CHAPTER 1

Equitable and Sustainable Pension Systems

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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

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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)).
Equitable and Sustainable Pension Systems

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,
in turn, is influenced by whether participants trust the government’s long-term commitment to these objectives and whether the system’s rules are stable and understandable to the public.

**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).
(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 distortional 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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4 One 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.

5 Actuarial fairness requires that the present value of lifetime contributions equals the present value of expected lifetime benefits.
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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6The effectiveness of this measure is determined by how the retirement age increase affects lifetime contribution revenues and benefits.
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.

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7Large 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.

8In 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

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9 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.
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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11For 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—increases 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
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.
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
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.

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