of 0.7 percent of GDP (Table 20.1). Benefits are financed from the current proceeds of a payroll tax, paid by employees, of 8 percent to 11 percent of wages; a 20 percent contribution tax by employers (which also finances other social insurance benefits, such as for sickness and maternity); and two other specific taxes. Both contributions and benefits are capped in the RGPS, but in the RPPS only future participants will be subject to such rules (see below).

Pension spending in Brazil is very high by international standards (Figure 20.1), considering the relative youth of the Brazilian workforce. Indeed, both the RGPS and RPPS are running deficits—each close to 1½ percent of GDP in 2012—as a consequence of relatively generous replacement rates, a low average retirement age, and current indexation rules. The indexation of minimum pensions to the minimum wage is a particularly large driver of overall pension costs.

It has been estimated that the pension system faces a net present value (NPV) funding gap of close to 25 percent of GDP during the 2010–30, rising to

\[ \text{NPV funding gap} \approx 0.25 \times \text{GDP} \]

\[ \text{Average retirement age} \approx 53 \text{ (men)} \]

\[ \text{Average retirement age} \approx 60 \text{ (women)} \]

\[ \text{Minimum wage indexation} \]

\[ \text{Transition rules apply to older cohorts of participants.} \]

**Sources:** Gragnolati and others (2011); and author’s elaboration.

**Note:** RGPS = Regime Geral de Previdência Social; RPPS = Regimes Próprios de Previdência Social. Based on the most recent active rules. Transition rules apply to older cohorts of participants.
100 percent through 2050. Under current rules, the financing needs of the social security system should undergo a modest rise in the coming 20 years, when the population is still relatively young. After that, the funding gap will increase sharply as the old-age dependency ratio continues to rise steeply (to more than 60 percent in 50 years, from 10 percent in 2012).

**Distributional Features**

Important reductions in old-age (and overall) poverty have been accomplished in Brazil through the pension system, particularly since early in the first decade of the 2000s (Gragnolati and others, 2011). Currently, about 40 percent of total pension spending goes to beneficiaries receiving the minimum pension (two-thirds of RGPS beneficiaries), which has more than doubled in real terms since 2000. As a consequence, poverty rates in the 60 and older age group fell to less than 5 percent as of 2008, and there is now practically universal coverage of the elderly population at the benefits phase. In contrast, however, coverage rates in the contribution phase are still estimated to be less than 50 percent (Gragnolati and others, 2011)—albeit comparatively large within Latin America—in part because the system discourages labor formalization at the lowest income level (through high contributory rates coupled with high noncontributory benefits).

When compared with other social assistance programs in Brazil, the pension system consumes a relatively high share of federal resources, even when exclusively

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5The estimates are based on the authorities’ actuarial projections of RGPS and RPPS financing needs as of April 2012, as well as of the fiscal impact of the latest reform (see the “Macroeconomic Implications of Alternative Pension Reform Options” section of this chapter) and IMF staff projections of public pension increases (Clements and others, 2013).
considering the part allocated to minimum pensions. Other forms of social support, including unemployment benefits, generate an annual cost of less than 2 percent of GDP, while covering as many as 13 million low-income households through the Bolsa Família program alone (which costs less than ½ percent of GDP). This fact, coupled with the notoriously high contribution rates, imply a strong distributional bias toward the elderly in Brazil (Gragnolati and others, 2011). Within the pension system, in turn, resources are redistributed from richer to poorer regions (and from urban to rural workers), but the high replacement rates indicate an undesirable allocation of resources to wealthier pensioners (Rocha and Caetano, 2008).

The RPPS has traditionally offered especially advantageous conditions, including very high replacement rates (still equal to 100 percent for participants who started service before 2003, compared with an average of the best 80 percent of monthly salaries during the working life in RGPS), a short entitlement period (only 10 years of civil service to qualify for an RPPS pension), and the indexation of pension benefits to the salaries of active civil servants instead of inflation. This explains why deficits in the two subsystems are of the same order of magnitude, even though the RGPS has much wider coverage.

Recent Reforms

Important changes to the RPPS were first enacted in 2003, including steps for the ongoing establishment of a dual-pillar system (2012 reform). Faced with mounting pension costs (a 1998 pension reform had a relatively limited impact on curbing deficits) and rising external risk premiums, a reform of the pension subsystem for civil servants was introduced in 2003 to improve its long-term fiscal prospects. The reform introduced a number of parametric changes: an 11 percent tax on pension benefits, lower replacement rates (harmonizing the rules with RGPS for new civil servants), and a penalty for early retirement of 5 percent of benefits per year (before age 60 for men and 55 for women). It also set the stage for the creation of a fully funded pillar for public servants, which was finally approved by the Senate in March 2012 and implemented in February 2013.

The 2012 reform introduces a defined-contribution pillar to the RPPS. Benefits and contributions for new civil servants will be subject to the same ceilings as those in the RGPS, while participants have the option to enroll in a complementary

6Furthermore, benefits in the RGPS are subject to an adjustment factor (fator previdenciário), based on age and length of contributions, that was introduced in 1999 to account for changes in average life expectancy. However, contributions are uncapped in the RPPS (except for civil servants who joined after February 2013), while they are subject to a ceiling in the RGPS.

7Levied on the portion exceeding 60 percent of the RGPS’s benefits ceiling, for all RPPS participants.

8The minimum retirement age is 53 for men and 48 for women, provided that participants contribute for the full 35 years for men and 30 for women (to either the RGPS or RPPS).

9The 2012 reform applies to federal government employees only. Some large states already had a similar system in place, while several other government agencies are considering adopting it.

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The defined-contribution scheme (Previdência Complementar) if they wish to receive a pension greater than the ceiling. Previously active civil servants may choose to stay in the old system or switch to the new two-pillar system. Participants can choose how much to put into a retirement account, knowing that the employer will match their investments by up to 8.5 percent of the portion of their salaries that exceeds the RGPS’s ceiling. Upon retirement, they receive the returns from this investment.\(^\text{10}\)

During a long first stage of implementation, the 2012 reform will generate a net cost driven essentially by the loss of contributions to the pay-as-you-go (PAYG) pillar. The state will also be making transfers to the individual pension accounts on behalf of employees. However, because the reform affects only the RPPS subsystem and the contribution ceiling is relatively high—only one-third of civil servants earn salaries above the base—the transition cost is expected to be contained (about 0.1 percent of GDP per year).

As new generations of civil servants retire and receive lower disbursements, the government will reap the benefits of the 2012 reform. In net terms, the authorities expect an improvement in the balance of the RPPS from 2033 onward and a neutral fiscal impact in the mid-2040s, with gains rising to 0.4 percent of GDP per year in the long term. IMF staff estimates point to an overall impact of about 10 percent of GDP in NPV terms in the long term.

10The defined-contribution scheme is to be administered by a newly created Fundação de Previdência Complementar do Servidor Público Federal (Funpresp), divided into three branches for servants in the executive, judiciary, and legislative branches, respectively. Members of the Funpresp’s Executive Board and Financial Committee are appointed by the government, but the institutions enjoy administrative independence and are subject to a private legal regime (like public enterprises).
The introduction of a funded pillar into the RPPS is advantageous. The reduction of replacement rates for higher earners is expected to encourage long-term private savings and thereby support the development of financial markets. The progressivity of the RPPS system is also enhanced, as is equity with private sector workers. Finally, the relatively small transition cost is important for the sustainability of the reform—especially given that the fiscal framework in Brazil is anchored by a primary surplus target—in light of international experience in which costly pension transitions have, at times, led to some unwinding of pension reforms. Brazil’s reform may thus be a stepping stone for further improvements to the system.

The next section comments on the macroeconomic effects that this reform is expected to generate, paying particular attention to the role that the choice of financing strategy may have on the prospect for increasing savings at a national level. It is followed by a section that discusses two other types of reforms that have commonly been adopted to address long-term pension system imbalances—benefits cuts and increases in retirement age. Before concluding, the chapter briefly discusses the equity implications of the various reforms.

MACROECONOMIC IMPLICATIONS OF THE 2012 REFORM

The chapter now assesses the broader macroeconomic implications of the recent reform. The analysis uses the IMF’s Global Integrated Fiscal and Monetary (GIMF) model parameterized on data for the Brazilian economy.\textsuperscript{11} The GIMF is a non-Ricardian, dynamic stochastic general equilibrium model that features overlapping generations, finite horizons (myopia), and endogenous labor and capital markets, allowing for a meaningful discussion of the short- and medium-term impacts of pension reforms.

The baseline is an economic environment reflecting fiscal trends in Brazil before the collapse of Lehman Brothers and the ensuing global financial crisis. In particular, data as of 2007 were used to parameterize initial levels of government spending, revenue decomposition, and transfers (including pensions), thereby abstracting from the impact of the crisis on these variables. Net public debt is assumed to be 40 percent of GDP in the initial steady state.

The 2012 reform is introduced as a shock, first to contribution rates and later to pension benefits. By capping mandatory contributions to the PAYG pillar, the government will effectively be lowering average mandatory contribution rates for public servants. Based on the estimated transition cost shown in Figure 20.2, the analysis proxies that change by the shift in labor taxes that, in the model, would produce such a cost (up to its peak in 2035). In other words, the analysis assumes that contributions to defined-benefit schemes are generally perceived by participants to be a

\textsuperscript{11}A detailed outline of the GIMF model can be found in Kumhof and others (2010).
tax, in contrast to an optional defined-contribution plan.\textsuperscript{12} After 2035, the average contribution rate is fixed and the fiscal trajectory thereafter is dictated by the reduction in pension benefits for new entrants.\textsuperscript{13} As will be shown, the quantitative impact of the reform is small in broad macroeconomic terms, but this outcome is only a consequence of the circumscribed scope of the reform (the limited number of affected beneficiaries). The results do suggest a high elasticity of private savings and growth rates to the implied fiscal savings for this particular reform.

### Macroeconomic Impact When the Reform Is Financed by Public Debt

For illustrative purposes, the exercise first analyzes the effects of the 2012 reform under the assumption that it is financed by public debt. The resulting path of the relevant fiscal variables, in deviations from the baseline scenario, is shown in Figure 20.3. Primary balances worsen in the first 20 years and improve subsequently, as in the estimated net costs and benefits shown in Figure 20.2. Implicitly, the initial increase derives from the reduction in the average contribution rate of 0.2 percentage points by 2027. Pension benefits start falling on that date, and the system matures with disbursements 0.4 percent of GDP lower than the baseline. Because public investment does not change and the impact on GDP is small (see below), net public savings mirror the dynamics of the overall deficit.

Labor supply increases, pushing up real GDP growth (Figure 20.4). The drop in compulsory contribution rates reduces a labor market distortion, raising marginal incentives to work and thereby increasing the return on capital.\textsuperscript{14} Real investment is thus higher, although with some recoil in the medium term because real interest rates rise during that period.\textsuperscript{15}

As expected, the reform creates incentives to increase private savings. Faced with higher net income during their working lives and foreseeing lower pension transfers in the future, individuals accumulate savings during the next 30 years, incidentally in the form of optional contributions to the second pillar of the pension system. The subsequent drop in government transfers reduces disposable household income and thus the ratio of private savings to GDP, but in NPV terms, private savings increase. Because agents are myopic and a share of the population is liquidity constrained, consumption is not perfectly smoothed. Furthermore, private savings undershoot in

\textsuperscript{12}The analysis also assumes that the copayments by public employers to the optional pension savings accounts are perceived to be part of the tax rate reduction, and participants would take that into account when targeting a desired pension savings amount.

\textsuperscript{13}The GIMF features two types of agents: a group of liquidity-constrained households (LIQ agents), who do not have access to capital markets, and intertemporal optimizers (OLG agents), who can borrow and save. This section assumes that reductions in PAYG benefits affect only OLG agents because, in reality, only the highest earners will be affected.

\textsuperscript{14}Labor and capital are complementary factors of production in the model.

\textsuperscript{15}With both higher labor supply and capital accumulation, real GDP increases above its long-term trend during the first years, which ends up putting pressure on prices. Monetary policy therefore adjusts by hiking real interest rates temporarily.
the medium term because the long-term decline in pensions is not fully internalized by the currently active population.

National savings, however, stay roughly constant during the transition period. Initially, higher household savings are simply traded off for government debt accumulation. However, as pension benefits drop permanently, so do private savings, the public debt ratio, and interest payments. Therefore, national savings rates increase slightly in the very long term, owing almost exclusively to lower public debt service. With the investment ratio mostly constant over the entire period, the current account improves permanently after the transition period.

Although a low impact from multipillar reforms on total savings has been observed in a number of emerging market economies (Figure 20.5), the existing evidence is far from conclusive.\textsuperscript{16} In countries such as Chile, Peru, and Latvia,

\textsuperscript{16}The World Bank’s Independent Evaluation Group (2006) notes a generally small impact on national savings in the short to medium term. A number of papers also note a very high (low) substitutability.
Figure 20.4  The 2012 Reform with Debt Financing: Impact on Macroeconomic Variables
(Deviations from steady state; periods correspond to years)

Source: IMF staff calculations.
national savings rose in the aftermath of reform, but in other cases—including Colombia, Mexico, and Uruguay—it either remained unchanged or dropped slightly. The relationship between these types of reforms and savings is nonetheless hard to pin down in the long term because savings rates depend on myriad factors. In practice, reform packages often include parametric changes, such as increases in the retirement age, that have adverse effects on private savings (see below). Furthermore, an important determinant of the impact on savings is the financing strategy for the transition cost, as argued in the next paragraphs. Finally, the relatively short interval since most multipillar reforms were introduced—particularly in central and eastern Europe—makes it hard to fully assess the impact on household savings and labor incentives. Indeed, reforms of pension systems in the 1990s in advanced economies such as Sweden have been associated with increases in household savings, but these behavioral changes have only been observed gradually over long periods.

**Macroeconomic Impact When the Reform Is Financed by Government Savings**

Given the primary surplus fiscal target used in Brazil, one may alternatively assume that the transition cost will be financed by a reduction in government con-
Likewise, when the reform produces a net benefit (after 2035) it is assumed that government consumption rises commensurately. This assumption does not significantly affect the short- to medium-term macro-impulses, but it leads to a lower government saving rate and higher private savings in the very long term.

As before, the fall in contribution rates promotes labor supply, investment, and real growth; however, the impulse to national savings turns positive at all dates (Figure 20.6). Tighter fiscal balances (lower weight of the public sector) over time render the impact on aggregate labor supply stronger in the longer term, which, in turn, brings up real GDP by more than double the amount found when the reform is financed through debt. At the same time, the decline in government consumption keeps government savings close to the baseline level. National savings will then rise in the short to medium term, arguably in the form of increased savings in household retirement accounts.

MACROECONOMIC IMPLICATIONS OF ALTERNATIVE PENSION REFORM OPTIONS

Reflecting existing high costs, which will be exacerbated by the demographic transition, further adjustments to the social security system will be needed. Efforts will likely need to focus not only on the RPPS—toward an equalization of regimes for public and private sector workers—but also on the RGPS. Although less generous, the private sector subsystem covers a much wider range of the population and is therefore bound to be most affected by population aging. Furthermore, as discussed above, the NPV of the 2012 reform is modest when compared with the actual pension gap.

The chapter now presents some illustrative simulations of the macroeconomic effects of possible alternative approaches. For the purposes of this analysis, the focus is on parametric changes to the PAYG systems that reduce their financing needs, other than those associated with an expansion of the defined-contribution pillar. However, the simulations from the previous section suggest that an expansion of the defined-contribution pillar could be beneficial (by further reducing the contribution ceiling in the first pillar and increasing the importance of pension savings accounts), should the government identify fiscal space to finance the transition cost.

With a medium- to long-term horizon in mind, the analysis uses average pension spending in Group of 20 countries as an indicative benchmark for Brazil. Convergence to such an average would result in a decline in social security disbursements in Brazil of about 2 percent of GDP, practically eliminating the projected social security deficit, barring aging pressures. These simulations assume that such reforms could be phased in during the next 20 years. This gradual implementation would be associated with higher sustainability of the reforms over

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17 Likewise, when the reform produces a net benefit (after 2035) it is assumed that government consumption rises commensurately. This assumption does not significantly affect the short- to medium-term macro-impulses, but it leads to a lower government saving rate and higher private savings in the very long term.
Figure 20.6  The 2012 Reform with Constant Primary Surplus: Impact on Macroeconomic Variables (Deviations from steady state; periods correspond to years)

Source: IMF staff calculations.
Note: CPI = consumer price index.
time, which Brazil can afford because it still enjoys the demographic dividend of a young labor force and a low overall old-age dependency ratio. Two types of general, stylized instruments are considered for convergence to such a benchmark—lowering benefits and increasing the retirement age—and in both cases it is assumed that the government keeps its primary surplus target unchanged.¹⁸

A number of specific policies could be adopted to achieve a direct reduction in benefits. In the short term, addressing the generosity of survivor benefits is in order. Survivor pensions have a replacement rate of 100 percent and are not contingent on wealth, income, age, or remarriage status.¹⁹ In total, survivor benefits account for about one-quarter of total pension spending by the federal government (RGPS and RPPS). Furthermore, a change in the minimum pension indexation rules could be considered. Replacement rates could gradually be aligned with international practice—average net replacement rates in the Organization for Economic Cooperation and Development stand at about 60 percent, while they approach 100 percent in Brazil. Revisiting the formula of the fator previdenciário²⁰ (and extending the concept to the RPPS) is a possible avenue for doing so on a permanent basis given that it would automatically adjust benefits to life expectancy. Although originally meant to discourage early retirement, the introduction of the fator has instead mostly contributed to a reduction in pension spending.

Average retirement ages could be increased directly by hiking the minimum retirement age or by penalizing early retirement (for instance, extending the minimum years of contributions required to qualify for a full pension). The government could also consider eliminating the compulsory retirement age of 70 years. It has been estimated—based on the current level of pensions and life expectancy at average retirement age—that the average retirement age would need to be increased by three years to produce savings of 2 percent of GDP. Assuming a 20 percent lower labor force participation rate for workers older than the current average retirement age, such an increase corresponds approximately to a 7 percent increase in the workforce. As a first approach, existing gender differences in the qualification criteria could be reduced. Originally meant to compensate for maternity, earlier female retirement ages will become increasingly costly with the rise of female labor force participation in Brazil, and can be replaced by better targeted maternity support programs.

The decline in benefits raises private savings,²¹ investment, and labor supply (Figure 20.7), although with a modest gain in real GDP of 0.8 percent in 20 years.

¹⁸The analysis adjusts government consumption so that the target is met. Public investment or taxes could be adjusted instead, although the effects on real GDP would be harder to identify. For simplicity in the simulation, the analysis also assumes that pension reductions are evenly spread across liquidity-constrained and -unconstrained agents (see footnote 13).

¹⁹In the RPPS, the replacement rate falls to 70 percent above a threshold equivalent to the RGPS’s contribution ceiling.

²⁰See footnote 6.

²¹In this scenario, the longevity risk is transferred from the government to individuals, who would now rely more on own savings to provide for retirement. Doing so effectively would require developing a well-established annuities market by insurance companies, supported by the appropriate regulation and financial education.
Figure 20.7  Decrease in Pension Benefits: Impact on Macroeconomic Variables (Deviations from steady state; periods correspond to years)

Source: IMF staff calculations.
When the reform is announced, current workers and beneficiaries internalize the permanent decline in future pension benefits. Thus, consumption immediately drops and savings rise, putting downward pressure on interest rates. Labor supply increases—because consumption and leisure are complementary goods—which, together with the lower interest rate, encourages higher private investment. As transfers decline, so does disposable income, and consumption will continue converging to a lower level. For the same reason, the private savings rate eases in the long term, but it is still permanently higher than in the baseline. In all, the national savings rate increases on the back of higher private savings and a permanent (albeit small) reduction in public debt service.

By contrast, an increase in retirement ages depresses savings in the short to medium term (Figure 20.8), but has a large positive impact on investment and output growth (a 6 percent increase). Agents foresee a shorter retirement period at the time the reform is announced, and immediately decrease savings. Interest rates go up, but the substantial rise in labor supply improves returns on capital so much that private investment rises in equilibrium. This increases demand pressures, contributing to higher interest rates. In the medium to long term, output rises significantly, as does household disposable income. Thus, private saving rebounds in real terms, although its ratio to GDP is permanently lower than in the baseline. With a slightly higher deficit, the national saving rate falls permanently in this case, although mostly as the result of GDP growth.

**EQUITY IMPLICATIONS OF THE VARIOUS PENSION REFORM OPTIONS**

Population aging will continue to drive the reform agenda in Brazil, and will require that the pension system be less generous in the future. Although future retirees would be less favored in all options considered in this chapter, the analysis has also shown that economic conditions, and thereby wealth, would improve relative to a no reform scenario (although with more working hours during a lifetime). It is important to note that the choice of reform strategy also carries different distributional effects, both within and across generations.

The 2012 reform will contribute to a more equitable future system. Should it be financed with public savings, it will also enhance intergenerational equity. Replacement rates in the RGPS and RPPS will be almost identical, benefiting both equity and mobility across the public and private sectors for the next generations. Furthermore, the cap on first-pillar benefits and contributions under the RPPS is both intra- and intergenerationally redistributive because it (1) affects high-income earners only, and (2) reduces the contribution rates of young and future workers, who will also receive lower pensions. If the transition cost is financed by current public savings (for example, with a reduction in government consumption), the burden of adjustment is spread across all cohorts alive in the coming 35 years, including current retirees. In contrast, if it is financed with debt, today’s young and future cohorts will be left paying for the full cost of the reform.
Figure 20.8  Increase in Retirement Age: Impact on Macroeconomic Variables (Deviations from steady state; periods correspond to years)

Source: IMF staff calculations.
Across-the-board benefit cuts are normally inequitable, both within and across generations. To mitigate such an effect, reforms should target the wealthiest for the largest benefit revisions. The comparatively high replacement rates in Brazil, specifically among higher-income percentiles, suggest ample space for doing so. A case in point is survivor pensions, which consume a significant amount of resources and are not conditioned on either income or wealth. Conversely, the revision of minimum pension indexation rules, which is desirable from a sustainability point of view, will most directly affect the poorest pensioners. Finally, equitably increasing retirement ages calls for a similar alignment of statutory retirement ages with life expectancy across the various groups (by generation, gender, profession, and so forth). Other equity concerns, not related to retirement, can be addressed through complementary programs.

For both direct benefit cuts and increases in retirement ages, saving the fiscal windfall from the reform would enhance intergenerational equity by lowering debt, which translates into lower taxes in the future, when pensions would also fall.

CONCLUSION

Current levels of pension spending in Brazil are high by international standards, particularly given that the country is now enjoying the peak of its demographic dividend. The generosity of the system is believed to provide disincentives for private savings, investment, and aggregate labor supply. If unadjusted, pension spending pressures in Brazil will compromise fiscal sustainability without substantially squeezing discretionary spending or resulting in further increases in already high—by emerging market standards—income and consumption taxes.

This chapter’s simulations suggest important effects on macroeconomic variables, such as savings and growth, from different parametric adjustments that have been used in other countries and that might possibly be considered in Brazil. The chapter discusses the macroeconomic impact of different parametric reform options, starting with the recently approved introduction of a defined-contribution scheme for the public sector subsystem. The analysis finds that pension reforms increase real private savings and growth, although the elasticities to implicit fiscal savings are quite different across the different options. Reforms that involve an increase in retirement ages or a decline in average contribution rates are supportive of higher growth through their positive impacts on labor supply and investment, even if the impact on savings is not necessarily higher than in options that focus primarily on reducing benefits.

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—Alicia H. Munnell
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