INEQUALITY and FISCAL POLICY

EDITORS
Benedict Clements, Ruud de Mooij, Sanjeev Gupta, and Michael Keen

INTERNATIONAL MONETARY FUND

This collection of articles adds greatly to our understanding of the link between economic performance and inequality, combining theory, econometrics, and case studies, and looking at both taxes and expenditures. The questions are investigated in a huge range of circumstances—both developed and developing countries, at the national and subnational levels. The IMF recognizes that its policies can have huge distributive consequences and so this book will be important not only for guiding its own work, but for scholars and policymakers seeking to further enhance our understanding of the determinants of inequality and devising policies that might reduce it.

—Joseph E. Stiglitz
Professor, Columbia University

This volume constitutes a definitive reference for serious students concerned with the redistributive role of the state, particularly in developing countries. Careful technical analyses back new ideas, especially on the tax side, for progressivity with minimal or no trade-off with revenue and growth: the unexploited relevance of income and property compared to indirect taxes, the centrality of such "administrative" issues as tax compliance, the still-minor role of wealth taxes, the risk of bilateral tax treaties for low-income countries. Nor are the authors naïve about the politics. Another terrific IMF contribution on how to tackle inequality within and across countries. I hope IMF operational staff pay heed.

—Nancy Birdsall
President and Co-Founder, Center for Global Development

In this engaging collection, leading experts address the distributional effects of an array of fiscal instruments. The revenue chapters span income, consumption, and property taxation, while the spending chapters tackle means-tested and contributory cash transfers, as well as expenditures on health and education. The authors consider the effects of fiscal policies in countries at diverse levels of economic development, and over a period of decades, with keen attention paid to recent rounds of fiscal consolidation. This vividly detailed yet accessible volume fills a void in the inequality literature, and promises to prompt lively debate about the consequences of fiscal policy.

—Janet C. Gornick
Director, Luxembourg Income Study (LIS) Cross-National Data Center, Luxembourg, and Professor, Graduate Center, City University of New York

©International Monetary Fund. Not for Redistribution

This page intentionally left blank

©International Monetary Fund. Not for Redistribution

INEQUALITY and FISCAL POLICY

EDITORS
Benedict Clements, Ruud de Mooij,
Sanjeev Gupta, and Michael Keen

INTERNATIONAL MONETARY FUND

©International Monetary Fund. Not for Redistribution

© 2015 International Monetary Fund

Cataloging-in-Publication Data

Joint Bank-Fund Library

Inequality and fiscal policy / edited by Benedict Clements, Ruud de Mooij, Sanjeev Gupta, and Michael Keen. – Washington, D.C. : International Monetary Fund, 2015.
pages ; cm

Includes bibliographical references and index.

ISBN: 978-1-51356-775-4

1. Income distribution. 2. Fiscal policy. 3. Asia – Economic conditions. I. Clements, Benedict J. II. Mooij, Ruud A. de. III. Gupta, Sanjeev. IV. Keen, Michael. V. International Monetary Fund.

HB523.I548 2015

The views expressed in this book are those of the author(s) and do not necessarily represent the views of the IMF, its Executive Board, or IMF management.

978-1-51356-775-4 (hard cover)
978-1-51353-162-5 (paper)
978-1-51353-868-6 (PDF)
978-1-51350-999-0 (ePub)
978-1-51354-407-6 (Mobipocket)

Please send orders to
International Monetary Fund, Publication Services
P.O. Box 92780, Washington, DC 20090, U.S.A.
Tel.: (202) 623-7430 Fax: (202) 623-7201
E-mail: publications@imf.org
Internet: www.elibrary.imf.org
www.imfbookstore.org

©International Monetary Fund. Not for Redistribution

Contents

Foreword v

Acknowledgments vii

PART I | TRENDS IN INCOME INEQUALITY AND THE REDISTRIBUTIVE ROLE OF FISCAL POLICY

1 | Fiscal Policy and Income Inequality: An Overview 3
Benedict Clements, Ruud de Mooij, Maura Francese, Sanjeev Gupta, and Michael Keen

2 | The IMF and Income Distribution 21
Benedict Clements, Vitor Gaspar, Sanjeev Gupta, and Tidiane Kinda

3 | Inequality and Fiscal Redistribution in Advanced Economies 37
David Coady, Ruud de Mooij, and Baoping Shang

4 | Fiscal Redistribution in Developing Countries: Overview of Policy Issues and Options 57
Francesca Bastagli, David Coady, and Sanjeev Gupta

5 | Poverty and Distribution: Thirty Years Ago and Now 77
Ravi Kanbur

PART II | ALTERNATIVE MEASURES OF INEQUALITY AND THEIR IMPLICATIONS FOR FISCAL POLICY

6 | Functional Income Distribution and Its Role in Explaining Inequality 97
Maura Francese and Carlos Mulas-Granados

7 | The Wealth of Nations: Stylized Facts and Options for Taxation 121
Luc Eyraud

PART III | FISCAL CONSOLIDATION AND INCOME INEQUALITY

8 | Fiscal Consolidation and Inequality in Advanced Economies: How Robust Is the Link? 141
Davide Furceri, João Tovar Jalles, and Prakash Loungani

9 | Fiscal Consolidation and Income Inequality 159
Stefania Fabrizio and Valentina Flamini

PART IV | TAX POLICY AND INEQUALITY

10 | International Corporate Tax Spillovers and Redistributive Policies in Developing Countries 177
Ruud de Mooij, Thornton Matheson, and Roberto Schatan

11 | Taxing Immovable Property: Revenue Potential and Implementation Challenges 191
John Norregaard

©International Monetary Fund. Not for Redistribution

12 | Targeting and Indirect Tax Design 223
Michael Keen

13 | Carbon Tax Burdens on Low-Income Households: A Reason for Delaying Climate Policy? 233
Ian Parry

PART V | EXPENDITURE POLICY AND INEQUALITY

14 | The Unequal Benefits of Fuel Subsidies Revisited: Evidence for Developing Countries 255
David Coady, Valentina Flamini, and Louis Sears

15 | Equity Considerations in the Design of Public Pension Systems 275
Benedict Clements, Csaba Feher, and Sanjeev Gupta

16 | The Redistributive Impact of Government Spending on Education and Health: Evidence from Thirteen Developing Countries in the Commitment to Equity Project 295
Nora Lustig

17 | Income Inequality, Fiscal Decentralization, and Transfer Dependency 321
Caroline-Antonia Hummel and Mike Seiferling

PART VI | COUNTRY CASE STUDIES

18 | Reinventing the Dutch Tax-Benefit System: Exploring the Frontier of the Equity-Efficiency Trade-Off 341
Ruud de Mooij

19 | Growing (Un)equal: Fiscal Policy and Income Inequality in China and BRIC+ 355
Serhan Cevik and Carolina Correa-Caro

20 | The Quest for the Holy Grail: Efficient and Equitable Fiscal Consolidation in India 373
Chadi Abdallah, David Coady, Sanjeev Gupta, and Emine Hanedar

21 | A Path to Equitable Fiscal Consolidation in the Republic of Congo 389
Maximilien Queyranne, Dalia Hakura, and Cameron McLoughlin

22 | Fiscal Adjustment and Income Inequality in Brazilian States 401
João Pedro Azevedo, Antonio C. David, and Fabiano Rodrigues Bastos

Contributors 419

Index 425

©International Monetary Fund. Not for Redistribution

Foreword

Excessive income inequality in many parts of the world is one of the defining issues of our time. Not only is extreme income inequality a moral and political issue, but it has important macroeconomic implications. There is growing evidence that excessive income inequality is detrimental to macroeconomic stability and economic growth.

I strongly believe that economic growth should be more inclusive and therefore more sustainable. This means improving the design of government tax and spending policies; enhancing financial inclusion, so that the poor have access to credit and financial markets; and promoting transparency and good governance, so that the doors of opportunity are open to all.

The topic of excessive inequality is relevant for the IMF in all three of its core activities—lending to support macroeconomic adjustment programs; macroeconomic surveillance, including related policy analysis; and technical assistance to build capacity, especially on government taxation and spending.

Fiscal policy is the government's most powerful tool to achieve distributional objectives. Tax and spending policies must be designed wisely to minimize any adverse effects on incentives to work, save, and invest. On the revenue side, this implies building wider, more reliable tax bases by reducing exemptions, combating tax evasion, and strengthening administration. On the expenditure side, priorities include expanding access to education and health—which will bolster equality of opportunity—and better targeting of social benefits to the poor.

I hope this book will assist policymakers in designing more equitable fiscal policies that will help generate more equitable growth.

IMF advice has been mindful of the social impact of economic policies. Social spending floors are a key feature of programs supported under the IMF Extended Credit Facility for low-income countries. Measures to protect the most vulnerable have featured in IMF-supported programs with high-income members, including in the euro area. We are also addressing equity and social issues in our regular country-level economic surveillance, whenever they are macro-critical.

This book is designed to help further integrate income inequality issues into the IMF's policy advice. I hope it will also spark further debate and research on this topic both inside and outside the IMF.

Christine Lagarde
Managing Director
International Monetary Fund

©International Monetary Fund. Not for Redistribution

This page intentionally left blank

©International Monetary Fund. Not for Redistribution

Acknowledgments

This book has been a collective endeavor and has benefited from contributions from both inside and outside the IMF. We would like to thank the contributing authors for their close collaboration and enthusiasm for the topic. The research presented here has benefited from the comments of staff in the IMF's Fiscal Affairs Department and other departments. Several chapters have also benefited from valuable comments presented at seminars hosted by other institutions.

Michael Harrup of the IMF's Communications Department efficiently managed all aspects related to the production of the book, and we are grateful for his excellent work. We also thank Muriel Jolivert and staff in the Expenditure Policy Division of the IMF's Fiscal Affairs Department for their valuable support. We are especially grateful to Maura Francese for her thoughtful analytical contributions and skillful organization of the many steps needed to bring a book to completion.

Benedict Clements
Ruud de Mooij
Sanjeev Gupta
Michael Keen
Editors

©International Monetary Fund. Not for Redistribution

This page intentionally left blank

©International Monetary Fund. Not for Redistribution

PART I

Trends in Income Inequality and the Redistributive Role of Fiscal Policy

©International Monetary Fund. Not for Redistribution

This page intentionally left blank

©International Monetary Fund. Not for Redistribution

CHAPTER 1

Fiscal Policy and Income Inequality: An Overview

BENEDICT CLEMENTS, RUUD DE MOOIJ, MAURA FRANCESE,
SANJEEV GUPTA, AND MICHAEL KEEN

INTRODUCTION

Inequality is at the forefront of the economic policy debate in much of the world. This interest comes in the wake of the sizable increases in income disparities that many have seen during the past three decades or so, combined now with the need to deal with the continuing and severe consequences of the global economic and financial crisis. Policymakers face difficult challenges in understanding how to deal with trade-offs—or exploit complementarities—between their distributional concerns and other economic policy objectives, such as achieving high rates of economic growth and sustainable public finances. The aim of this book is to present recent research results that can help them address these challenges.[1]

Research on the causes and consequences of rising inequality has flourished in recent years, taking advantage of the growing availability of large micro data sets and of data covering longer time spans for an increasing sample of countries.[2] The phenomenal success of Piketty (2014) is a reflection of, and has further stimulated, extraordinary public interest in these issues.[3] More new thinking has focused on the analysis of these developments, however, than on how governments can design redistributive policies to address them, especially in countries with limited fiscal space. A key feature of the book is its focus on the design of fiscal policies in such circumstances.

Fiscal policy can be a potent tool for achieving a government's redistributive goals. It affects household welfare through both monetary payments (taxes and transfers) and provision of in-kind benefits (for example, free education and health services). Some tax and expenditure policies used to this end can distort incentives and reduce economic efficiency. In this regard, policymakers can do much, through careful policy design, to minimize these effects. Making certain social assistance programs conditional on participation in job training, for instance, can help strengthen incentives to return to work. In some cases, redistributive policies not only help achieve equity goals but also improve efficiency, especially when they address market imperfections. The lack of access to credit by poor households, for example, is a major market imperfection that prevents poor households from borrowing to finance education. In these circumstances, government financing of education can help families overcome this hurdle while strengthening both equity and the efficient accumulation of human capital.

[1] Inequality is, of course, closely related to, but distinct from, poverty. For the most part, the focus of this book is on the former.

[2] These databases include, for example, the Luxembourg Income Study Database, the Organisation for Economic Co-operation and Development Income Distribution Database, The World Top Incomes Database, the Socio-Economic Database for Latin America and the Caribbean, and the European Union Statistics on Income and Living Conditions.

[3] Other important recent publications include Atkinson 2015, Bourguignon 2015, and Atkinson and Bourguignon 2015.

©International Monetary Fund. Not for Redistribution

The fiscal tools that are available to address inequality-related concerns vary widely across countries, reflecting their differing administrative capacity. Advanced economies may be able to condition cash transfers quite finely on income, labor force participation, and other characteristics. In contrast, sophisticated means-testing is simply not an option for developing countries. One central aim of this book is to bring out this diversity of challenges by reviewing experiences in countries at quite different levels of development.

Another theme is the need to take a comprehensive view of both tax and spending programs to assess how fiscal policies affect, and are affected by, inequality. Looking at the effect of tax measures in isolation, without looking at the spending measures they help finance, would provide an imperfect guide for policymaking—a simple point that continues to be too often ignored, or respected in the breach.

The analysis presented in this book builds on and extends work undertaken at the IMF in the recent past, including a paper prepared for the IMF Executive Board on fiscal policy and inequality (IMF 2014a). Distributive issues have been an important part of IMF policy work for decades, reflecting early recognition of the social impact of macroeconomic policies (Tanzi and Chu 1998; Tanzi, Chu, and Gupta 1999). These efforts have intensified in recent years, especially in light of new evidence that extreme inequality can be damaging for macroeconomic stability and growth (Easterly 2007; Rajan 2010; Kumhof and Rancière 2011; Ostry, Berg, and Tsangarides 2014). With many governments engaged in fiscal consolidation, recent studies have also explored how fiscal adjustment can be designed to minimize any adverse effects on income distribution (Woo and others 2013). Equity issues have also been explored in the IMF's work on energy subsidies, pensions, and jobs and growth.

To set the scene for the chapters to come, the rest of this introduction provides an assessment of different approaches to measuring the effects of fiscal policy on inequality, as well as some of the key methodological challenges in assessing the distributive effects of taxes and spending. This is followed by a description of the main findings in each chapter of the volume.

KEY ISSUES FOR INEQUALITY ANALYSIS AND THE ASSESSMENT OF FISCAL POLICY

Incidence

Assessing how tax and spending policies affect inequality requires taking a view on how they affect real incomes—that is, on their incidence. Empirical studies answer this question by allocating total tax payments and the benefits of government spending across households in some way. And many do so on the basis of some simple assumptions. For instance, many assume that indirect taxes like value-added taxes (VATs) and excises are fully borne by consumers (not passed back to the profits of suppliers or wages of their employees) while personal income taxes are fully borne by employees (so have no effect on the pretax payments they receive).

Several difficult issues arise.[4] First, the tax payment allocated to a household in such a way gives a sense of the impact on real incomes, but that is different from the effect on welfare, because it ignores the deadweight loss associated with those taxes—the loss the household suffers because transactions that would otherwise have taken place no longer will. Second, and more fundamentally for this book, these assumptions often have no firm empirical basis. Basic public finance teaches, to take just one example, that taxes on commodities will be less than fully passed through to consumers in competitive markets with less than perfectly elastic supplies. And allowing for imperfect competition and links across markets, they might be more than fully passed on to consumers.

[4] Some of these issues are discussed in Boadway and Keen 2000. On the formalities of incidence analysis, see Kotlikoff and Summers 1987.

©International Monetary Fund. Not for Redistribution

Faced with these ambiguities, one looks to empirical evidence. This evidence is surprisingly sparse, but what there is warns against blithe acceptance of some of the standard assumptions. Benedek and others (forthcoming) find, for instance, that while changes in the standard VAT rate may indeed be fully shifted to consumers, the benefits of reduced rates may not be. And Rothstein (2010) finds that for each $1 spent on the earned income tax credit in the United States, about 27 cents benefits the employer, not the worker. Matters are still more complex in relation to other taxes: there is a lively debate, for instance, on the extent to which the corporate tax is passed on to workers (Gravelle 2011). And the incidence of tariffs—still very important in many developing countries—can be hard to assess, not least because it will affect not only those who purchase imports, and so pay some tariffs, but also those who purchase untaxed but nonetheless now more expensive domestic substitutes. Indeed, the incidence of what look like very similar taxes may well differ between advanced and developing countries, given differing economic structures and degrees of administrative capacity. They might also differ over time, given, for instance, changes in openness to trade and capital movements.

Further difficulties arise in assessing the distributional consequences of the public provision of health, education, and other services. The benefit of these services can be allocated across households by valuing them at the average cost of provision, but this approach may significantly understate households' true valuations, which are arguably the more relevant in assessing distributional effects. The issue becomes even more complicated when the quality of service provision to different income classes varies.

Perhaps surprisingly, the topic being so old, very much remains to be learned about the incidence of tax and spending policies. The assumptions commonly made may be defensible as broadly reasonable in the face of substantial ignorance, but their importance and sometimes weak basis needs to be remembered. The classic treatment of Whalley (1984) remains a salutary lesson, showing how by alternative plausible assumptions the incidence of the Canadian tax system can be made to look either broadly proportional to income or highly progressive.

Dimensions of Inequality

Inequality can be viewed from many perspectives.[5] Following most of the literature, the contributions in this book generally focus on inequality at the household level, measured primarily in monetary terms (annual income or consumption), and the effects of fiscal policies on these measures. But many other dimensions of inequality can be of interest: inequality of opportunity, for instance, between ethnic groups; and unequal treatment of those felt to be in all relevant respects identical—"horizontal" inequity—is often a major concern. Here, however, we focus on just two other dimensions of inequality not addressed by simply comparing household incomes at a single point in time—inequality over the life cycle and gender.

Inequality over the Life Cycle and Generational Accounting

Most measures of inequality are based on a snapshot for a single year. An individual's income in a given year, however, may not be representative of his or her lifetime income. For example, a worker may experience a decline in income during a spell of unemployment. In a similar vein, the taxes an individual pays in any given year, and benefits he or she receives, may vary greatly from year to year. During his or her prime working years, for example, an individual is likely to be paying higher taxes than when in retirement and drawing a pension. Much of what appears to be government redistributive policies is the collection of taxes from individuals during their prime working years that is offset by the payment of benefits in later years to the same individuals. In other words, on a lifetime basis, government redistribution may be much smaller than it appears to be.

[5] On the multidimensional nature of inequality and how to measure it, see Aaberge and Brandolini 2015.

©International Monetary Fund. Not for Redistribution

Longitudinal data covering the entire life cycle (or at least career-long income histories) are less common than yearly household surveys, so many fewer studies of inequality over the life cycle have been undertaken. What empirical evidence there is, however, shows that, in line with expectations, lifetime inequality is significantly lower than annual income inequality. Björklund (1993), for example, shows that dispersion in lifetime incomes is 35–40 percent lower than that of annual income in Sweden. Aaberge and Mogstad (2012) find that at age 60, annual income inequality is more than twice lifetime income inequality.

The lifetime income approach is especially relevant in the analysis of the distributive effects of pension systems, since their main objective is to redistribute an individual's income across her or his lifetime to avoid a sharp drop in consumption after retirement. If the relationship between benefits and contributions is actuarially fair, computing lifetime income washes away any redistributive effect that may be attributed to pension schemes.

However, pension systems, and public policies in general, may not be distributionally neutral when they transfer resources from the working-age population to older (or younger) cohorts. Fiscal policies may then provide differing levels of net benefits to the lifetime income of individuals belonging to different age cohorts. This is especially relevant in light of the challenges posed by age-related spending in many countries. Generational accounting is a methodology (based on the intertemporal budget constraint of the government) that aims to measure the impact of taxes and spending on representative members of different generations. The focus of this analysis is to highlight which generations bear the burden of government programs and which enjoy their benefits (Kotlikoff 2002). For example, Kashiwase and Rizza (2014) use a generational approach to assess the net benefits received from the pension systems of Italy, Japan, and the United States. They find, unsurprisingly, that in Italy and Japan the net lifetime benefits received by current retirees are much higher than those of current workers and future generations, reflecting the future effects of pension reforms introduced in recent decades.

Generational accounting studies have been undertaken mainly for advanced economies, and have their limitations; for instance, the point estimates of the net tax burden for different generations can be sensitive to specific assumptions.[6] Nevertheless, this approach can provide important insights into the intergenerational implications of fiscal policies.

Gender

Differences in the earnings of men and women remain striking. Despite similar educational levels in the advanced economies, women's wages and participation in the labor market remain lower than men's, while women still bear the burden of unpaid housework (OECD 2012). Gender inequality has an important macroeconomic dimension because raising female labor force participation rates could have significant and positive effects on economic growth (Elborgh-Woytek and others 2013).

The measurement of gender inequality has raised both theoretical and empirical issues (Ponthieux and Meurs 2015). Commonly used standard inequality measures are usually based on some concept of household per capita equivalent income or well-being. Household resources are pooled together, and then equivalence scales[7] are used to derive an average income indicator. The

---

[6] For a critical assessment of generational accounting, see Haveman 1994.

[7] An equivalence scale is a set of weights, one for each household member, that measures the additional income regarded as being necessary to achieve the same level of well-being as a one-member household. The use of equivalence scales recognizes that individuals living together enjoy economies of scale, and that different demographic groups may have different needs. There are several equivalence scales (Atkinson, Rainwater, and Smeeding 1995). Some commonly used are the "old" OECD equivalence scale (which gives a weight equal to 1 to the first household member, of 0.7 to each additional adult, and of 0.5 to each child), the OECD modified scale (which gives a value of 1 to the household head, of 0.5 to each additional adult, and of 0.3 to each child), and the square root scale (in this case, household income is divided by the square root of the household size).

©International Monetary Fund. Not for Redistribution

implicit assumption is that all the household members enjoy the same level of income. In recent decades this view of the household (based on the so-called unitary model) has been challenged. Empirical studies suggest that changes in personal income accruing to different household members (in particular, women) lead to changes in the allocation of household resources (Bourguignon and others 1993; Duflo 2003; Ward-Batts 2008). Theoretical contributions have proposed more sophisticated approaches that take into account income-sharing rules and appear to be more consistent with the data (Browning, Chiappori, and Weiss 2011).

Because of the multifaceted nature of gender inequality and data difficulties, however, few studies have been able to empirically measure gender disparities within the household in a comprehensive way. The empirical literature on gender inequality has focused instead on several outcome measures (such as labor force participation and compensation, underrepresentation in top jobs and career progression, overrepresentation in informal employment, pension income, wealth, time spent in unpaid work, and poverty risk). Taken together, these provide insights into the extent of gender economic inequality, its determinants, and policy options for reducing it.

The empirical literature suggests that gender—and motherhood—play a significant role in labor market outcomes. Having children has a significant impact on female education and employment decisions, with mothers' labor market participation being lower than men's during the prime childbearing years. However, social norms (such as early marriage) or discriminatory institutions and practices appear also to matter a great deal. For example, OECD 2012 shows that discriminatory attitudes and gender gaps in employment rates are strongly correlated. Gonzales and others (2015) find that legal restrictions (such as those on rights to inheritance and property) and impediments (for instance, to pursuing a profession or opening a bank account) are also strongly correlated with gaps in labor force participation in both advanced and developing countries.

Addressing gender equity thus requires responses on many fronts, including but by no means only fiscal. Reforming the regulatory framework to remove obstacles and discrimination can shape a favorable environment for women to exercise their full economic potential. Universal access to education and health, by fostering human capital formation for both girls and boys, can contribute to removing differences in skills and productivity and reduce wage gaps. Public spending for the provision of good-quality and affordable child care may promote mothers' return to paid employment after childbirth (Thévenon 2011). The appropriate design of income taxes can ensure that work disincentives for second earners are eased, and that work pays for all household members (Boskin and Sheshinski 1983; Apps and Rees 1999, 2007).

ORGANIZATION AND MAIN FINDINGS OF THIS BOOK

This book consists of six parts. Part I provides an overview of income inequality trends and discusses fiscal redistribution in advanced and developing countries. Part II investigates the link between personal and functional income distributions and discusses tax policy issues linked to the taxation of wealth. Part III explores the link between fiscal consolidation and inequality. Parts IV and V focus on tax and expenditure policies, respectively, and how these can be fashioned to address distributive objectives. Finally, Part VI comprises country studies addressing various aspects of the relationship between fiscal policy and income inequality.

Part I—Trends in Income Inequality and the Redistributive Role of Fiscal Policy

Chapter 2, by Benedict Clements, Vitor Gaspar, Sanjeev Gupta, and Tidiane Kinda, looks at the relevance of inequality for the work of the IMF and how economic developments have shaped this work. Two main trends have been important in this respect. First, long-term demographic

©International Monetary Fund. Not for Redistribution

and economic trends have resulted in an increase in developing countries' share in global output, which has contributed to a decline in inequality at the global level. Second, inequality has risen within many countries.

Redistributive issues are relevant for all three core activities of the IMF: support for macroeconomic adjustment, surveillance of member countries' economic policies, and technical assistance to build capacity. The authors provide a historic overview of the IMF's involvement in these issues, which began in the late 1980s and was influenced by policy design in IMF-supported adjustment programs. This experience led to greater attention to integrating social safety nets into program design and safeguarding access to basic public services in health and education. IMF-supported programs were successful in raising social spending (Clements, Gupta, and Nozaki 2013). The IMF's work in this area has deepened further since the global financial crisis, which has had significant adverse effects on growth and welfare, particularly in advanced economies. This renewed focus reflects the recognition that inequality has the potential to undermine macroeconomic stability, and calls for a careful examination of policy options and appropriate design of fiscal measures. The analytical effort has encompassed cross-country studies, country-level assessments of fiscal consolidation and inequality, and a variety of fiscal policy tools. The survey (and the examples of IMF-supported adjustment programs) presented by the authors points to an important lesson: growth and greater equality are not necessarily in conflict. With the right design, tax and spending policies can help achieve both stronger growth and greater equality of outcomes and opportunities.

The issue of the appropriate design of tax and spending policies in advanced economies is the focus of Chapter 3, by David Coady, Ruud de Mooij, and Baoping Shang. Although redistributive goals can also be achieved by other regulatory instruments (such as price controls), the primary tools for governments to reduce inequality are taxes and spending programs. Fiscal policy instruments can have an impact both in the short term (personal income taxes, for instance, immediately reduce household disposable income) and in the long term (current education spending, for instance, is likely to affect future earnings). In advanced economies, fiscal policies have indeed played a significant role in reducing market-income inequality. For example, they have, on average, reduced the Gini coefficients by about one-third (of which, approximately two-thirds is due to transfer programs and about a third is a result of progressive taxation). With regard to public expenditures, although the appropriate composition and design of spending programs varies by country, key considerations are to effectively reach households with the lowest income and avoid the creation of "poverty traps" with these programs. The latter issue can be addressed, in part, by designing benefits to minimize unfavorable behavioral effects of transfer programs (such as disincentives to work). The redistributive impact of taxation depends on the progressivity of personal income taxes, as well as the level and structure of taxes imposed on capital income and wealth. Indirect taxes generally tend to be regressive (at least when determined as a share of income, rather than expenditures, and assuming full pass-through to consumer prices) and are less suitable instruments than income taxes for pursuing redistributive objectives. Moreover, as stressed above, the distributional impact of public policies should be assessed by taking into account not only the impact of taxation but the impact of transfers and spending that it helps finance. Many advanced economies are facing a sluggish recovery from the global financial crisis. Taxes and social spending are already high. The authorities' key challenge is to ensure an appropriate design that achieves redistributive objectives at minimum cost to economic efficiency.

The design of redistributive policies in developing countries is analyzed in Chapter 4 by Francesca Bastagli, David Coady, and Sanjeev Gupta. The authors discuss the specific challenges faced by developing countries in pursuing both efficiency and equity objectives, emphasizing the importance of taking a comprehensive approach that considers the combined impacts of taxes and spending and of encompassing both design and administration issues. Fiscal redistribution is

©International Monetary Fund. Not for Redistribution

more limited in developing countries than in advanced economies because of the developing countries' lower tax and spending levels and because of the composition of revenue and outlays. On the tax side, revenue relies heavily on indirect taxation (which has limited redistributive impact). On the expenditure side, health and education account for a high share of social spending, but they affect the income distribution in the medium term; moreover, the share of social insurance spending (mainly pensions) that benefits higher-income groups is high. Enhancing redistribution therefore requires that tax ratios be increased while competing public spending needs are addressed. As to taxation, the policy strategy should aim to broaden both income and consumption tax bases and improve design to increase progressivity. Critically, tax compliance needs to be strengthened as a prerequisite, for instance, for effective taxation of personal incomes.[8] With regard to spending, priority should be given to designing well-targeted transfer programs while avoiding fiscally expensive universal price subsidy schemes. The expansion of in-kind spending could also help reduce income gaps, if that spending is focused on increasing low-income groups' access to quality services.

In Chapter 5, Ravi Kanbur discusses the developments that have occurred during the past three decades in the economics literature on poverty and income distribution. He organizes the discussion around three main issues: (1) progress in empirical evidence, (2) theoretical advances, and (3) policies. His main finding is that there has been significant continuity in the poverty and inequality domain notwithstanding significant advances in many respects. The chapter highlights the tremendous increase in the availability of empirical evidence (linked to the much greater availability of household surveys in developing countries), which has widened the range of feasible analysis and supported the efforts to document the changes in inequality observed in many countries during the past 30 years. Kanbur argues that the most prominent theoretical contributions have been in the analysis of poverty dynamics and risk, the surfacing of gender and intra-household inequality issues, and the spread of multidisciplinary approaches (which shifted attention away from focusing solely on the monetary value of consumption and income). For policy research, the chapter underlines four main topics in recent decades: conditional cash transfer programs, governance and institutions, the role of safety nets at times of acute macroeconomic crises, and the systemic importance of spillovers and global public goods. These were not entirely new topics, but nevertheless gained prominence because of the large macroeconomic shocks that hit both advanced and developing countries.

Part II—Alternative Measures of Inequality and Their Implications for Fiscal Policy

In Chapter 6, Maura Francese and Carlos Mulas-Granados study the relationship between functional and personal income distributions. The current debate on inequality is usually based on summary indicators of the distribution of personal income (such as the Gini index or the share appropriated by the top 10 percent or 1 percent). Historically, great attention was also paid to the allocation of income between the factors of production (labor and capital), and indeed the enormously influential work of Piketty (2014) is a very conscious return to this tradition. Classical economists considered the analysis of factor shares to be the principal problem of political economy; research on this topic flourished up to the 1960s. In the following decades it became a marginal issue, perhaps because of the lack of volatility in income shares. It has made a comeback in recent decades, reflecting the decline of the wage share experienced in Group of Seven countries since the 1970s, coincident with increasing inequality. The chapter uses both micro- and macroeconomic data to assess whether the decline in the labor share has been a key factor driving increases in inequality. The empirical analysis of micro data aims at recovering

[8] On how this might be done, see for instance IMF 2015.

©International Monetary Fund. Not for Redistribution

marginal effects of changes in factor shares and in the dispersion of labor income on the Gini index, using a large data set of household surveys covering both advanced and emerging economies. The results indicate that the most important determinant of rising income inequality has been the growing dispersion of wages rather than the declining share of wages. These findings are confirmed by regression analysis using macroeconomic data. They reflect the fact that labor earnings are the largest component of household income and the sizable growth of top salaries—the latter being a key driver of the rising dispersion of labor income. From a policy perspective, the results suggest that to avoid undesired distributional outcomes, attention should be paid to labor market outcomes.

Chapter 7, by Luc Eyraud, analyzes recent trends in wealth inequality and examines how wealth taxation can be used as a redistributive instrument. Although income inequality remains central to the debate on distribution, the emphasis on wealth inequality has been growing. Wealth is more unevenly distributed (both across[9] and within countries[10]) than income. High wealth concentration can have detrimental effects on growth through a variety of channels: besides fostering rent-seeking behavior, high wealth concentration can affect political, social, and economic stability. The chapter shows that historically taxes on wealth have been a major source of government revenue, but they now have a minor role, accounting for less than 2 percent of GDP, on average, for Organisation for Economic Co-operation and Development (OECD) countries. For this reason they may offer some margin to increase revenue and strengthen the progressivity of tax systems. Recurrent taxes on residential properties are widely seen as relatively growth friendly,[11] being marked by a base that is fairly immobile and hard to hide (and therefore fewer adverse incentive effects are generated). Designing these taxes to be progressive is also fairly simple (for example, by providing a basic tax-free allowance). Taxes can also be levied on property transactions and transfers. The former (for example, on the sale of real estate and financial instruments) can lead to inefficiencies since they may discourage mutually beneficial transactions. Taxes on wealth transfers (through gifts or inheritances) have not proved easy to implement on a reasonably broad basis because of difficulties both technical and political, not the least being the potentially high mobility of the wealthy. These taxes have been in decline and currently generate very little revenue in most countries. Recent developments in the exchange of tax information between countries, however, may alleviate some of the difficulties that have been experienced. Many look to wealth and wealth transfer taxes to play a more important role in the future, with the latter, for instance, potentially a key instrument to limit the intergenerational transmission of inequality.

Part III—Fiscal Consolidation and Income Inequality

In Chapter 8 Davide Furceri, João Tovar Jalles, and Prakash Loungani examine the link between budget consolidation and inequality in a sample of advanced economies. After discussing available methods for identifying consolidation episodes, the authors use regression analysis to estimate impulse response functions for alternative measures of inequality (Gini indices and income shares) and run several robustness checks. Their results indicate that fiscal adjustment tends to lead to an increase in income inequality in the short and medium terms, with this finding being robust to the use of alternative measures of fiscal consolidation and inequality. The evidence discussed in the chapter is not conclusive, however, on two issues: (1) whether tax-based or expenditure-based consolidations have different effects (most other studies have found expenditure-based adjustment more unequalizing); and (2) whether the relationship between

[9] North America and Europe account for two-thirds of total wealth.

[10] For instance, in advanced economies, the top 10 percent owns, on average, more than half of the wealth.

[11] See Acosta-Ormachea and Yoo 2012 and Arnold and others 2011 for empirical evidence on this issue.

©International Monetary Fund. Not for Redistribution

fiscal adjustment and inequality is symmetric. The authors' results suggest that the benefits of fiscal adjustment should be weighed against its distributional effects and underscore the need to design fiscal measures that protect the neediest. Finally, the authors highlight that the distributional impact of fiscal consolidation must be balanced against its potential longer-term benefits, since sustainable public finances and a lighter burden of interest payments may allow a reduction in distortionary taxation.

Stefania Fabrizio and Valentina Flamini provide an overview of recent evidence on the link between fiscal adjustment and inequality for both advanced and emerging economies in Chapter 9. They start from the consideration that fiscal contraction has an impact on distribution via both market and disposable income: it leads to a reduction in output and employment and therefore in earnings; it also changes the level and composition of taxes and spending. Cyclical conditions are also relevant: the effect of a fiscal contraction can be stronger in a downturn if fiscal multipliers are higher than when the economy is growing. In addition to magnitude and pace, the econometric studies reviewed in Chapter 9 indicate that the composition of consolidation packages also matters; adjustments based on spending cuts worsen inequality more than revenue-based ones. Reviewing recent adjustment experiences in Europe, the authors highlight that both expenditure- and revenue-based fiscal consolidations can be designed to mitigate adverse effects on inequality. This can be done by protecting the most progressive and efficient redistributive spending and increasing reliance on progressive revenue measures. In developing countries, where the size of the government sector is usually smaller than in advanced economies and fiscal policies less progressive, social safety nets should be strengthened to protect vulnerable households during fiscal adjustment. Some other lessons, while straightforward, are important. For example, replacing universal subsidies with targeted measures can help prevent an increase in inequality while helping reduce budget deficits.

Part IV—Tax Policy and Inequality

Chapter 10, by Ruud de Mooij, Thornton Matheson, and Roberto Schatan, focuses on tax spillovers arising from the current international tax architecture for multinational enterprises and the opportunities for tax avoidance that they create. These spillovers can matter for distribution both within countries and, more the focus here, across them, for they can be particularly important for developing countries, which are relatively more reliant on corporate income taxes and especially those from multinationals—and have fewer appealing alternative sources of revenue. Spillovers jeopardize the government's ability to raise sufficient resources to finance social programs and comprehensive redistributive policies (besides public spending for investment). Indeed, governments in developing countries themselves face the challenge of finding a balance between ensuring an attractive investment environment for multinationals and mobilizing adequate domestic resources. However, it is not just their own policies that matter, but also international tax rules set by others. Drawing on IMF (2014b), de Mooij, Matheson, and Schatan address three specific tax issues related to the international tax architecture that determine spillovers to developing countries. The first is territoriality versus worldwide taxation in more advanced economies. The authors document a shift during the past decades in advanced economies from worldwide toward territorial taxation (under which earnings from foreign subsidiaries are exempt in the residence country). Empirical evidence suggests that, as theory predicts, this shift has increased the intensity of tax competition among developing countries, pushing them toward lower corporate tax rates. The second set of issues are those around bilateral tax treaties. These treaties allocate taxing rights between the residence and source countries and can benefit investors to the extent that they eliminate double taxation and provide some certainty of tax treatment. Empirical evidence, however, is at best inconclusive as to the effect of treaties on investment. At the same time, tax treaties create a significant risk for developing countries (which

©International Monetary Fund. Not for Redistribution

are usually source countries) of a high cost in forgone government revenue. The chapter thus cautions developing countries against signing bilateral tax treaties too readily. Finally, the chapter explores ideas for a complete revision of the international rules for allocating taxable income of multinationals between different countries. In particular, instead of separating the accounts of a multinational group, accounts could be consolidated according to a harmonized rule. Subsequently, this consolidated tax base could be divided between countries through "formulary apportionment." Although such a system clearly eliminates a number of problems and spillovers associated with the current architecture, it would also create significant new challenges. And, not least, it is highly uncertain whether developing countries would see their tax bases expanded or reduced.

In Chapter 11, John Norregaard focuses on taxation of immovable property. Property taxes, especially on residential real estate, are, as noted above, widely regarded as an efficient and equitable means for raising revenue. Their potential, however, appears not to be yet fully exploited, in particular in emerging and developing countries. For them, the untapped revenue potential is estimated to be on the order of 0.5–1.0 percent of GDP over the next 5–10 years, while for many advanced economies that currently rely only modestly on these taxes, the potential is even higher, reaching 2 percent of GDP or more. After discussing the nature of property taxation in different countries, the chapter explores the economic rationale for its fuller use. Empirical evidence supports the theoretical claim that property taxation is more efficient and less distortive than most other conventional tax instruments, with recent studies confirming that it is more benign for growth. Property taxes also play a key role in intergovernmental fiscal design: given that they are borne mainly by residents, and that property values likely reflect the value of local services and amenities, local property taxes are an attractive source of revenue for local government since they are associated with lower spillover effects and increased accountability of local administrations. The chapter finally examines the obstacles that policymakers face in introducing and reforming property taxation. Political economy considerations, as well as implementation issues, play an important role. Transparency and salience of the tax, which economists regard as desirable properties, make it politically unpopular. As to implementation, successful reforms require training and careful planning of improvements to administrative infrastructure, which entails up-front investment.

Chapter 12 addresses the issues of the targeting and design of indirect taxation. In particular, Michael Keen contributes to the debate on the VAT and whether reduced tax rates on commodities that absorb a large part of poor households' budgets (such as food) are a suitable way to improve income distribution. The theoretical and empirical literature agrees that most of the dollar benefits of reduced rates are generally appropriated by better-off households. Therefore, the amount of redistribution that can be achieved by differentiating tax rates is limited, and other instruments can be deployed by governments to address distributional concerns more effectively. Thus, the issue becomes whether these better instruments to support poor households are available. Such instruments are likely to be feasible in advanced economies, in which implementation issues are less relevant and sophisticated social programs more common. For emerging and developing countries deployment of these instruments is less straightforward, and can require evaluating whether spending programs (either cash transfers or in-kind benefits such as health and education) that are not precisely targeted perform better than differentiated tax rates. Assessing the distributional case for reduced VAT rates requires understanding the distributional impact of the public spending that a higher rate could enable. The chapter also points out, however, that even when tax-spending reforms do seem superior to differentiated VAT rates, political economy considerations may still restrain governments from acting. These obstacles may reflect a suspicion that spending programs promised by governments will not always be forthcoming or that more progressive ways to finance the increase in public spending may be available. Or it may be that

©International Monetary Fund. Not for Redistribution

powerful groups understand perfectly well how raising or eliminating reduced VAT rates would act to their disadvantage.

In Chapter 13, Ian Parry explores the distributive aspects of carbon taxation, the starting point being that carbon pricing (to reduce harmful carbon emissions) needs to be front and center in policies to limit climate change. Even though carbon pricing is becoming more widespread, it remains far from the levels needed. Concerns about the impact on poor households of raising carbon taxes by a significant margin is one of the issues that complicate the political discussion around climate policy, and risks holding back effective carbon pricing. The chapter argues, however, that distributional concerns should not delay or limit the use of carbon taxes, for several reasons. First, carbon taxes are less regressive than is generally thought; second, leakages to higher-income groups from inefficiently low energy prices are sizable (they receive about 90 percent of total benefits); and third, instruments are available to compensate low-income households for the costs stemming from high energy prices. Advanced economies have numerous opportunities for such compensation by using carbon tax revenues to finance targeted tax cuts and benefit increases—though specific needs and design clearly need to be examined on a country-by-country basis. A strong case for raising carbon taxes can also be made for developing countries, including to address local pollution damage. With respect to distributional concerns, carbon taxes might actually be less regressive in developing countries than in advanced economies, since access to power grids and motor vehicle ownership is skewed toward richer households in developing countries; and given that large hard-to-tax sectors constrain the use of other taxes (such as the personal income tax), energy taxes can serve the useful purpose of broadening the tax base. Targeted compensation of those low-income households that are adversely affected is more challenging in developing countries, given the more limited spending instruments available. Nevertheless, the additional revenue from carbon taxation could allow expansion of health, education, social housing, and other programs. In sum, distributional concerns are certainly potentially important for both fairness and the politics of reform, but these issues are generally manageable and not a persuasive reason for delaying more effective carbon pricing.

Part V—Expenditure Policy and Inequality

Energy subsidies and their reform are addressed by David Coady, Valentina Flamini, and Louis Sears in Chapter 14. Building on evidence from country studies, the authors assess the magnitude of energy subsidies and estimate the welfare impact of their reform. This is an important topic for many developing countries, in which domestic consumer prices are under the government's control and do not reflect the true cost of energy. Governments see controlling prices as a viable solution to protect domestic consumers from high and volatile oil prices. The chapter shows, however, that energy subsidies are generally a very inefficient instrument for protecting poor households: on average, the richest 20 percent of the population captures more than six times as much of the benefit of fuel subsidies as does the poorest 20 percent. Withdrawing benefits would, nevertheless, result in significant welfare losses, including for disadvantaged households: estimates indicate that increasing fuel prices by $0.25 per liter would decrease household real incomes, on average, by 5.5 percent, with the impact ranging from 3.5 percent in South and Central America to 7.0 percent in the Middle East. Thus, well-targeted compensating measures are likely to be essential for making energy subsidy reform palatable to policymakers and successful in practice. Ideally, well-targeted cash transfers should be used to compensate poor households, as they have been in several successful reform episodes. Conditional cash transfers have also gained prominence in emerging and developing countries because they also help address the causes of persistent poverty (by, for example, linking eligibility for cash transfers to participation in health and education programs). When capacity constraints prevent the use of targeted cash transfers,

©International Monetary Fund. Not for Redistribution

governments can consider instead the expansion of other high-priority spending that benefits the poor, such as school meals or subsidized education, health, and mass transit.

In Chapter 15, Benedict Clements, Csaba Feher, and Sanjeev Gupta review the functioning of pension systems, with a view to highlighting the equity considerations most relevant for their design and reform. The starting point of the analysis is the recognition that pensions are a key instrument of social policy, preventing the large drop in income that would otherwise be associated with retirement. In assessing the fairness of pension systems, it is important to distinguish between objectives for horizontal equity and those for vertical equity.[12] In many cases, there will be a trade-off between these objectives. To achieve vertical equity, for instance, significant redistribution toward the poor may be required, but this course may clash with ensuring that the link between contributions and benefits is similar for all pension system participants (horizontal equity). Intergenerational equity is also an important consideration, and involves judgments about how the burden of financing the pension system—and the benefits it pays out—should be spread across successive generations. Despite the difficulties in determining a unique criterion for an equitable pension system, some clear principles emerge from international experience. The first principle is that there are a number of reforms that are clearly equity enhancing, including expanding coverage, which is the most important consideration for achieving greater vertical equity. Expansion of coverage could be fostered by removing regulatory barriers to participation and improving administrative capacity and compliance. In addition, countries could achieve more horizontal equity in their pension systems by providing equal treatment across sectors, industries, and type of contract. The second principle is that most design features and reform options will, nevertheless, require trade-offs between different equity objectives. The third principle is that pension reform occurs under political constraints, which can hinder the equal treatment of certain social groups. The fourth principle is that the consequences of different pension reform options need to be analyzed—and the goals of pension reform communicated—to achieve broad and lasting public support. The final principle is that complementary measures in areas outside pension policy are necessary to make pension reforms effective. These measures include strengthening administrative capacity to manage increases in the number of contributors, as well as labor reforms to ensure employment opportunities for older workers.

In Chapter 16, Nora Lustig provides an empirical analysis for a sample of emerging and developing countries of the redistributive impact of public spending on education and health.[13] These two items combined account for a sizable share of public spending in the countries included in the sample: education outlays range from 2.6 to 8.3 percent of GDP, and health expenditure from 0.9 to 5.2 percent. Examining their redistributive impact requires attaching a value to in-kind services provided to citizens (free—or almost free—of charge). The common methodology applied to all countries in the sample uses average cost of provision as a proxy for the value of in-kind services. Gini indices are then computed for three income definitions: (1) market income; (2) postfiscal income (market income less taxes and social contributions, plus government transfers—such as cash transfers —and minus indirect taxes); and (3) final income (postfiscal income plus the transfer value of free or subsidized public education and health). The results indicate that in more unequal countries government policies tend to redistribute more (a somewhat different conclusion from the previous literature). Education and health spending combined lower inequality by a significant amount: their contribution to the overall decline in

[12] Horizontal equity requires that similar conditions (in the case of pension systems, similar contribution histories) be associated with similar results (that is, similar pension benefits). Vertical equity requires considering individuals' needs when granting benefits.

[13] The countries analyzed are those included in the Commitment to Equity project: Armenia, Bolivia, Brazil, Chile, Colombia, El Salvador, Ethiopia, Guatemala, Indonesia, Mexico, Peru, South Africa, and Uruguay.

©International Monetary Fund. Not for Redistribution

inequality (going from market to final income) is, on average, 69 percent. Education spending is pro-poor (meaning that per capita spending is higher for poor individuals) in 9 out of 13 countries, while health expenditure is pro-poor in 5 out of 13 countries. Evidence also suggests that progressivity and pro-poorness of health and education spending have increased over time. However, despite progress and the equalizing role played by education and health, less than universal access and low quality remain a concern in developing countries.

Chapter 17, by Caroline-Antonia Hummel and Mike Seiferling, reviews the literature on fiscal federalism and inequality and presents an empirical analysis of the link between decentralization and within-country inequality. The literature on fiscal federalism has addressed this question since seminal contributions published in the 1950s. The so-called first-generation theories of fiscal federalism argued that local governments should not engage in redistributive policies. "Voting with your feet" behavior would lead to unsustainable and self-defeating patterns, with rich households migrating to jurisdictions characterized by minimal levels of taxation and transfers, and poor households concentrating in areas with generous redistributive schemes. As a result, a system of decentralized redistribution would lead to lower levels of redistribution than socially desirable. The second generation of fiscal federalism studies, however, suggested that comprehensive decentralization could be more effective in reducing regional inequality than centrally mandated redistribution over the longer term. The reason is that local governments of poorer regions could take advantage of less generous welfare provisions and lower taxes to attract investment and increase growth. In this sense, decentralization could lead to a reduction in income disparities across regions, which would translate into lower inequality at the national level. Hummel and Seiferling use data for a globally representative sample of countries over a 30-year time span to test the potential links between within-country income inequality and fiscal decentralization. The authors' empirical analysis lends support to second-generation fiscal federalism theories. More specifically, their econometric results suggest that decentralization is associated with lower inequality, provided the following conditions are met: (1) the size of the government is sufficiently large; (2) decentralization of spending is comprehensive, including redistributive spending items (social expenditure, health, and education); (3) decentralization on the expenditure side is accompanied by decentralization on the revenue side (so that local governments rely primarily on their own resources); and (4) in assigning revenue sources to subnational governments, preference is given to revenue categories without strong redistributive implications.

Part VI—Country Case Studies

In Chapter 18, Ruud de Mooij discusses the equity-efficiency trade-off in the design of the tax-benefit system in the Netherlands. The author starts by reviewing key policy insights from optimal tax theory to identify the factors that determine the equity-efficiency possibility frontier. The shape of the optimal marginal tax schedule is shown to depend on a limited number of factors, such as social preference for redistribution, the concavity of utility in income, the elasticity of labor supply, and population densities along the income distribution. The optimal marginal tax schedule typically follows a U-shaped pattern, that is, high at the bottom and top of the income distribution and low in the middle. While yielding powerful messages for tax-benefit design, however, the optimal tax framework is probably oversimplified; for example, it does not allow for the heterogeneity in elasticities that characterizes the Dutch labor market. To account for this in greater detail, the chapter explores reform options in the Dutch tax-benefit system using a detailed applied general equilibrium model. The model is calibrated for the Netherlands to reflect available empirical evidence concerning the most relevant behavioral responses (such as labor supply decisions of a heterogeneous set of households). Indeed, it accounts for household heterogeneity along several dimensions, such as skills, family composition, social benefit entitlements,

©International Monetary Fund. Not for Redistribution

and age. Moreover, it allows for a rich set of labor market choices, including hours worked, voluntary nonparticipation within couples, and search behavior by the unemployed. A union bargaining model and search frictions imply that wages do not clear the labor market, which renders the extensive margin of employment more responsive through effects on reservation wages. Despite these modifications, compared with standard optimal income tax models (that is, by varying elasticities along the income distribution), results on the efficiency implications of tax reforms are largely consistent with insights from these models, yet also refine them. For instance, they show that selective in-work tax credits for low-wage and secondary earners could increase employment. But they also show that the precise design of the phase-out range of these credits is critical for employment effects. Flat-tax reforms (which lower the marginal tax rates for top incomes) tend to worsen the equity-efficiency trade-off, that is, they either reduce employment for the same amount of redistribution or increase inequality. Replacing means-tested income transfers with a basic income benefit would reduce unemployment (because it eliminates means testing, and so reduces the marginal tax burden at the bottom), but has very large adverse effects on labor supply in the densely populated middle-income groups who would face a much higher marginal tax rate.

Chapter 19, by Serhan Cevik and Carolina Correa-Caro, focuses on China, which, over the past few decades, has experienced a substantial increase in inequality (as measured by the pretax income Gini index). This trend reflects the sustained dynamics of income accruing to the richest quintile of the population, which has been significantly higher than that registered by other income groups. The aim of the chapter is to identify the determinants of income inequality, with a focus on the distributional effects of fiscal policy, using regression analysis. The authors recognize the limitations stemming from a small sample size and challenging technical issues, and devise strategies to alleviate these concerns. Their results support the hypothesis of an inverted U-shaped relationship between growth and income inequality in China (a "Kuznets curve"), which is in line with the observed pattern for the Gini index over the recent decades of rapid growth. Government spending in China appears to be associated with worsening income inequality. This finding may reflect the low public expenditure level observed in China and its composition. Spending is mainly absorbed by infrastructure investments and public administration outlays. Taxation appears to improve the distribution of household income, even if the tax-to-GDP ratio is still significantly far from levels observed in OECD countries, and it is characterized by a low degree of progressivity (as a result of the high share of revenue collected through indirect taxes). The authors argue that fiscal policy could be redesigned to have a greater redistributive effect, especially in the long term.

In Chapter 20, Chadi Abdallah, David Coady, Sanjeev Gupta, and Emine Hanedar present an empirical investigation of options for fiscal reform in India, demonstrating the potential for achieving efficient and growth-friendly fiscal consolidation while simultaneously alleviating poverty and reducing inequality. The need for consolidation in India is widely recognized. After countercyclical policies implemented in response to the economic and financial crisis, fiscal adjustment has been achieved mainly by cutting investment, without addressing structural issues that limit the space for growth-enhancing spending and other priority measures. Against this background the authors use household survey data to assess the impact of reforms on household income and its distribution. On the tax side, the chapter simulates the effects of increasing "sin taxes," that is, consumption taxes on items generating negative environmental and health externalities (fuel products, alcohol, and tobacco). On the spending side, the exercise evaluates the consequences of increasing spending on social programs.[14] The results show that increasing the

[14]The exercise considers, in particular, raising spending for the Public Distribution System and the Mahatma Gandhi National Rural Employment Guarantee Act programs.

©International Monetary Fund. Not for Redistribution

sin taxes has a regressive impact: it hurts all households, but the impact (as a share of total household income) is higher for low-income groups than for high-income groups. However, reallocating part of the proceeds from tax increases to the financing of higher social spending can offset the impact of higher taxes. Under plausible simulation parameters, the chapter shows that the reform can transfer sufficient resources to make the net incidence of taxes and transfers progressive. The overall progressivity of the reform can be further enhanced by improving the targeting of the social assistance programs. Under the current setup, leakages of benefits to higher-income households are substantial; removing (or reducing) these inefficiencies would generate enough resources to make lower-income households net gainers from the reform.

Chapter 21, by Maximilien Queyranne, Dalia Hakura, and Cameron McLoughlin, discusses the challenges of designing fiscal consolidation packages in the Republic of Congo, where income inequality is high, poverty is widespread, and the room for redistributive fiscal policies, already narrow, is expected to diminish drastically in the coming years as oil reserves shrink. While public revenue and spending appear higher in Congo than in most low-income countries, the underlying structure and composition of the budget is not geared toward the reduction of inequality and poverty. High revenue reflects mainly oil-related receipts, while tax proceeds as a ratio of GDP are lower than the average for sub-Saharan African countries. Moreover, taxation is tilted toward consumption taxes, and recent reforms of the personal income tax have not improved its progressivity. As to spending, fuel subsidies absorb a large amount of resources, exceeding overall outlays for education, health, and social protection. Furthermore, as Chapter 14 shows is generally the case, these subsidies lead to overconsumption and are poorly targeted. To improve the situation, education spending has been increased in recent years. The government has also committed to move toward universal coverage in the health sector and has started implementing a conditional cash transfer program. Going forward, financing an expansion of redistributive programs will be challenging, given the expected contraction of oil-related revenues. To protect the poor from the sizable effects of these structural changes, efforts will have to be concentrated on strengthening revenue mobilization through more progressive taxation (for example, through a better-functioning personal income tax, well-designed property taxes, and limited reduced VAT rates and exemptions) and focusing on priority spending (avoiding crude across-the-board cuts). Cutting fuel subsidies gradually but deeply, and improving the efficiency of capital spending, could create fiscal space to scale up social spending.

In Chapter 22, João Pedro Azevedo, Antonio C. David, and Fabiano Rodrigues Bastos examine the links between subnational fiscal policies and inequality dynamics in Brazil, asking whether fiscal consolidation at the state level has contributed to the reduction in inequality. In the second half of the 1990s, the Brazilian fiscal federalism architecture underwent a structural break. A debt-restructuring agreement between the federal government and the states introduced tight constraints, and as a consequence public finances at the local and state level quickly improved. The literature on the effects of fiscal consolidation on income inequality, mostly based on data for OECD countries, has generally found that budget retrenchment is associated with a deterioration in distributional outcomes. To see if this is also the case in Brazil, the authors explore the empirical relationship between the Gini index for gross posttransfer income at the state level and a set of explanatory variables that include changes in the cyclically adjusted primary balance (as a share of GDP). The results suggest that, contrary to previous findings, a tighter fiscal stance in Brazilian states is not associated with an increase in inequality. Although the authors do not attempt to establish the precise mechanisms linking fiscal policy and inequality, their results are likely to reflect distinct structural characteristics of the Brazilian states compared with OECD economies: higher inequality levels, less reliance on progressive taxation, an absence of extensive social safety nets, and higher inefficiencies in the provision of public services. For this reason, they caution against mechanically extending results available for advanced economies to emerging and developing countries.

©International Monetary Fund. Not for Redistribution

REFERENCES

Aaberge, R., and A. Brandolini. 2015. "Multidimensional Poverty and Inequality." In *Handbook of Income Distribution*, Vol. 2, edited by A. B. Atkinson, and F. Bourguignon, 141–216. Amsterdam: Elsevier.

Aaberge, R., and M. Mogstad. 2012. "Inequality in Current and Lifetime Income." Statistics Norway Research Department Discussion Paper No. 726, Statistics Norway, Oslo.

Acosta-Ormachea, S., and J. Yoo. 2012. "Tax Composition and Economic Growth." IMF Working Paper No. 12/257, International Monetary Fund, Washington.

Apps, P. F., and R. Rees. 1999. "Individual versus Joint Taxation in Models with Household Production." *Journal of Political Economy* 107 (2): 393–403.

———. 2007. "The Taxation of Couples." IZA Discussion Paper No. 2910, Institute for the Study of Labor, Bonn.

Arnold, J., B. Brys, C. Heady, Å. Johansson, C. Schwellnus, and L. Vartia. 2011. "Tax Policy for Economic Recovery and Growth." *Economic Journal* 121 (550): 59–80.

Atkinson, A. B. 2015. *Inequality: What Can Be Done?* Cambridge, Massachusetts: Harvard University Press.

———, and F. Bourguignon, eds. 2015. *Handbook of Income Distribution*, vol. 2. Amsterdam: Elsevier.

Atkinson, A. B., L. Rainwater, and T. M. Smeeding. 1995. "Income Distribution in OECD Countries." OECD Social Policy Studies No. 18, Organisation for Economic Co-operation and Development, Paris.

Benedek, D., R. de Mooij, M. Keen, and P. Wingender. Forthcoming. "Estimating VAT Pass Through." IMF Working Paper, International Monetary Fund, Washington.

Björklund, A. 1993. "A Comparison between Actual Distributions of Annual and Lifetime Income: Sweden 1951–89." *Review of Income and Wealth* 39 (4): 377–86.

Boadway, R., and M. Keen. 2000. "Redistribution." In *Handbook of Income Distribution*, Vol. I, edited by A. B. Atkinson and F. Bourguignon, 677–789. Amsterdam: Elsevier.

Boskin, M. J., and E. Sheshinski. 1983. "Optimal Tax Treatment of the Family: Married Couples." *Journal of Public Economics* 20 (3): 281–97.

Bourguignon, F. 2015. *The Globalization of Inequality.* Princeton, New Jersey: Princeton University Press.

———, M. Browning, P. A. Chiappori, and V. Lechene. 1993. "Intra Household Allocation of Consumption: A Model and Some Evidence from French Data." *Annales d'Economie et de Statistique*, 29.

Browning, M., P. A. Chiappori, and Y. Weiss. 2011. *Family Economics*. Cambridge, U.K.: Cambridge University Press.

Clements, B., S. Gupta, and M. Nozaki. 2013. "What Happens to Social Spending in IMF-Supported Programs?" *Applied Economics* 45 (28): 4022–33.

Duflo, E. 2003. "Grandmothers and Granddaughter: Old-Age Pensions and Intrahousehold Allocation in South Africa." *World Bank Economic Review* 17 (1): 1–25.

Easterly, W. 2007. "Inequality Does Cause Underdevelopment: Insights from a New Instrument." *Journal of Development Economics* 84 (2): 755–76.

Elborgh-Woytek, K., M. Newiak, K. Kochhar, S. Fabrizio, K. Kpodar, P. Wingender, B. Clements, and G. Schwartz. 2013. "Women, Work, and the Economy: Macroeconomic Gains from Gender Equity." IMF Staff Discussion Note No. 13/10, International Monetary Fund, Washington.

Gonzales, C., S. Jain-Chandra, K. Kochhar, and M. Newiak. 2015. "Fair Play: More Equal Laws Boost Female Labor Force Participation." IMF Staff Discussion Note No. 15/02, International Monetary Fund, Washington.

Gravelle, J. 2011. "Corporate Tax Incidence: A Review of Empirical Analysis and Estimates." Congressional Budget Office Working Paper 2011–01, Washington.

Haveman, R. 1994. "Should Generational Accounts Replace Public Budgets and Deficits?" *Journal of Economic Perspectives* 8 (1): 95–111.

International Monetary Fund (IMF). 2014a. "Fiscal Policy and Income Inequality." IMF Policy Paper, Washington.

———. 2014b. "Spillovers in International Taxation." IMF Policy Paper, Washington.

———. 2015. "Current Challenges in Revenue Mobilization: Improving Compliance." IMF Policy Paper, Washington.

Kashiwase, K., and P. Rizza. 2014. "Who Will Pay? The Dynamics of Pension Reform and Intergenerational Equity." In *Equitable and Sustainable Pensions. Challenges and Experience*, edited by B. Clements, F. Eich, and S. Gupta. Washington: International Monetary Fund.

Kotlikoff, L. J. 2002. "Generational Policy." In *Handbook of Public Economics*, Vol. IV, edited by A. J. Auerbach and M. Feldstein, 1873–932. Amsterdam: Elsevier.

———, and L. Summers. 1987. "Tax Incidence." In *Handbook of Public Economics*, Vol. II, edited by A. J. Auerbach and M. Feldstein, 1043–92. Amsterdam: Elsevier.

©International Monetary Fund. Not for Redistribution

Kumhof, M., and R. Rancière. 2011. "Inequality, Leverage and Crises." IMF Working Paper No. 10/268, International Monetary Fund, Washington.

Organisation for Economic Co-operation and Development (OECD). 2012. "Closing the Gender Gap: Act Now." OECD Publishing, Paris. http://dx.doi.org/10.1787/9789264179370-en.

Ostry, J., A. Berg, and C. Tsangarides. 2014. "Redistribution, Inequality, and Growth." IMF Staff Discussion Note, International Monetary Fund, Washington.

Piketty, T. 2014. *Capital in the Twenty-First Century.* Cambridge, Massachusetts: Harvard University Press.

Ponthiueux, S., and D. Meurs. 2015. "Gender Inequality." In *Handbook of Income Distribution*, Vol. 2, edited by A. B. Atkinson and F. Bourguignon, 981–1146. Amsterdam: Elsevier.

Rajan, R. 2010. *Fault Lines*. Princeton, New Jersey: Princeton University Press.

Rothstein, J. 2010. "Is the EITC as Good as an NIT? Conditional Cash Transfers and Tax Incidence." *American Economic Journal: Economic Policy* 2 (1): 177–208.

Tanzi, V., and K. Chu, eds. 1998. *Income Distribution and High-Quality Growth.* Cambridge, Massachusetts: MIT Press.

———, and S. Gupta. 1999. *Economic Policy and Equity.* Washington: International Monetary Fund.

Thévenon, O. 2011. "Family Policies in OECD Countries: A Comparative Analysis." *Population and Development Review* 37 (1): 57–87.

Whalley, J. 1984. "Regression or Progression: The Taxing Question of Tax Incidence." *Canadian Journal of Economics* 17 (4): 654–82.

Ward-Batts, J. 2008. "Out of the Wallet and into the Purse—Using Microdata to Test Income Pooling." *Journal of Human Resources* 43 (2): 325–51.

Woo, J., E. Bova, T. Kinda, and S. Zhang. 2013. "Distributional Consequences of Fiscal Consolidation and the Role of Fiscal Policy: What Do the Data Say?" IMF Working Paper No. 13/195, International Monetary Fund, Washington.

©International Monetary Fund. Not for Redistribution