



## IMF POLICY PAPER

### FISCAL POLICY AND INCOME INEQUALITY

January 23, 2014

IMF staff regularly produces papers proposing new IMF policies, exploring options for reform, or reviewing existing IMF policies and operations. The following document(s) have been released and are included in this package:

- The **Staff Report** on Fiscal Policy and Income Inequality, prepared by IMF staff and completed on January 22, 2014 to brief the Executive Board on February 7, 2014.

The Executive Directors met in an informal session, and no decisions were taken at this meeting.

The policy considerations in this paper should be attributed to IMF staff and not to the IMF or its Executive Board. The analysis was prepared by the staff of the Fiscal Affairs Department and has benefited from comments and suggestions by staff from other IMF departments, as well as by Executive Directors following their discussion of the report on February 7, 2014.

The policy of publication of staff reports and other documents allows for the deletion of market-sensitive information.

Electronic copies of IMF Policy Papers  
are available to the public from  
<http://www.imf.org/external/pp/ppindex.aspx>

**International Monetary Fund**  
**Washington, D.C.**



## FISCAL POLICY AND INCOME INEQUALITY

January 22, 2014

### EXECUTIVE SUMMARY

**Fiscal policy is the primary tool for governments to affect income distribution.**

Rising income inequality in advanced and developing economies has coincided with growing public support for income redistribution. This comes at a time when fiscal restraint is an important priority in many advanced and developing economies. In the context of the Fund's mandate to promote growth and stability, this paper describes: (i) recent trends in the inequality of income, wealth, and opportunity in advanced and developing economies; (ii) country experience with different fiscal instruments for redistribution; (iii) options for the reform of expenditure and tax policies to help achieve distributive objectives in an efficient manner that is consistent with fiscal sustainability; and (iv) recent evidence on how fiscal policy measures can be designed to mitigate the impact of fiscal consolidation on inequality. This paper does not advocate any particular redistributive goal or policy instrument for fiscal redistribution.

**Both tax and expenditure policies need to be carefully designed to balance distributional and efficiency objectives, including during fiscal consolidation.** The appropriate mix of instruments will depend on administrative capacity, as well as on society's preferences for redistribution, the role envisaged for the state, and political economy considerations. Options for redistributive policies that help minimize efficiency costs, in terms of their effects on incentives to work and save, are the following:

- In advanced economies: (i) using means-testing, with a gradual phasing out of benefits as incomes rise to avoid adverse effects on employment; (ii) raising retirement ages in pension systems, with adequate provisions for the poor whose life expectancy could be shorter; (iii) improving the access of lower-income groups to higher education and maintaining access to health services; (iv) implementing progressive personal income tax (PIT) rate structures; and (v) reducing regressive tax exemptions.
- In developing economies: (i) consolidating social assistance programs and improving targeting; (ii) introducing and expanding conditional cash transfer programs as administrative capacity improves; (iii) expanding noncontributory means-tested social pensions; (iv) improving access of low-income families to education and health services; and (v) expanding coverage of the PIT.

Innovative approaches, such as the greater use of taxes on property and energy (such as carbon taxes) could also be considered in both advanced and developing economies.

Approved By  
**Sanjeev Gupta**

Prepared by staff from Fiscal Affairs Department supervised by Sanjeev Gupta and Michael Keen, and comprising Benedict Clements, Victoria Perry, David Coady, Ruud De Mooij, Stefania Fabrizio, Baoping Shang, Allan Dizioli, Luc Eyraud, Csaba Feher, Valentina Flamini, Alvar Kangur, Javier Kapsoli, Carlos Mulas-Granados, Peter Mullins, Philippe Wingender, Dora Benedek, Ryan Espiritu, and Louis Sears. Production assistance was provided by Pierre Jean Albert, Jeffrey Pichocki, and Mileva Radisavljević.

## CONTENTS

|   |           |
|---|-----------|
| <b>INTRODUCTION</b>   | <b>4</b>  |
| <b>TRENDS IN INEQUALITY</b>   | <b>7</b>  |
| A. Inequality of Income   | 7         |
| B. Inequality of Wealth   | 11        |
| C. Lifetime Inequality  | 13        |
| D. Inequality of Opportunity  | 13        |
| <b>FISCAL REDISTRIBUTION</b>  | <b>14</b> |
| A. Advanced Economies   | 15        |
| B. Developing Economies   | 18        |
| <b>DESIGN OF EFFICIENT REDISTRIBUTIVE FISCAL POLICY</b>             | <b>21</b> |
| A. Conceptual Framework   | 21        |
| B. Social Spending  | 25        |
| C. Tax Design   | 36        |
| D. Summary  | 42        |
| <b>FISCAL CONSOLIDATION AND INEQUALITY</b>                          | <b>43</b> |
| A. Advanced Economies   | 44        |
| B. Developing Economies   | 48        |
| Appendix I. Who Benefits from Tax Incentives for Charitable Giving? | 50        |
| <b>BOXES</b>  |           |
| 1. Efficiency and Fiscal Redistribution                             | 6         |
| 2. Rising Public Support for Redistribution                         | 9         |
| 3. Redistributive Fiscal Policy: Evidence from Regression Analysis  | 15        |
| 4. Fiscal Policy and Income Inequality in Latin America             | 19        |
| 5. What is the Shape of the Optimal Income Tax Schedule?            | 23        |

|   |    |
|---|----|
| 6. In-Work Benefits and Credits _____       | 25 |
| 7. Conditional Cash Transfer Programs _____ | 32 |

**FIGURES**

|  |    |
|--|----|
| 1. Trends in Disposable Income Inequality, 1980–2010 _____   | 8  |
| 2. Gross Income Share of Top One-Percent in Selected Advanced and<br>Developing Economies, 1925–2012 _____             | 10 |
| 3. Poverty Rates in Developing Economies, 1980–2010 _____  | 11 |
| 4. Inequality of Wealth and Incomes in Selected Economies, early-2000s _____   | 12 |
| 5. The Great Gatsby Curve: Income Inequality and Economic Mobility, mid-1980s _____                                    | 14 |
| 6. Redistributive Impact of Fiscal Policy in Advanced Economies, mid-2000s _____                                       | 16 |
| 7. Diminishing Fiscal Redistribution, 1985–2005 _____  | 17 |
| 8. Tax Revenues and Social Spending in Advanced and Developing Economies _____   | 19 |
| 9. Social Protection Coverage and Incidence in Developing Economies, late-2000s _____                                  | 20 |
| 10. Benefit Incidence of Education and Health Public Spending _____  | 21 |
| 11. Means-tested and Non-means-tested Family Benefits, 2010 _____  | 28 |
| 12. Top PIT Rates, 1980–2012 _____   | 37 |
| 13. Redistributive Effect of Fiscal Adjustments, 2007–2012 _____   | 45 |
| 14. Cumulative Change in Households Disposable Income due to Simulated Fiscal<br>Consolidation Measures, 2008–12 _____ | 47 |
| 15. Simulated Impact of Fiscal Consolidation (FC) Measures on Gini Index, 2012 _____                                   | 47 |
| 16. Unemployment Rates and Gini Coefficients During Large Fiscal Adjustments in<br>Developing Economies _____          | 48 |

**TABLES**

|  |    |
|--|----|
| 1. Summary: Fiscal Reform Options for Efficient Redistribution in Advanced and<br>Developing Economies _____ | 43 |
|--|----|

**APPENDICES**

|  |    |
|--|----|
| I. Who Benefits from Tax Incentives for Charitable Giving? _____ | 50 |
| II. Recent Fiscal Consolidations and Income Inequality _____     | 51 |

**APPENDIX FIGURES**

|  |    |
|--|----|
| 1. Aggregate Effect and Composition of Simulated Fiscal Consolidation Measures, 2008–12 _____  | 51 |
| 2. Change in Household Disposable Income by Type of Measure and Income Group,<br>2007–12 _____ | 53 |

|                         |    |
|-------------------------|----|
| <b>REFERENCES</b> _____ | 54 |
|-------------------------|----|

## INTRODUCTION

**1. Income inequality has increased in both advanced and developing economies in recent decades.**<sup>1</sup> Increasing inequality has been attributed to a range of factors, including the globalization and liberalization of factor and product markets; skill-biased technological change; increases in labor force participation by low-skilled workers; declining top marginal income tax rates; increasing bargaining power of high earners; and the growing share of high-income couples and single-parent households (OECD, 2008; Alvaredo and others, 2013; Hoeller, Joumard, and Koske, 2014). Many of these developments have had beneficial effects on growth and poverty reduction both nationally and globally (Chen and Ravallion, 2010; Milanovic, 2012).

**2. There is growing evidence that high income inequality can be detrimental to achieving macroeconomic stability and growth.** Recent empirical work finds that high levels of inequality are harmful for the pace and sustainability of growth (Ostry, Berg, and Tsangarides, forthcoming). Others have argued that rising inequality may have been an important contributing factor to the global financial crisis.<sup>2</sup> Moreover, evidence from public surveys in various countries indicates that widening income inequality has been accompanied by growing public demand for income redistribution, especially in countries most strongly affected by the crisis. This comes at a time when high public debt ratios in the advanced economies, and emerging vulnerabilities in the developing economies, have made fiscal restraint an important priority, and point to the importance of sensitivity to distributional concerns in designing consolidation packages. In this light, income inequality can be of macroeconomic concern for country authorities, and the Fund should accordingly seek to understand the macroeconomic effects of inequality. In addition, in its policy advice, the Fund should be mindful of how macroeconomic policies (including fiscal policies) affect income distribution and their consistency with the distributional goals of country authorities.

**3. Fiscal policy is the primary tool for governments to affect income distribution.**<sup>3</sup> Fiscal policy has three main objectives—to support macroeconomic stability, provide public goods and correct market failures, and redistribute income. Both tax and spending policies can alter the distribution of income, both over the short and medium term. For example, in-kind benefits, such as education spending, can affect the inequality of market incomes (i.e., incomes before taxes and transfers) through their impact on future earnings. Other fiscal instruments, such as income taxes and cash transfers, can reduce the inequality of disposable incomes (i.e., incomes after direct taxes

<sup>1</sup>In this paper, the category “developing economies” covers both emerging and low-income economies. These are merged together because they face similar issues, and data availability for both groups of economies is similar.

<sup>2</sup>Rajan (2010) argues that rising inequality led to political pressure for more housing credit, which distorted lending in the financial sector. Kumhof and Rancière (2010) show that in the United States, the Great Depression starting in 1929 and the Great Recession starting in 2007 were both preceded by a sharp increase in income and wealth inequality and by a rapid rise in debt-to-income ratios among lower- and middle-income households.

<sup>3</sup>Other tools to influence income distribution include labor market, product market, and institutional reforms, as well as asset redistribution. These can have an influence on inequality directly or through their effects on growth.

and transfers), including indirectly via their impact on market incomes due to work and savings responses.

#### **4. The Fund has long recognized the nexus between income distribution and fiscal policy.**

In the late 1980s there was growing recognition and discussion of the potential effects of macroeconomic and structural adjustment programs on poverty and inequality, including by the IMF's Executive Board (IMF, 1995). These discussions highlighted the importance of social safety nets to protect the poor and safeguard their access to essential public services, such as primary education and healthcare. Guidance notes from management on how income distribution and social expenditures should be addressed by staff, in the context of the Fund's mandate, were issued in the mid-1990s (IMF, 1996, 1997). The Fund also expanded its analytical work in this area, drawing on contributions from leading academics (Tanzi and Chu, 1998; Tanzi, Chu, and Gupta, 1999). The growing attention of the Fund to the impact of fiscal policy on the poor was also reflected in the creation of the Poverty Reduction and Growth Facility (later PRGT) in the late 1990s, which emphasized the importance of pro-poor government budgets. More recently, the work on fiscal policy and equity was revived (Bastagli, Coady, and Gupta, 2012) and subsequently broadened to cover jobs and growth; a guidance note on the latter was issued to Fund staff (IMF, 2013a). The macroeconomic gains from greater gender equity, and fiscal policies to help achieve this, have also been addressed in recent work (Elborgh-Woytek and others, 2013).

**5. Against the background of recent trends in income distribution and experience with the use of redistributive fiscal instruments in both advanced and developing economies, this paper explores how a society's distributional objectives can be achieved in the most efficient manner.** Redistributive fiscal policies can affect private decisions in various ways, including decisions to seek employment, to increase labor effort, and to save and invest. These, in turn, can potentially affect both the level and growth of economic activity, either positively and negatively. Given the Fund's mandate to promote growth and stability, it is important that the potential tradeoffs or complementarities between fiscal redistribution and growth are well understood. In particular, there is a need to identify fiscal instruments that achieve distributional objectives at a minimum cost to economic efficiency (Box 1). In doing so, the paper draws extensively on country experience, as discussed in the literature,<sup>4</sup> as well as in IMF technical assistance reports.<sup>5</sup> The paper also discusses how fiscal policies can protect households from poverty.

---

<sup>4</sup>See, for example, World Bank (2006); OECD (2011a, 2012); Asian Development Bank (2012); and Joumard, Pisu, and Bloch (2012).

<sup>5</sup>The paper has also benefited from consultation with Civil Society Organizations and labor unions on its principal conclusions and policy recommendations. In their comments, they emphasized the limited capacity of developing economies to target social spending and protect the poor from spending cuts; the need to protect low-income workers, who may have short life expectancies, during pension reforms that raise retirement ages; the need to strengthen information sharing on corporate taxation; and concerns that value added taxes, in practice, were regressive.

**6. This paper does not advocate any particular redistributive goal or policy instrument for fiscal redistribution.** The motivation for the paper is to provide guidance to policymakers on options to achieve their desired level of redistribution in the most efficient manner. The paper does not provide guidance on the optimal degree of fiscal redistribution, which is country-specific and depends, among other factors, on preferences for the role of the state and the costs involved in meeting goals for redistribution.

### Box 1. Efficiency and Fiscal Redistribution

The term “efficiency” in economics is often used loosely. At the most precise level, it means Pareto efficiency—a situation in which no individual can be made better off without making some other individual worse off. An efficiency-improving reform in this sense would then be one that makes someone better off and no one worse off. But this is a very demanding test, both in assessing well-being and removing any possibility that someone may be adversely affected by change. Reflecting this, the term “efficiency gain” is often used more loosely to refer to increase in the aggregate level or growth of income; and this is the interpretation in mind here.

A closely related concept is deadweight loss (or excess burden), which measures the inefficiency associated with economic distortions. For example, the welfare loss of a distortionary tax is measured by the burden imposed on individuals in excess of the revenue generated by the tax—and conversely, for a subsidy, the burden in excess of the revenue loss.

Importantly, there may be instances of reform that improve both efficiency—in any of these senses—and equity (Boadway and Keen, 2000). For example, when the rich are altruistically inclined towards the poor, redistribution can be obviously Pareto improving. Also, the provision of social insurance can encourage risk-taking and increase investment returns, thus also potentially improving efficiency. Fiscal redistribution can also relax credit constraints facing poor households and allow them to invest in education, boosting human capital and enhancing efficiency. Interestingly, these examples show that redistribution may yield efficiency gains which are also reflected in higher economic growth.

Identifying instances in which both equity and efficiency can be improved is a primary concern of this paper, though some trade-off between them becomes inevitable once these have been fully exploited.

**7. The structure of the paper is as follows.** The next section describes trends in inequality across advanced and developing economies. The discussion covers inequality of incomes and wealth. It also examines the evidence on the persistence of income inequality across generations, an indicator of equality of opportunity. This is followed by a review of empirical evidence on the redistributive impact of fiscal policies and the extent to which fiscal policy can explain differences in inequality across countries and over time. The paper next focuses on the overall design of redistributive fiscal policy as well as of specific tax and spending instruments, and how these can be designed to minimize the efficiency costs of redistribution. The final section discusses the redistributive impact of fiscal consolidation, which can affect inequality both in the long run through channels explained in earlier sections and through its short-run effects on output and employment.

## TRENDS IN INEQUALITY

**8. Economic inequality can be viewed from different perspectives.** Each of these can provide insights into the nature, causes, and consequences of economic inequality.

- *Inequality of income:* This focuses on the inter-personal distribution of income, which captures how individual or household incomes are distributed across the population at a point in time.
- *Inequality of wealth:* Here the focus is on the distribution of wealth across individuals or households, which reflects differences in savings as well as bequests and inheritances.
- *Lifetime inequality:* This focuses on measuring inequality in incomes or earnings for an individual over his or her lifetime, rather than for a single year.
- *Inequality of opportunity:* This focuses on the relationship between income inequality and social mobility, in particular the extent of mobility between income groups across generations.

### A. Inequality of Income

**9. Over the last three decades, inequality in the personal distribution of income has increased in most economies.** Figure 1 presents trends in the average (unweighted) Gini coefficient for disposable incomes (i.e., market incomes minus direct taxes plus cash transfers) across regions over recent decades—which reflects both the inequality of market-determined incomes as well as the distributional impact of income taxes and public transfers.<sup>6</sup> The Gini coefficient ranges between 0 (denoting complete equality) and 1 (denoting complete inequality).<sup>7</sup> Between 1990 and 2010, the Gini for disposable income has increased in nearly all advanced and emerging European economies. Over one-third of advanced economies and half of emerging Europe experienced increases in their Ginis exceeding 3 percentage points, with most of the increases in emerging Europe occurring between 1990 and 1995 during the early years of their transition to market-based systems. Inequality also rose in most economies in Asia and the Pacific and in Middle East and North Africa. While average inequality fell in sub-Saharan Africa over this period, it still rose by more than 3 percentage points in more than one-fourth of these economies. Inequality also increased in over one-third of the economies in Latin America, although on average there was a slight decline. However, since 2000 there has been a substantial decline in the Gini in nearly all countries in this

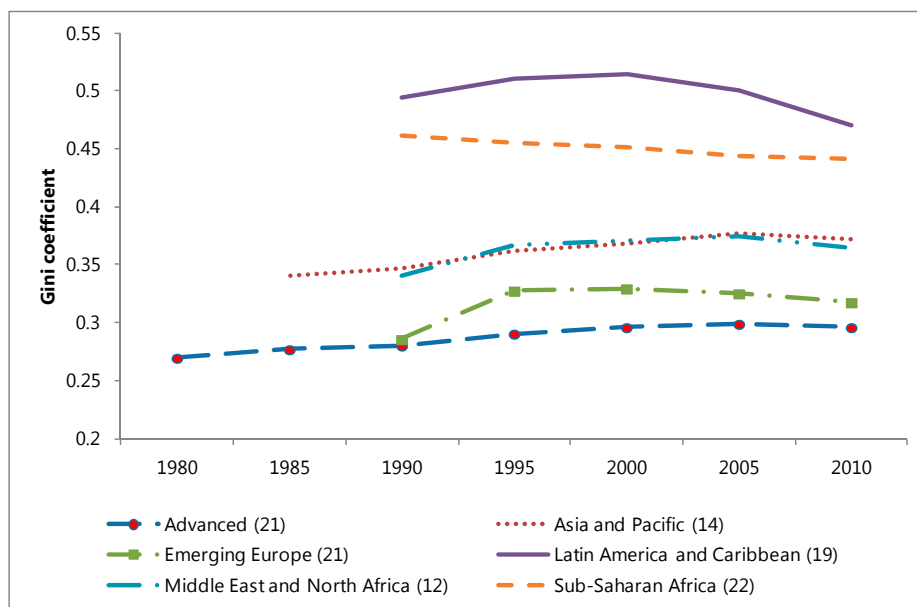
<sup>6</sup>Data on the inequality of market incomes is much more limited, being available mostly for advanced economies and for a shorter time period. For country specific data on Ginis for disposable income, see Bastagli, Coady, and Gupta (2012). For a discussion of the issues that arise when comparing income inequality measures across countries and time, see Atkinson and Bourguignon (2000), Atkinson and Brandolini (2001), and Deaton and Zaidi (2002).

<sup>7</sup>The Gini is less sensitive to inequality at the extremes of the income distribution than many other commonly used measures. However, other inequality measures show a similar trend in overall income inequality. For instance, the ratio of the income share of the top 20 percent of the income distribution to the share of the bottom 20 percent has a correlation coefficient with the Gini of around 0.85.



region. This increase in inequality across the globe has also been accompanied by a widespread rise in public support for redistribution (Box 2).

**Figure 1. Trends in Disposable Income Inequality, 1980–2010**



Sources: OECD; Luxembourg Income Study Database; Socio-Economic Database for Latin America and the Caribbean (SEDLAC); World Bank; Eurostat.

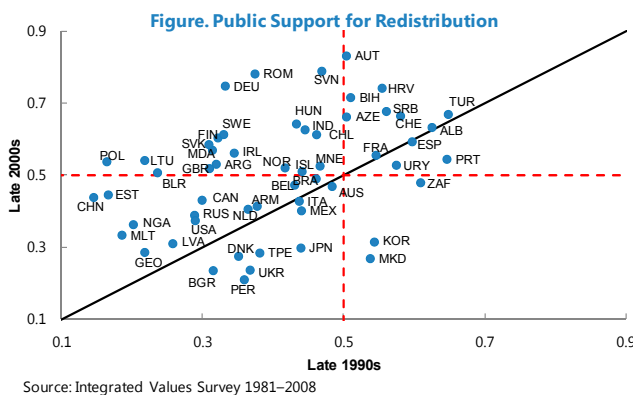
Note: Disposable income is income available to finance consumption once income taxes and public transfers have been netted out. Therefore, the distributional impacts of indirect taxes and in-kind transfers are not included. The Gini coefficient ranges between 0 (complete equality) and 1 (complete inequality). Number of countries in parentheses.

**10. More striking than changes in inequality within regions are the persistent differences across regions.** For instance, between 1990 and 2010, average inequality in each region changed by less than  $3\frac{1}{4}$  percentage points. In contrast, average inequality in the two most unequal regions (sub-Saharan Africa and Latin America) remained 12 percentage points higher than the two most equal regions (emerging Europe and advanced economies). As the following section shows, a large proportion of the differences in regional average disposable income inequalities can be explained by differences in fiscal policies, especially in the levels and composition of taxes and spending.

**Box 2. Rising Public Support for Redistribution**

**International public surveys monitor public support for redistributive policy in both advanced and developing economies.** These surveys, which include the World Value Surveys (WVS), Regional Barometers, and International Social Surveys, ask citizens whether they favor more or less redistribution. In the WVS, respondents are asked to indicate, on a scale from 1 to 10, whether “incomes should be made more equal” (1) or whether the country “needs larger income differences as incentive” (10). For our purposes, we divide these responses in two categories: answers 1 to 5 indicate that the respondents prefer more redistribution, and answers 6 to 10 indicate preference for less redistribution. A similar approach is applied to other surveys to find the share of the population that supports more redistribution.

**The evidence indicates that public support for redistributive policies has grown in recent decades.** Between the late-1990s and the late-2000s, public support for redistribution increased in almost 70 percent of the advanced and developing economies surveyed. For instance, support increased substantially in Finland, Germany, and Sweden, and also in China and India (see Figure). In the late-1990s, results for only 15 economies out of the 57 in the sample (26 percent) indicate majority support for more redistribution. By the late-2000s, the percentage of countries where a majority supported more redistribution grew to 56 percent. These findings are consistent with other surveys of public opinion (e.g., OECD, 2008; ADB, 2012).



**Support for redistribution grew more in countries where inequality increased and, more recently, in advanced economies where the crisis hit hardest.**

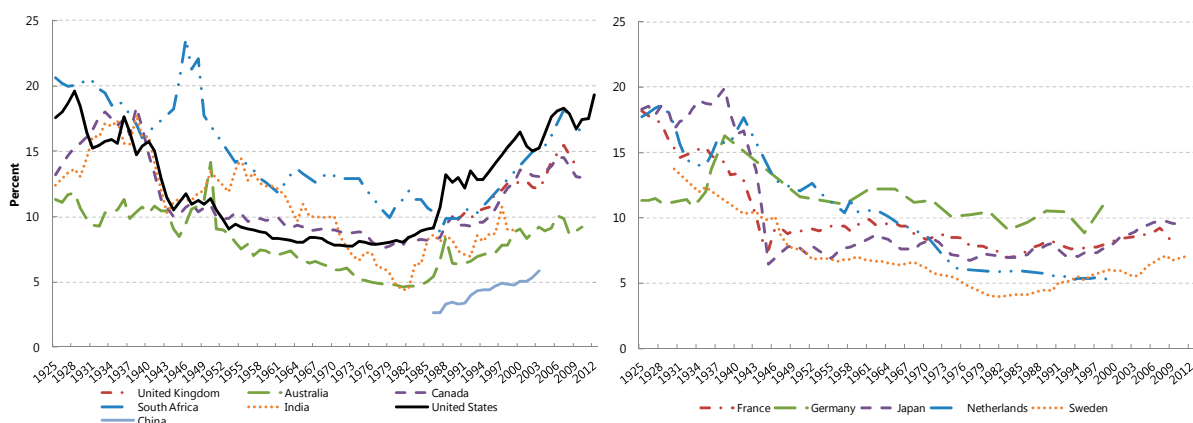
For instance, public support between the late-1990s and the late-2000s grew by more than 30 percentage points in China, Finland, Germany and several Eastern European countries, where the income Gini increased by over 20 percent. At the same time, support declined in countries where the Gini decreased, including in Bulgaria, Mexico, Peru, and Ukraine. Rising inequality thus

seems to partly explain the increased public support for redistribution. Between 2008 and 2011, among advanced economies, public opinion changed more in favor of redistributive policies in countries that experienced large declines in GDP, such as Portugal, Ireland, and Slovenia.

**11. More recently, the public debate has focused on the sharp increase in the share of total income going to top income groups.** Over the last three decades the market income shares of the richest one-percent of the population have increased substantially in English-speaking advanced economies, as well as in China and India (Figure 2). For example, in the United States, the share of market income captured by the richest 10 percent surged from around 30 percent in 1980 to 48 percent by 2012, while the share of the richest one-percent increased from 8 percent to 19 percent. Even more striking is the fourfold increase in the income share of the richest 0.1 percent, from 2.6 percent to 10.4 percent. There has been substantial variation across countries in how much the share of the highest income groups has risen. The increase in the share of the top one-percent has been much less pronounced in Southern European and Nordic economies, and hardly any increases have been observed in continental Europe and Japan. While there is broad consensus

about these trends, there is much less consensus on the factors driving them. Some emphasize the impact of new technologies and globalization on the supply and demand for skills (e.g., Goldin and Katz, 2008; Mankiw, 2013)—which can be expected to affect all economies—while others have highlighted the role of policy choices, such as reductions in top income tax rates. Rent-seeking behavior of top executives (at the expense of other incomes) and wealth accumulation have also been identified as factors behind the rising share at the top (see Stiglitz, 2012; Alvaredo and others, 2013).

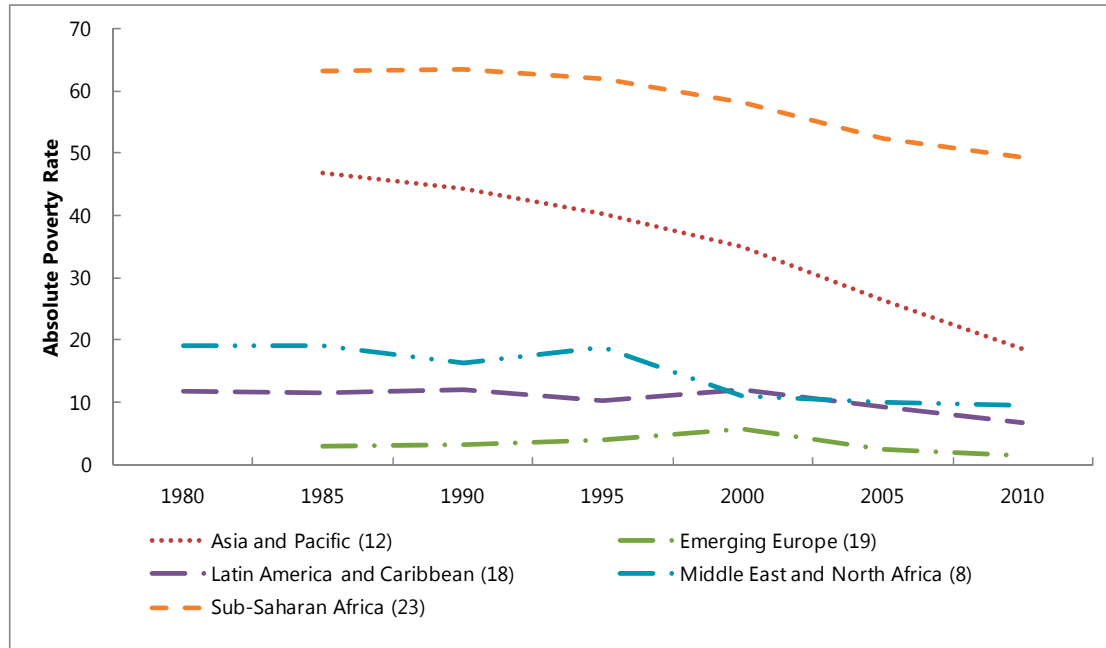
**Figure 2. Gross Income Share of Top One-Percent in Selected Advanced and Developing Economies, 1925–2012**



Source: The World Top Incomes Database. Available at: <http://g-mond.parisschoolofeconomics.eu/topincomes/>.

Note: Income refers to pre-tax-and-transfer gross income (see Atkinson, Piketty, and Saez, 2011, for details).

**12. Despite rising inequality, on average, poverty rates have been declining in most developing economies.** The data for developing economies reflect absolute poverty rates (i.e., the percentage of the population with per capita incomes below \$1.25 per capita per day in 2005 PPP dollars). In sub-Saharan Africa, the combination of sustained economic growth and declining average inequality has led to a substantial and sustained decline in absolute poverty rates (Figure 3). High growth has resulted in even larger decreases in absolute poverty in Asia and the Pacific, despite rising average inequality. Absolute poverty has also been on a downward trend in Latin America and the Caribbean as well as in the Middle East and North Africa since the mid-1990s.

**Figure 3. Poverty Rates in Developing Economies, 1980–2010**

Source: World Bank.

Note: Poverty is measured on an absolute basis as the percentage of the population below \$1.25 per capita per day in 2005 PPP dollars. Number of countries in parentheses.

## B. Inequality of Wealth

**13. In advanced economies, household net wealth—financial assets and real estate minus debt—has increased substantially over the last four decades.** Assessment of trends in this area requires caution, given the limited number of economies with comprehensive data. Internationally comparable data for eight large advanced economies show that the average ratio of net household wealth to national income grew by almost 80 percent between 1970 and 2010 (Piketty and Zucman, 2013). The largest increase was observed in Italy (by 180 percent) and the smallest increase was in the United States (by 21 percent). Explanations for the rapid growth in wealth include asset-price booms and a significant increase in private savings.

**14. Wealth is more unequally distributed than income.** The Gini coefficient of wealth in a sample of 26 advanced and developing economies in the early 2000s was 0.68, compared to a Gini of 0.36 for disposable incomes (Figure 4).<sup>8</sup> The share of wealth held by the top 10 percent ranges from slightly less than half in Chile, China, Italy, Japan, Spain, and the United Kingdom, to more than two-thirds in Indonesia, Norway, Sweden, Switzerland, and the United States. In Switzerland and the

<sup>8</sup>More recent data for a sample of only advanced countries suggest a similar conclusion; see, for example, IMF (2013b).

United States, where wealth is most unequally distributed, the top one-percent alone holds more than one-third of total household wealth.

**15. The inequality of wealth has risen in recent decades in several advanced economies.**

For instance, between the mid-1980s and early-2000s, the growth of wealth in Canada and Sweden was all concentrated in the two upper deciles of the wealth distribution. During the same period, the Gini coefficients of wealth distribution in Finland and Italy rose from around 0.55 to above 0.6. In the United States, the Gini coefficient of wealth distribution rose from 0.80 in the early-1980s to almost 0.84 in 2007.



**16. Non-financial assets represent a large share of household wealth.** Survey data suggest that non-financial assets—such as primary residences and other real estate—represent between 70 and 90 percent of total household gross wealth in advanced economies.<sup>9</sup> In developing economies, this share is even larger: e.g., in the early 2000s it exceeded 90 percent in India and Indonesia (Davies and others, 2008). Financial wealth is generally more unequally distributed than

<sup>9</sup>Administrative data, however, points to a lower share of non-financial wealth. For instance, Eyraud (2013) reports that financial wealth is between 60 and 70 percent of total gross wealth in Japan, Switzerland, and the United States. Survey data for these countries suggest a share that is well below 50 percent.

real estate: for example, Fredriksen (2012) reports that the Gini coefficient for financial wealth (on average 0.8 for a group of seven advanced countries) exceeds that for non-financial wealth (0.63).

### C. Lifetime Inequality

**17. Empirical studies suggest that lifetime inequality is usually lower than inequality in any given year.** This occurs for two reasons. First, in many economies, individuals experience significant fluctuations in incomes from year to year. Because of this, an individual who has relatively high income in one year may not necessarily have high incomes over their entire lifetime, relative to his or her peers of the same age. Bowlus and Robin (2012) find that because of this “earnings mobility” from one year to the next, the lifetime inequality of income is about 20–30 percent lower than annual income inequality in Canada, the United Kingdom, and the United States. In France and Germany, lifetime inequality is similar to that of annual income. Second, lifetime incomes also tend to be less unequal because of the age-income cycle that affects the entire population: incomes tend to be lower during early working years and peak in later years, before declining again (Paglin, 1975). Taking both of these factors into account, Björklund (1993) finds that the dispersion of lifetime income in Sweden is about 35–40 percent lower than that of annual income. The concept of lifetime income inequality is also important for assessing the redistributive effects of social insurance contributions and benefits (see next section).

### D. Inequality of Opportunity

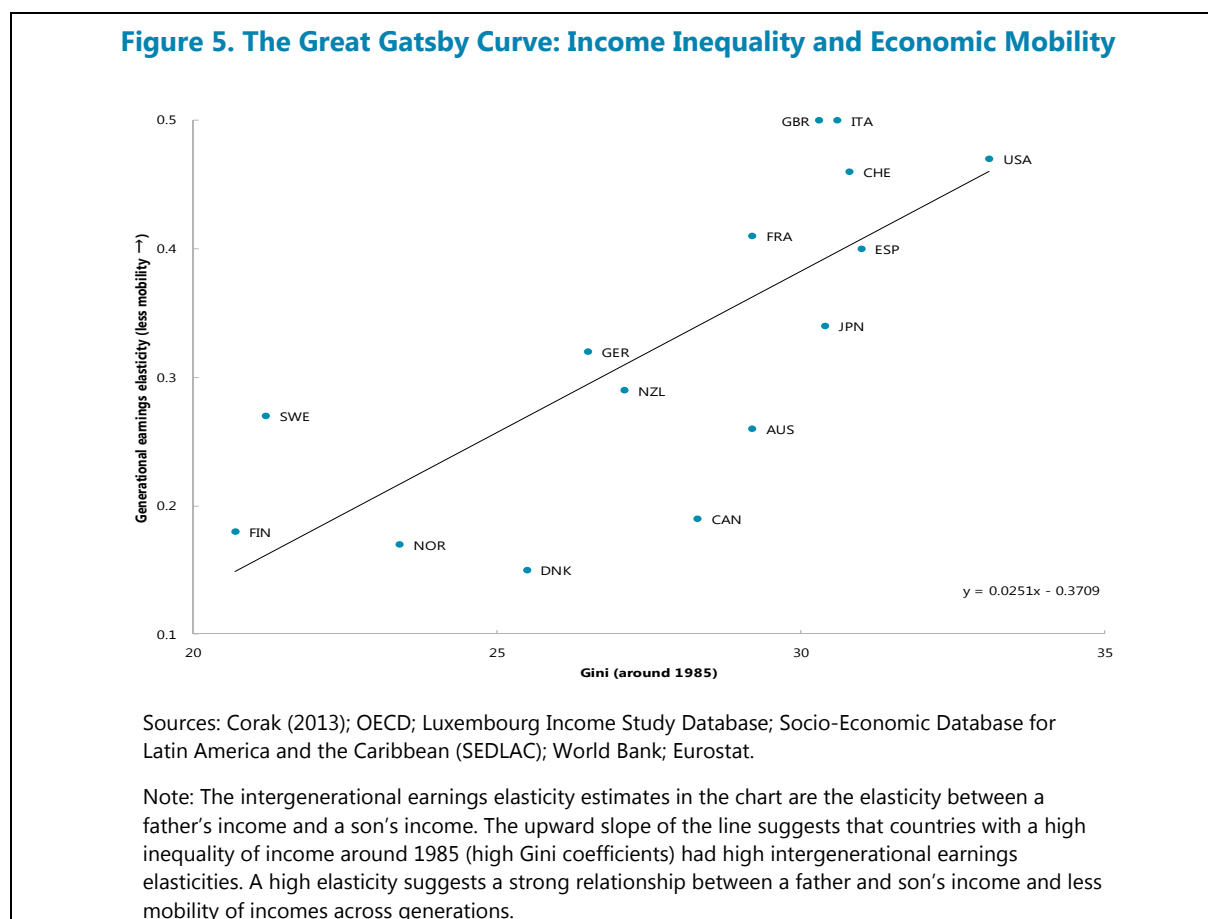
**18. Income inequality can persist across generations, reflecting differences in economic opportunity.** Restricted opportunities for increasing incomes can reflect a range of factors, including lack of access to education (including early childhood and tertiary education) and lack of access to certain professions or business opportunities (OECD, 2011a; Corak, 2013). This lack of access is in turn reinforced by low incomes. Therefore, high income inequality is both a symptom and a cause of low economic mobility, and family background is a key factor in determining the adult outcomes of younger generations.

**19. Intergenerational income mobility is lower in countries with higher income inequality.** Intergenerational earnings mobility, as measured by the elasticity between a parent’s and an offspring’s earnings, is low in countries such as Italy, the United Kingdom and the United States, which have high Gini coefficients for disposable income.<sup>10</sup> In contrast, mobility is much higher in the more egalitarian Nordic countries (Figure 5). This relationship between income inequality and intergenerational mobility is often referred to as the “Great Gatsby Curve” (Krueger, 2012). In low-mobility countries, about 50 percent of any economic advantage that a father has is passed onto his offspring, whereas in high-mobility countries this falls to less than 20 percent.<sup>11</sup> Evidence

<sup>10</sup>The study cited here on mobility (Corak, 2013) focused on the relationship between a father’s and son’s incomes. A lower value for the elasticity suggests more mobility, that is, a weaker relationship between a father’s income and a son’s income.

<sup>11</sup>Chetty and others (2013) also finds that intergenerational income mobility varies substantially throughout the United States, being especially low in southern states.

for Nordic countries finds that intergenerational income mobility is flat across much of the parental income distribution but rises at the top end. In developing economies with available data, income mobility is extremely low, especially in the high inequality economies of Latin America.



## FISCAL REDISTRIBUTION

**20. Evaluating the redistributive impact of fiscal policies requires a comparison of incomes after taxes and transfers with those that would exist without them.** In principle, assessments of the incidence of fiscal policies should incorporate information on consumers' and producers' behavioral responses to taxes and transfers and their impact on market incomes.<sup>12</sup> In practice, most studies do not incorporate this aspect, since sufficient data on behavioral responses are often unavailable. In these studies, the incidence of commodity taxes is typically assumed to fall on consumers, factor taxes are assumed to fall on factor suppliers (labor and capital), and transfers to

<sup>12</sup> For critiques of these standard approaches to incidence analysis, see Kotlikoff and Summers (1987) and Boadway and Keen (1993). Whalley (1984) shows how apparently plausible changes in incidence assumptions can have a large effect on the estimated distributional impact of the tax system. Dilnot, Kay, and Keen (1990) provide an alternative rationalization of standard incidence studies in terms of "wedges" between what individuals take from and contribute to the wider economy.

beneficiaries do not lead to changes in factor supplies.<sup>13</sup> The evidence below is drawn from such studies. In econometric studies, on the other hand, behavioral responses are captured—Box 3 provides a summary of recent empirical literature evaluating the distributive impact of fiscal policy based on econometric analysis of cross-country panel data.

### Box 3. Redistributive Fiscal Policy: Evidence from Regression Analysis

**The use of regression-based models to study the redistributive impact of fiscal policy has grown in recent years.** In principle, these models can provide estimates of the effects of fiscal policy without assumptions on compliance and take-up rates. They can also capture the general equilibrium effects of taxes and transfers. The models usually regress the disposable income Gini coefficient on variables capturing the composition of taxes and spending, while adding control variables to account for other factors that can affect income distribution. Several difficulties are encountered in these empirical studies. For example, data may not be fully comparable across countries or over time; estimation methods may not adequately address the endogeneity of fiscal variables and omitted variable bias; and the results and their interpretation are sensitive to model specification and data sources. These models can also obscure the fact that the design of taxes and transfers also matters for their distributive incidence, as they implicitly assume a similar design across countries.

**The findings from regression-based studies suggest that greater reliance on income taxes and higher spending on social benefits reduces inequality.** The majority of the studies provide evidence that is qualitatively consistent with those from micro-simulation models: direct taxes are more redistributive than indirect taxes, and social protection spending reduces inequality. At the same time, these studies find that higher spending on targeted social benefits (such as means-tested social assistance) does not always reduce inequality. This could reflect the behavioral response of benefit recipients, such as their withdrawal from the labor market. Such results underscore the importance of designing benefits in a manner that does not discourage work effort.

Sources: Chu, Davoodi, and Gupta (2004); Niehues (2010); Ospina (2010); Martínez-Vázquez, Vulovic and Moreno-Dodson (2012); Muinelo-Gallo and Roca-Sagles (2013); and Woo and others (2013).

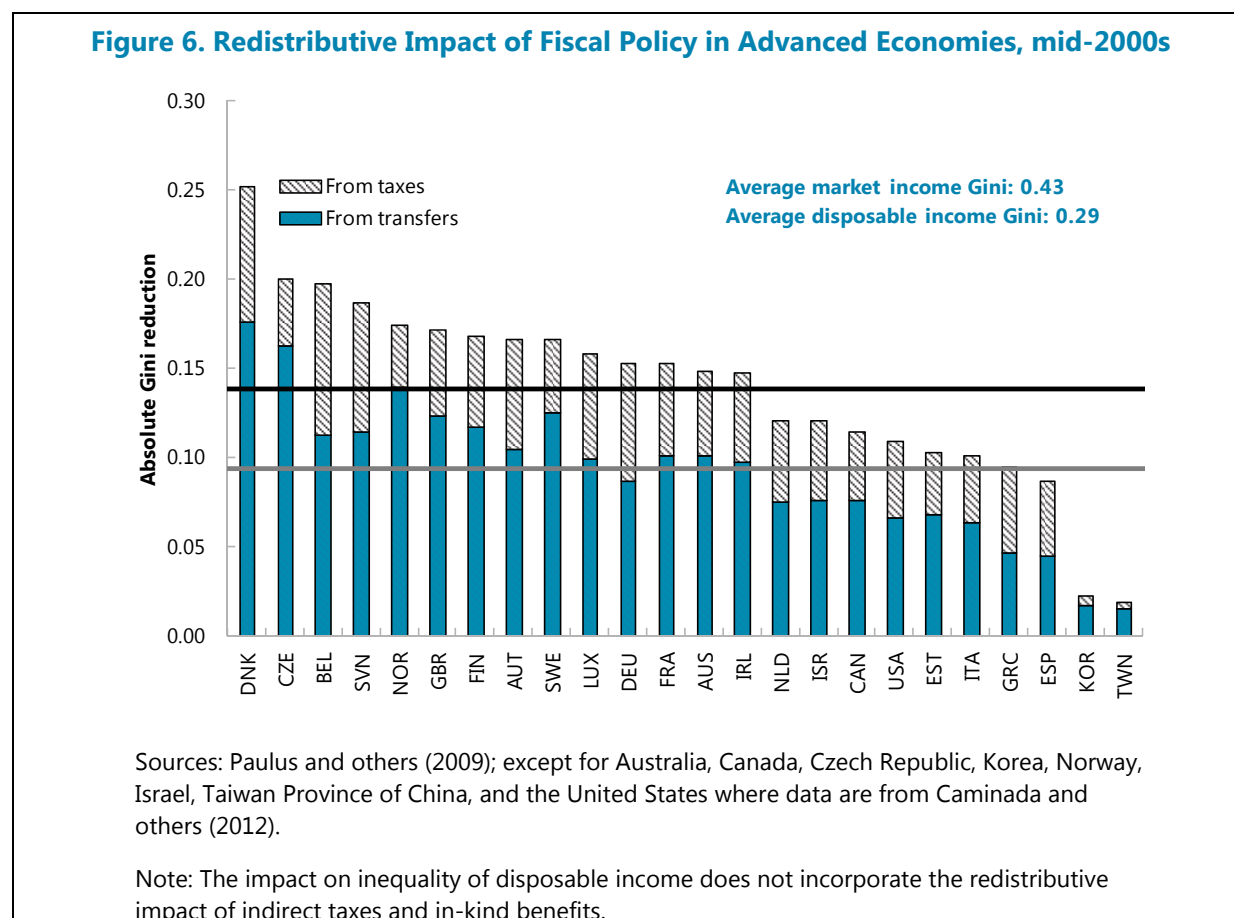
## A. Advanced Economies

**21. Fiscal policy has played a significant role in reducing income inequality in advanced economies, with most of this reduction being achieved on the expenditure side through transfers.** Over recent decades, direct income taxes and transfers have decreased inequality in advanced economies by an average of one-third (Figure 6). For instance, in 2005, the average Gini for disposable income was 14 percentage points below that of the average market income Gini. The redistributive impact of transfers accounts for about two-thirds of the decrease in the Gini. Within transfers, non-means-tested transfers (including public pensions and family benefits) account for the bulk of the redistribution (Immervoll and others, 2005; Paulus and others, 2009). On the tax side, personal income taxes make an important contribution to reducing inequality in a number of

<sup>13</sup> Although public sector support for access to finance (e.g., mortgage, finance, and education loans) can also affect inequality, this impact is not included in these studies. Correcting market failures that strengthen access to finance can also reduce the inequality of lifetime income and of opportunity.



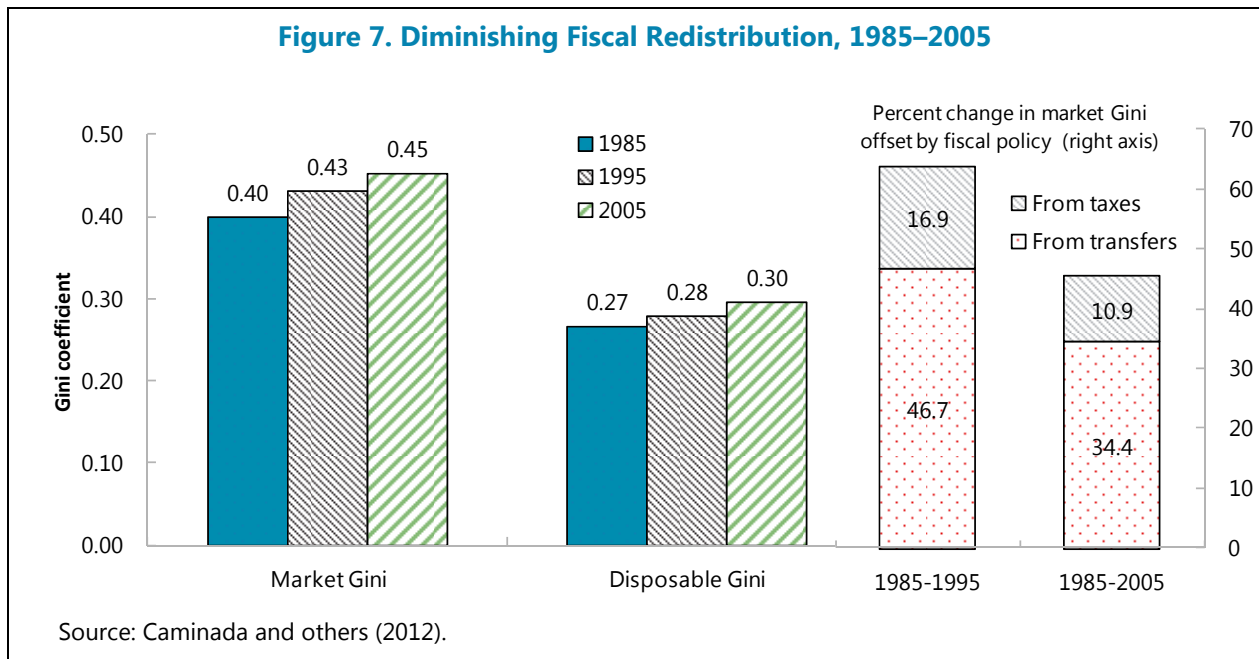
economies—in fact, in most economies, the redistribution achieved through income taxes is even higher than for means-tested transfers.<sup>14</sup>



**22. Social insurance and other transfers are far less redistributive when examined from the perspective of lifetime income.** Pension systems, for example, redistribute income across an individual's own lifetime, with pension contributions being made during peak earning years, and benefits received during retirement when incomes are lower. Similarly, households receive more in transfers when they have children. The fiscal redistribution of incomes from the lifetime rich to the lifetime poor is thus smaller than that implied by a snapshot in any one year. For instance, Bovenberg, Hansen, and Sorenson (2012) show that about three-fourths of redistribution in Denmark involves redistribution over peoples' lifecycle as opposed to redistribution from lifetime rich to lifetime poor—they also report similar magnitudes for Australia, Ireland, Italy, and Sweden from other studies.

<sup>14</sup>Paulus and others (2009) also find that fiscal policy decreases the poverty rate in 19 OECD countries from an average of 30 percent to 15 percent, with virtually all of this being achieved on the transfer side of the budget.

**23. Reductions in the generosity of benefits and less progressive taxation have decreased the redistributive impact of fiscal policy since the mid-1990s.** Between the mid-1980s and mid-1990s, the Gini coefficient for market income increased by 3.1 percentage points, while that for disposable income increased by only 1.1 points (Figure 7). Therefore, fiscal policy offset about two-thirds of the increase in market income inequality over this period. Over the subsequent decade (mid-1990s to mid-2000s), market income inequality increased by a further 2.2 percentage points while disposable income inequality increased by 1.8 percentage points. Therefore, while market income inequality increased by less than over the previous decade, disposable income inequality actually increased by more. As a result, during the two decades from the mid-1980s to the mid-2000s, fiscal policy offset less than half of the increase. In the absence of policy changes, the absolute distributive impact of fiscal policy would have been higher (and the increase in disposable income inequality lower) than observed over the second decade. This is the case because a progressive tax and benefit systems tends to redistribute income even more when market inequality rises (e.g., due to unemployment or rising incomes of top earners). The decrease in the redistributive power of fiscal policy has been attributed to fiscal reforms in many economies since the mid-1990s that have reduced the generosity of unemployment and social assistance benefits as well as income tax rates, especially at higher income levels (OECD, 2011a).



**24. The evidence on the effects of reductions in corporate income taxes on inequality is mixed.** In theory, the impact of corporate taxes on wages and capital income over the long run depends on the relative mobility of capital and labor across both sectors and countries (Auerbach, 2006). Where capital is more internationally mobile, the incidence of corporate taxes will tend to fall on wages to the extent that labor is immobile, with this impact being reduced when the home country is large enough to affect the international rate of return on capital. However, the taxation of “rents” (i.e., above normal profits) is still likely to fall on owners of capital. Recent empirical evidence

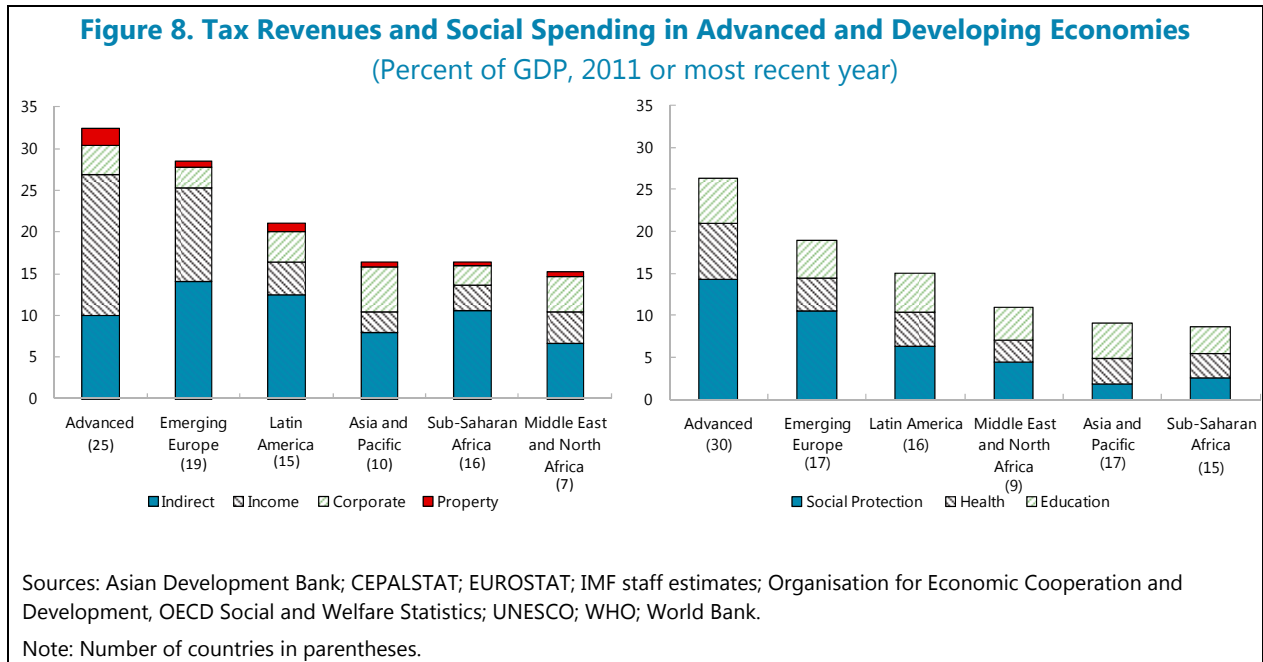
on the long-run incidence of corporate taxes suggests that between 45 and 75 percent of the corporate tax burden falls on wages (Gentry, 2007; Arulampalam, Devereux, and Maffini, 2010). Since wage earners typically have lower mean incomes than those with capital income, corporate income taxes may not be as progressive over the longer term as is often believed.

**25. The overall redistributive impact of fiscal policy is also influenced by the distribution of indirect taxes and in-kind transfers.** Empirical evidence suggests that indirect taxes tend to be regressive or proportional to incomes (O'Donoghue, Baldini, and Mantovani, 2004; Cnossen, 2005). While both the value-added tax (VAT) and excise duties are found to be regressive, excise taxes are especially regressive. However, the regressivity of indirect taxes is typically much smaller when assessed against lifetime income or consumption. In-kind transfers such as education and health spending are very progressively distributed (i.e., their benefits are more equally distributed than disposable incomes). On average, in-kind transfers are found to decrease the Gini coefficient by 5.8 percentage points in five European economies (Belgium, Germany, Greece, Italy, and the United Kingdom), with health (3.6 points) and education (2.2 points) accounting for virtually all of this impact (Paulus, Sutherland, and Tsakloglou, 2009). In addition, expansion of access at lower levels can decrease earnings inequality in the medium term (De Gregorio and Lee, 2002).

## B. Developing Economies

**26. Much less evidence exists on the overall distributional incidence of fiscal policy in developing economies.** One exception is Latin America, where recent studies provide a more comprehensive picture than in other developing regions. For other regions, studies tend to focus on specific tax and spending components. Despite the relative paucity of research, it is still possible to provide a broad picture of the redistributive role of fiscal policy by combining the insights from these studies with information on the composition and overall level of taxes and spending.

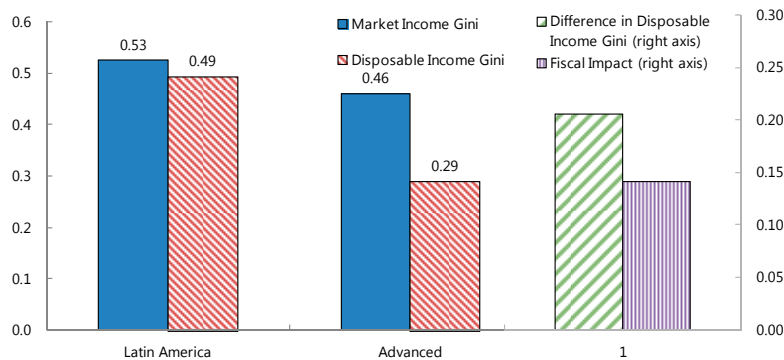
**27. Low levels of both taxes and social spending limit the redistributive impact of fiscal policy in developing economies.** While average tax ratios for advanced economies exceed 30 percent of GDP, tax ratios in developing economies (excluding emerging Europe) generally fall in the range of 15–20 percent of GDP (Figure 8). As a result, social spending is also much lower in developing economies, which substantially reduces the redistributive effects of fiscal policy. For instance, differences in the redistributive impact of tax and spending can explain two-thirds of the difference in the disposable income Gini coefficient between Latin America and advanced economies (Box 4).



**Box 4. Fiscal Policy and Income Inequality in Latin America**

**A large part of the difference in income inequality between Latin America and advanced economies can be attributed to differences in the redistributive impact of fiscal policy.** Recent studies find that tax and transfer systems decreased the average Gini by 3 percentage points, from an average market income Gini of 0.53 to an average disposable income Gini of 0.50. This compares to an average decrease of 17 percentage points in advanced economies, from an average market income Gini of 0.46 to an average disposable income Gini of 0.29. Therefore, two-thirds of the difference in the Ginis for disposable income between the two groups of countries (14 out of the 21 points difference) can be explained by the different redistributive impact of fiscal policies (see Figure).

**Figure. Redistributive Impact of Fiscal Policy in Latin America and Advanced Economies, late-2000s**

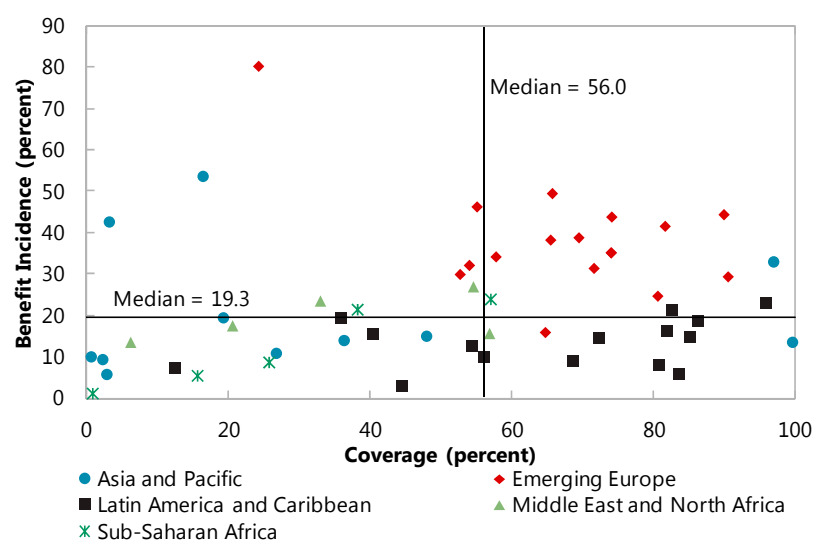


Sources: LIS; OECD; Goñi, López and Servén, 2011; Lustig, Pessino, and Scott, 2013.

**28. In addition to having lower total social spending, developing economies allocate a relatively smaller proportion to social transfers.** The share of social spending allocated to social transfers (including social insurance and social assistance transfers) is especially low in low-income countries in the Asia and Pacific region and in sub-Saharan Africa (Figure 8). The redistributive impact of these social transfers is further diminished by low coverage of low-income groups, resulting in most of the benefits going to higher-income groups (Figure 9). In Latin America and the Caribbean, high coverage reflects the extensive coverage of households in social assistance programs, which tend to have lower benefit levels than other social transfers such as pensions. As a result, the poor in this region still receive a low share of total social transfers.

**29. The distribution of in-kind social spending has been found to be regressive in many developing economies, reflecting the lack of access by low-income households to key public services such as education and health.** The incidence of spending varies across different categories (Figure 10; see also Demery, 2000, and Van de Walle, 1995). Primary health care spending, for example, is progressive, but higher-level spending is regressive. In education, primary education spending is progressive, while secondary and tertiary education spending are regressive. These results suggest that spending geared towards increasing access to basic education and health services (“extensive expansion”) is likely to be much more progressive than current spending. Expansion of access to education and health can also reduce income inequality over the medium term by reducing inequality of education outcomes and earnings (De Gregorio and Lee, 2002).

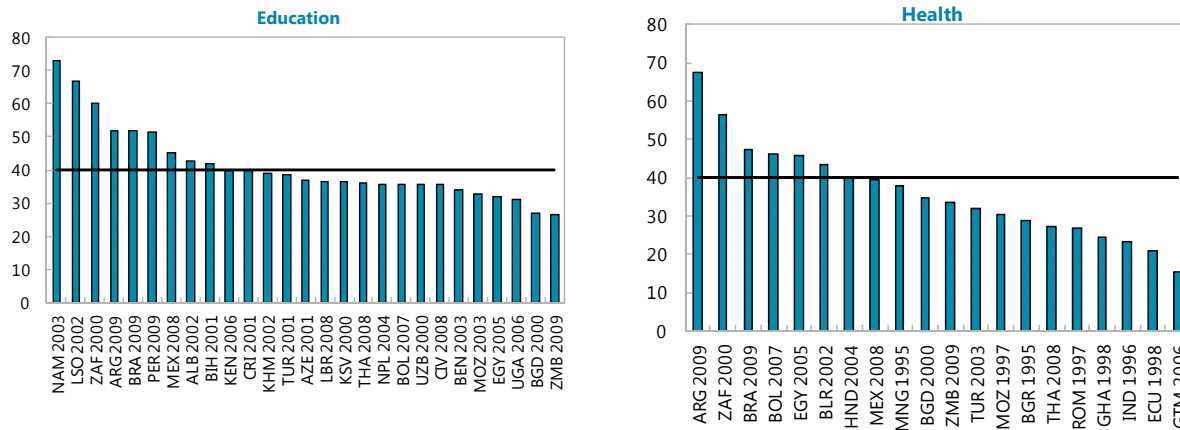
**Figure 9. Social Protection Coverage and Incidence in Developing Economies, late-2000s**  
(Share of the poorest 40 percent of the population)



Source: World Bank ASPIRE dataset.

Note: Coverage indicates the share of the poorest 40 percent of households that receive a social protection transfer. Benefit incidence indicates the share of total social protection transfers received by the poorest 40 percent of households.

**Figure 10. Benefit Incidence of Education and Health Public Spending**  
(Percent of public spending going to poorest 40 percent of households)



Sources: Davoodi, Tiongson, and Asawanuchit (2010); Lustig and others (2011); World Bank.

## DESIGN OF EFFICIENT REDISTRIBUTIVE FISCAL POLICY

### A. Conceptual Framework

**30. This section discusses how fiscal policy can contribute to achieving distributional objectives at minimum efficiency cost.** As highlighted earlier, while there is broad consensus regarding recent trends in income inequality, there is less consensus regarding the forces driving these trends—for example, whether it reflects inefficient rent seeking or efficient market rewards for increasing productivity—or on the policy implications for countries. However, there is clear evidence of rising popular support for redistribution from public attitude surveys in advanced and developing economies.

**31. Redistributive fiscal policy should be consistent with an appropriate level and composition of public spending and fiscal sustainability.** In theory, the optimal level of spending is where the marginal social benefit of spending equals the marginal social cost of financing this spending. Since this applies to each category of spending, for a given source of financing, the marginal social benefit of spending should also be equal across spending categories. These considerations have three implications. First, the optimal level of redistributive spending will vary from country to country, as it depends on preferences<sup>15</sup> and costs (including the efficiency costs of taxation). Second, the benefits from additional spending on redistribution should be compared with the benefits of raising outlays in other areas, such as public infrastructure to support higher growth. Third, redistributive fiscal policy should be consistent with fiscal sustainability, which can support economic growth and the capacity to finance higher spending on redistribution over the longer term.

<sup>15</sup>For example, some countries with high poverty rates may prioritize decreasing poverty rather than inequality.

**32. Fiscal redistribution can usually most efficiently be achieved through direct instruments that tax or provide benefits based on income.** Fiscal redistribution, by its very nature, involves transferring resources from higher-income to lower-income households through taxes and transfers. On the tax side, personal income taxes, for example, are often preferable for achieving redistribution than taxes on consumption because they directly take account of the ability of households or individuals to pay. On the spending side, cash transfers to poor households are usually superior to indirect methods such as price subsidies. Better targeting of transfers reduces their fiscal cost and the tax levels required to finance them, thus achieving distributional objectives in a more efficient manner. Targeting, however, is not without efficiency costs and must be designed carefully (see below).

**33. The impact of tax and expenditure policies on redistribution should be evaluated jointly.** Although both taxes and spending can have redistributive implications, the trade-off between efficiency and redistribution will usually differ. Therefore, where the efficiency cost of redistribution through taxes is relatively large, this suggests that these taxes should focus on raising revenue to finance other redistributive instruments. For instance, an increase in regressive taxes can still be the best approach to supporting redistribution if the public expenditures they finance are highly progressive.

**34. Both tax and expenditure policies need to be carefully designed to balance distributional and efficiency objectives.** These can be designed to minimize efficiency costs (in terms of effects on incentives to work and save) through applying the following principles:

- *Use means-tested cash transfers where possible while minimizing adverse labor market incentives.* Means-tested programs restrict eligibility or benefit levels according to income and can thus achieve redistributive objectives at a lower cost than benefits provided to the entire population. These programs should be implemented in a manner that avoids adverse effects on labor markets, for example, by gradually phasing out benefits as incomes rise.<sup>16</sup> In countries with a strong preference for providing benefits on a universal basis and the capacity to raise high levels of revenues in an efficient manner with broad popular support, means-testing may not be the socially optimal approach.
- *Use tagging where means testing is not feasible.* Tagging links transfers to characteristics that are strongly correlated with income. The more strongly correlated are the characteristics with income or other characteristics of need, the lower the fiscal cost of achieving a given amount of redistribution.<sup>17</sup> However, since characteristics used as “tags” are only imperfectly correlated with need, this results in undercoverage of the poor and leakage of benefits to the non-poor.

<sup>16</sup>For example, in a minimum income scheme where the transfer equals the difference between an individual's income from work and the poverty line, the implicit marginal tax rate on work is 100 percent. In this case, a more gradual phasing out of the benefit as labor income rise would reduce these disincentives to work, although fiscal savings from means-testing would be lower.

<sup>17</sup>For example, linking benefits to age (e.g., as with child benefits, education grants, and pensions) or geographic location (as with housing costs) may be an effective way of targeting benefits to lower-income groups.



Therefore, additional transfer programs may be needed to protect the excluded poor. In addition, to be effective, tags should not easily be manipulated by individuals or households and should be easily verifiable.

- *Make income taxation progressive.* The efficiency costs of redistribution can be reduced with tax schedules that entail higher tax rates for upper-income groups than for those in the middle of the income distribution (Box 5).

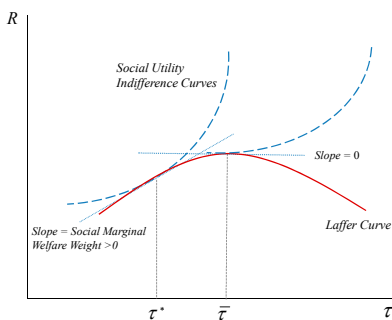
**Box 5. What is the Shape of the Optimal Income Tax Schedule?**

**How should tax and transfer systems be designed to yield the highest level of social welfare, accounting for both equity and efficiency concerns?** Using the Mirrlees (1971) optimal-tax framework, Diamond (1998) and Saez (2001) show that the optimal marginal tax structure typically features a U-shaped pattern as a function of income: high at the bottom, high at the top and low for middle incomes. At the bottom of the distribution, the high marginal tax rates are the result of means testing, i.e., a gradual phasing out of cash transfers (negative income taxes). This is optimal because it ensures that redistribution is targeted to only those with the lowest incomes. In turn, this allows lower marginal tax rates across the board and smaller overall tax distortions. For those at middle income level, marginal rates should be lower because the density in the income distribution is generally high—there are many middle income individuals in a typical bell-shaped curve—so that the aggregate distortionary effect of high marginal rates in this range would be very costly since it would be borne by many people. Towards the top of the distribution, the optimal marginal tax rate should increase again, as density gets smaller and the redistributive gains will dominate efficiency costs. As a corollary, this optimal-tax result suggests that flat personal income tax (PIT) structures are generally not the best way to organize redistribution efficiently (Keen and others, 2008).

**Due to discrete participation distortions, implementing an “earned income tax” credit that reduces tax rates for low-income workers can improve efficiency.** Such a credit relieves very low labor incomes from paying tax, or even pays them a net subsidy (a negative income tax) (see Saez, 2002). This is desirable because the supply of labor is relatively elastic at the very bottom, where people face a discrete choice between participating in the labor market or not. These schemes—known under various names such as “in-work benefits”—have become popular in several advanced countries and evaluations are generally positive (see Box 6).

**The optimal top PIT marginal tax rate is a contentious policy issue, but optimal tax models provide some guidance.** If one assigns zero welfare weight to top income earners (meaning that society’s welfare does not include the welfare of the rich), it would be optimal simply to maximize revenue collected from them (Saez and others, 2012). This requires balancing the

**Figure. Laffer Curve for Top Income Group**



revenue gain from a higher marginal top PIT rate at the initial base against the revenue loss induced by behavioral responses that a higher tax rate would induce—such as reduced labor effort, avoidance or evasion—measured by the elasticity of taxable income and illustrated by the Laffer Curve (for payments only by those at the top of the income distribution) in the Figure. Studies estimating this revenue-maximizing rate find that it generally ranges between 50 and 60 percent (IMF, 2013b). Piketty, Saez, and Stantcheva (2011) argue that it may be even higher—up to 80 percent—as higher top rates can help discourage rent seeking by top-income earners. These calculations, however, rely on the extreme assumption of a zero

welfare weight for the very rich. If a positive welfare weight is assigned to them, the optimal top PIT rate will be lower and left from the top of the Laffer curve (see Figure).



- *Design indirect taxes to raise revenue in an efficient manner.* Efficiency and costs of administration and compliance typically point to making broad-based consumption taxes uniform and avoiding differential rates across goods and services. These revenues can then help finance progressive spending. So ineffective are reduced rates in targeting support to the poor that the impact of eliminating them—and expanding even moderately progressive spending—can be pro-poor (Keen, 2014). The case for reduced rates is strongest where the capacity to deliver public transfers to the poor is very weak.

**35. Fiscal policy can also promote equality of opportunity and greater intergenerational mobility.** Spending focused on increasing access to education and health can enhance social mobility and help break the inter-generational transmission of poverty and disadvantage. Expanding access for disadvantaged groups will also enhance the progressivity of public spending. In addition, improved education and health outcomes among lower income groups will lower future income inequality thus reducing the need for redistributive taxes and transfers.

**36. The appropriate mix of direct and indirect instruments will depend on administrative capacity.** The effective use of direct cash transfers and taxes requires that the government has access to information on individual incomes and the administrative capacity to process this information, collect taxes, and pay transfer benefits to households. When such capacity is limited, as is the case in many developing economies, indirect instruments (such as tagging and progressive indirect taxes) need to be considered as an alternative way to achieve redistribution. In general, the range of options that are feasible for emerging economies, especially on the expenditure side, will be wider than that for low-income economies.

**37. The economic costs of using fiscal policy to achieve distributive goals should be compared with other policy instruments, such as labor market regulations.** Minimum wages and employment protection regulations, for example, impose economic costs on the private sector. The impact of minimum wages on inequality is ambiguous, given its offsetting effects on wage dispersion and employment.<sup>18</sup> Even when effective at increasing wages for low-wage workers, they are a blunt instrument for addressing inequality, since these benefits will also accrue to non-poor households with members working at low wages.<sup>19</sup> Given the uncertainty around the possible effects of wage and employment regulations, fiscal instruments (such as well-designed in-work social benefits) are in most cases a superior approach to achieving redistributive goals in an efficient manner (Box 6).

**38. The effect of redistributive fiscal policies should be considered in conjunction with these labor-market regulations.** For example, in-work benefits can increase labor supply and

<sup>18</sup>See OECD (2012) for further discussion.

<sup>19</sup>CBO (2014), for example, indicates that 19 percent of the benefits from raising the minimum wage in the United States would accrue to families below the poverty line, and 29 percent to families with incomes three times the poverty line.

reduce low-skilled wages, thus shifting some of the benefit incidence to employers. This, however, can only occur when minimum wages are relatively low and do not impose a binding floor.<sup>20</sup>

### Box 6. In-Work Benefits and Credits

**In-work benefits are used in many advanced economies to stimulate labor force participation and provide income support to low income groups.** In many countries these take the form of tax credits, which constitute a net transfer to the individual when they exceed income tax liabilities. These benefits increase the net income gain from accepting a job relative to the alternative of being out of work and provide income support. In-work benefits are usually phased out as incomes rise, with the steepness of phase-out depending on the primary objective of the program. In countries that emphasize the labor force participation objective, benefits are usually gradually phased out with individual income (Belgium, Finland, Germany, the Netherlands, and Sweden). Minimum hours-worked requirements are often used to avoid providing income support to high-skilled workers in part-time jobs. In countries that emphasize the income support objective, benefits are often conditional on the presence of children in the household and generally phased out more steeply with family income so as to prevent leakage of benefits to higher income families and reduce fiscal cost (Canada, France, Korea, New Zealand, the Slovak Republic, the United Kingdom, and the United States). However, the steep phasing out of benefits causes high marginal tax rates and creates strong adverse labor supply effects (De Mooij, 2008).

**Empirical studies suggest positive net employment effects from in-work credits.** For schemes in the United Kingdom and the United States, evaluation studies find that programs have a positive net effect on employment, especially for single women with children (Hotz and Scholz, 2003; Immervoll and Pearson, 2009). Although negative labor supply effects have been found for those with income levels within the phase-out range, these were small (Eissa and Hoynes, 2006). The aggregate effect on labor supply has been found to be quite small.

**The use of in-work tax credits is most appropriate for countries with a strong tax administration based on the withholding of tax obligations.** If most taxpayers are already filing tax returns, an effective withholding tax system is in place, and credits are provided on the same basis as the income tax (i.e., individual or family based), the cost of administering in-work tax credits will be small. However, costs can be substantial if low-wage earners are currently not filing tax returns, there is no effective withholding system, or if schemes are extended to the self-employed. In addition, it is important to ensure that the existence of other means-tested social benefits do not offset the positive work incentives from tax credits. Where the earned income tax credit is based on self assessment, as in the United States, non-compliance and false claims (e.g., regarding number of qualifying children) can be a problem. Given the administration capacity required to implement these programs, and their potentially large fiscal costs, in-work benefits are unlikely to be a viable option for many developing economies.

## B. Social Spending

**39. This section considers how social expenditure policies in advanced and developing economies can be reformed to achieve more efficient redistribution.** As seen in earlier sections, social spending (social protection, education, and health) is the primary instrument used to achieve redistributive goals in most countries. This spending can be made more efficient by improving its targeting and reducing its adverse labor market effects. The appropriate mix of programs and

<sup>20</sup>In the United States, it has been estimated that 70 cents per dollar spent on the earned income tax credit ultimately benefits employers by reducing their labor costs (Rothstein, 2010).

design features will vary across advanced and developing economies to reflect differences in fiscal and administrative capacities. The discussion focuses first on social protection spending, including public pensions, family benefits, social assistance, and unemployment benefits. This is followed by a discussion of the main in-kind social spending items, education and health.

**40. In advanced economies, appropriately designed pension reforms can perform an effective redistributive role while ensuring fiscal sustainability.** Pension benefits account for about two-thirds of social protection spending and, in the absence of reforms, average pension spending is projected to rise by an additional 1½ percent of GDP by 2030 (Clements and others, 2012). Pension systems play an important lifetime consumption smoothing role in protecting the elderly from a sharp drop in consumption during retirement and account for over half of the total redistributive impact of social transfers. At the same time, many economies will need to contain increases in pension spending in the coming decades to support fiscal consolidation. The following reform options could safeguard the redistributive role of pensions while containing the growth of spending:

- *Increasing the effective retirement age.* Gradual increases in the statutory retirement age reduce the need for other reforms that lower pension benefits and risk increasing old-age poverty (Shang, 2014), and can also enhance employment and economic growth. Because lower-income groups tend to have shorter life expectancy than higher income groups, an increase in the retirement age results in a proportionally larger reduction in their lifetime pension benefits. This can be mitigated by linking pension eligibility to years of contribution instead of a single statutory retirement age. Increases in the retirement age should also be accompanied by measures aimed at enhancing the earning opportunities for those approaching the statutory retirement age, especially the low skilled whose income potential can decline significantly as they approach retirement. In some economies, this may require strengthening of labor regulations protecting older workers, as well as retraining and adult education programs. Older workers should be protected fully by disability pensions where appropriate, and through social assistance programs to ensure that increases in retirement ages do not raise poverty rates. In addition, incentives and opportunities for early retirement (including through disability benefits) and disincentives to work beyond the statutory retirement age need to be reduced in many countries, for example, through concessional contribution rates and in-work benefits.
- *Incorporating pension incomes into a progressive income tax system.* In many countries, pensions enjoy favorable tax treatment.<sup>21</sup> In such cases, equalizing treatment across income sources by incorporating all pension benefits into the standard progressive income tax system can reduce the net fiscal cost of pension spending while protecting lower-income groups and lowering

<sup>21</sup>In most countries, pensions contributions are exempt from income taxation while pension benefits receive favorable tax treatment, e.g., with special deductions or income tax schedules based on age (IMF, 2013b). Only 10 advanced and emerging economies (Austria, China, Chile, Denmark, France, Iceland, New Zealand, Poland, Russia, and Sweden) treat pensions like any other form of income, and some (notably, several emerging economies) fully exempt pension income from taxation.

inequality.<sup>22</sup> In addition, countries that subsidize private pensions through tax relief or matching contributions should consider scaling these subsidies back since these benefits accrue mostly to high income groups and have little impact on national savings (European Commission, 2008).

- *Making benefit cuts progressive.* Many parametric reforms contain spending pressures by reducing replacement rates (i.e., the ratio of the average pension benefit to the average wage) over time. Where possible, these reductions should be progressive to avoid increases in poverty among the elderly. However, progressive benefit cuts require larger cuts in replacement rates for higher income groups, and thus involve a trade-off between poverty and consumption smoothing objectives and may exacerbate compliance problems. Where benefit cuts for lower-income groups are unavoidable, it is important that these groups have access to other social benefits to prevent them from falling into poverty. Addressing old-age poverty concerns through a means-tested social pension financed from general revenues would also allow the earnings-related component to achieve its broader consumption smoothing objectives more efficiently, and the financing could use revenue instruments that are more progressive than payroll taxes.

**41. For developing economies, pension reforms should focus on improving the sustainability of existing systems, and consideration could be given to expanding noncontributory pensions.**

The small redistributive impact of public transfers in most developing economies is due in a large part to the limited coverage of public pension systems and the fact that coverage is typically skewed towards higher-income groups in large formal sector firms and the public sector. In addition, these pension systems often require significant financing from general government revenues thus further reducing the overall redistributive fiscal impact. Given their regressive impact, priority should be given to parametric reforms that put existing systems on a sound financial footing and reduce the need for financing from general revenues. This can free up resources to finance an expansion of noncontributory “social pensions” that provide a flat pension aimed at poverty reduction. Social pensions exist in both emerging and low-income developing countries (e.g., Bangladesh, Brazil, Chile, Ethiopia, India, Nepal, Madagascar, and South Africa). These pensions should be set at a level sufficient to alleviate poverty but low enough to minimize incentives to remain outside the formal pension system. The cost of these social pensions, however, can be substantial at about  $\frac{1}{2}$ – $\frac{3}{4}$  percent of GDP (Holzmann, Robalino, and Takayama, 2009; Bosch, Melguizo, and Pagés, 2013).<sup>23</sup> To contain these costs, means-testing could be used.<sup>24</sup> Using social

<sup>22</sup>For instance, Moller (2012) shows that treating pensions like other forms of income in Colombia would reduce the Gini coefficient by 0.20 of a percentage point.

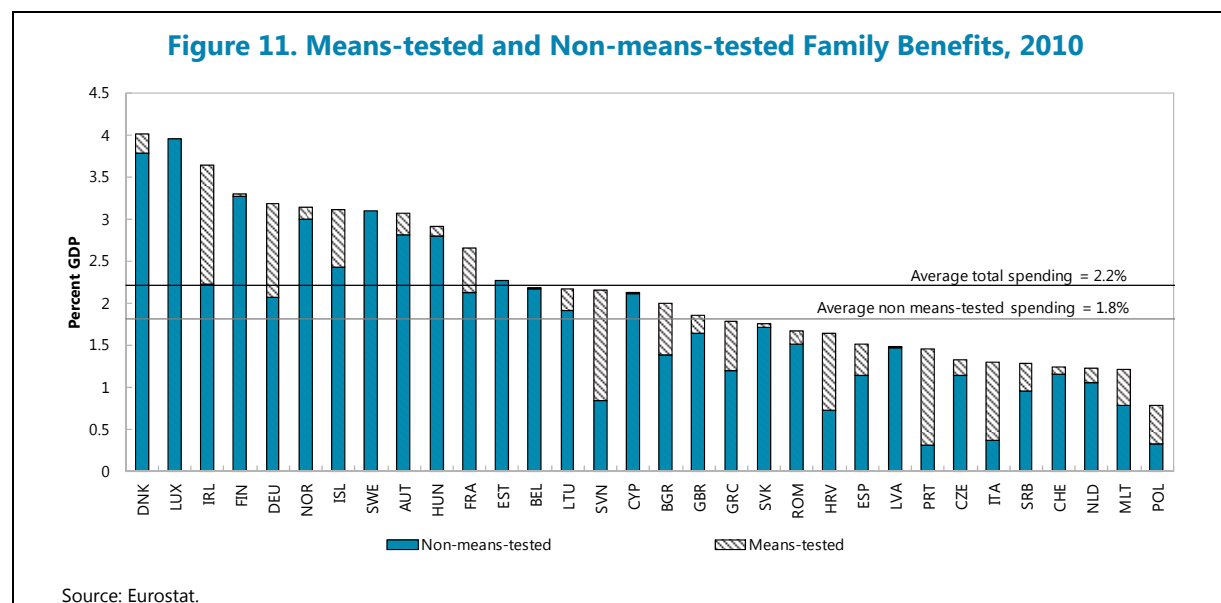
<sup>23</sup>For example, spending on social pensions exceeds  $\frac{1}{2}$  percent of GDP in a number of Latin American countries (Bolivia, Brazil, Chile, Guyana, and Uruguay). South Africa’s *Social Grants Program* includes a means-tested social pension program costing 1.3 percent of GDP.

<sup>24</sup>Based on a pension set at 70 percent of country-specific poverty lines, Kakwani and Subbarao (2005) estimate the cost of a universal pension for everyone over 65 years of age in 15 sub-Saharan African countries to range from 0.7 percent of GDP in Madagascar to 2.4 percent of GDP in Ethiopia. Limiting the pension to only the elderly poor would approximately halve this cost for most countries.

pensions to expand coverage of pension systems is a particularly attractive policy option for low-income countries, given the administrative constraints on expanding earnings-related pensions.

**42. In advanced economies, family benefits can be made more efficient by greater use of means testing and strengthening incentives to return to work.** On average, in 2005, family benefits decreased the disposable income Gini by nearly 1.5 percentage points, accounting for nearly three-quarters of the redistributive impact from total social assistance spending. These benefits include a range of transfers such as paid maternal/paternal leave, child allowances, and childcare benefits. Parental leave schemes, e.g., with a guarantee to young mothers to return to their previous job within a certain time period, can help keep young mothers connected to the labor market. Child benefits facilitate consumption smoothing over the life-cycle by transferring resources to families with children since children increase family needs and can also reduce second-earner incomes. These objectives can be more efficiently achieved by:

- *Means testing and conditioning of child benefits.* High child allowances reduce incentives for women to enter the labor market with detrimental effects for future earnings prospects. Linking benefits to labor force participation (including through childcare subsidies and child tax credits) can strengthen incentives to enter the labor market and decrease welfare dependency (Gong and others, 2010; Kalb, 2009; Elborgh-Woytek and others, 2013). Expanding the role of means testing and including benefits in taxable income within a progressive tax schedule, can make child benefits more progressive and could generate substantial savings given the very small share of these benefits that is currently means tested (Figure 11). Means testing also protects the consumption smoothing role of these benefits since higher income groups have greater consumption smoothing opportunities.



- *Reducing the maximum duration of paid parental leave benefits.* Reducing the maximum duration in countries where it is very long can increase incentives to return to employment—Jaumotte

(2003) found that parental leave has a positive effect on female labor supply up to a limit (20 weeks with full replacement of earnings), above which the marginal effect of further leave becomes negative. Appropriately designed parental leave benefits can also reduce poverty and welfare dependency, since long spells out of the workplace can have detrimental effects on future earnings potential. Capping leave benefits where they are earnings related can also increase benefit progressivity.

Although family benefits are much less common in emerging and low-income economies, they can be incorporated into targeted cash transfer programs through linking benefit levels to household composition as in conditional cash transfer programs (discussed below).

#### **43. Advanced economies could intensify the use of active labor market programs (ALMPs) and in-work benefits to address the work disincentives inherent in means-tested transfers.<sup>25</sup>**

Guaranteed minimum income programs in many advanced economies aim to fill the gap between “needs” and “means.” Although these programs may have only a small impact on inequality, reflecting low aggregate spending, they play a key role in addressing poverty. However, the withdrawal of benefits as individuals return to employment creates strong work disincentives, especially for low-wage workers and families with children.<sup>26</sup> These disincentives can be reduced through:

- *Strict conditioning of eligibility on participation in ALMPs.* In most advanced economies, continued eligibility for benefits is conditioned on participation in ALMPs, including personal employment services, training, job placement, and public employment schemes. Tight activation measures are especially important for containing spending and providing incentives to work.<sup>27</sup> The intensity of activation requirements should increase with unemployment duration to allow an initial period for job search, followed by assistance with job placement and access to training opportunities. Although the strictness of this conditioning has increased over the last decade, there is still significant room for improvements in many countries (OECD, 2012).
- *Greater use of in-work benefits.* Many economies have adopted a system of in-work benefits that allow for the gradual withdrawal of benefits as earnings or employment duration increase (IMF,

<sup>25</sup>Active labor market programs can also help decrease income inequality by increasing the wage received by workers when they return to the labor market (e.g., through training and better job matching). The administrative capacity required to implement these programs means that they are suitable mainly for advanced and a few emerging economies; the low level of social benefits in low-income economies means that disincentive issues are typically much less important.

<sup>26</sup>Virtually all of the disincentives for labor market participation inherent in the tax-benefit system arise from the withdrawal of means-tested benefits (OECD, 2011a). In a study of European economies, Immervoll and others (2007) find that transferring an additional euro from high- to low-income individuals through traditional means-tested transfer programs results in a reduction in the welfare of high-income individuals by EUR 2 to EUR 4 in most economies.

<sup>27</sup>A meta-analysis by Card, Kluge, and Weber (2010) finds that job search assistance programs are most effective at decreasing unemployment over the short term while classroom and on-the-job training are effective in decreasing unemployment over the medium term.

2012a). This reduces the net tax on additional earnings, which can even be negative for low-income groups (Box 6). When combined with effective ALMPs, they can have significant beneficial impacts on employment, inequality, and poverty. Containing the fiscal cost of in-work benefits requires a more rapid withdrawal of these benefits as incomes increase, which may create work disincentives further up the income distribution.

**44. Many developing economies could enhance the effectiveness of their social assistance programs by addressing key design and implementation shortcomings.** This is especially important in countries where social assistance spending is low<sup>28</sup> and has to compete with other growth-enhancing public spending (e.g., on education, health, and physical infrastructure) for scarce revenue resources. Most developing economies rely on a diverse set of poverty alleviation programs, including cash transfers, food or other in-kind transfers, public workfare, fee waivers (e.g., for education and health services), and price subsidies (especially for food and energy). These programs often fall short of their redistributive objectives, and their cost effectiveness could be greatly improved through reforms to address the following shortcomings (Grosh and others, 2008):

- *Fragmentation and duplication.* Many countries have a myriad of small programs with overlapping objectives spread across various ministries with little or no coordination. This increases the fixed administrative costs associated with program implementation.
- *Bad targeting.* Many of the targeting approaches used are badly designed (e.g., based on weak or loosely specified tagging that is not well correlated with poverty). This results in substantial leakage of benefits to non-poor households and increases the fiscal cost of these programs. For example, if social assistance benefits were restricted to those in the bottom 40 percent of the income distribution, the median fiscal savings would be approximately 0.4 percent of GDP.<sup>29</sup>
- *Low coverage and benefits.* The low level of spending spread across numerous small programs with high leakages leads to low coverage of the poor and low benefit levels. The savings from better targeting of benefits (see bullet above) could be used to expand coverage from the present median of 38 percent to 82 percent.<sup>30</sup>
- *Reliance on costly in-kind benefits.* Some countries spend significant amounts on food distribution programs which are prone to large leakages (including due to theft and wastage)

<sup>28</sup> Spending on social assistance is especially low in low-income countries in the Asia and Pacific region and in sub-Saharan Africa (see Figure 8).

<sup>29</sup> Staff estimates based on benefit incidence data from the World Bank ASPIRE database and data on current levels of social assistance spending in emerging and low-income economies. The median share of social assistance transfers accruing to the bottom 40 percent of the income distribution is 46 percent, while the median level of social assistance spending was 0.76 of a percent of GDP. Eliminating all leakage of benefits to the top 60 percent of the income distribution (i.e., 54 percent of total spending) would therefore reduce spending by 0.41 percent of GDP.

<sup>30</sup> Staff estimates based on World Bank ASPIRE database. The scale factor is calculated as  $[1+(1-B)/B]$  where B is the share of benefits accruing to the bottom 40 percent of the income distribution. The estimates implicitly assume that all beneficiaries receive the same benefit level.



and involve large overhead costs. Overhead costs can be as much as 50 percent higher than the value of the in-kind benefit to beneficiaries (Grosh and others, 2008).

- *Reliance on universal price subsidies.* Some countries spend substantial amounts on universal price subsidies, especially for food and energy (IMF, 2008; Clements and others, 2013). In sub-Saharan Africa, for example, spending on energy subsidies in 2011, on a post-tax basis, equaled 3½ percent of GDP, and in the MENA region, 14½ percent of GDP.<sup>31</sup> Reflecting the overall inequality of consumption, most of the benefit from these subsidies accrues to higher income households. For example, the richest 20 percent of the population reaps about 43 percent of the benefits from energy subsidies in developing economies, while the poorest 20 percent receive 7 percent (Arze del Granado, Coady, and Gillingham, 2012).

While these shortcomings are present in both emerging and low-income countries, they are typically more pronounced in the latter. Consolidation of benefits into a smaller number of programs with clearly established objectives will help reduce the cost of these programs and improve efficiency. Together with improved targeting and the scaling down of price subsidies, this will enhance the poverty impact of existing spending and create the fiscal space to finance the development of more effective safety net programs with expanded coverage and adequate benefit levels. A recent review of safety nets in Africa, for instance, finds that these have expanded in a number of countries (e.g., Ghana, Kenya, Mozambique, Rwanda, and Tanzania) in the wake of recent economic crises and are evolving from fragmented programs to a more integrated social safety net (Monchuk, 2014).

#### **45. Means-tested conditional cash transfer (CCT) programs could be expanded as a tool to achieve distributional objectives in developing economies as administrative capacity improves.**

The last decade has witnessed the proliferation of means-tested CCT programs (especially in Latin America) that link family benefits to the number of children and condition continued eligibility on attendance of children at health clinics and school (Box 7). In many countries, these programs have been used to consolidate a number of existing programs to reduce administrative costs and improve effectiveness.<sup>32</sup> Means-testing has helped to reduce the fiscal cost of these programs. The largest such programs are in Brazil (*Bolsa Familia*) and Mexico (*Oportunidades*), which in 2012 cost 0.5 percent of GDP and 0.8 percent of GDP and covered one-quarter and one-fifth of the population, respectively. These programs have had substantial impacts on poverty and inequality, as well as education and health outcomes (Fizbein and Schady, 2009). For instance, the direct impact of such transfers in Brazil and Mexico accounts for one-fifth of the decrease in the Gini between 1995 and 2004 in these two countries (Soares and others, 2007). In addition, these programs indirectly affect the inequality of market incomes over time by decreasing the inequality of education outcomes. However, since they require adequate administrative capacity

<sup>31</sup> Post-tax subsidies are also substantial in advanced economies. Of the global total of US\$2.0 trillion in 2011, advanced economies account for about a third (Clements and others, 2013).

<sup>32</sup> In Mexico, for instance, the CCT program was financed by eliminating food subsidies. Coady and Harris (2004) estimate that, in addition to the gains from better targeting, the elimination of price subsidies generated substantial efficiency gains equivalent to MEX\$38 for MEX\$100 pesos spent on the program.



to implement means-testing and monitor conditionality, as well as ensuring that the targeted poor populations have access to basic education and health services, they are more suitable for emerging than low-income economies. For this reason, many countries in sub-Saharan Africa (e.g., Burkina Faso, Liberia, Madagascar, Malawi, Niger, and Tanzania) and Asia (e.g., Bangladesh, Cambodia, India, Indonesia, Pakistan, and the Philippines) are first adopting these programs on a pilot basis before gradually expanding them nationwide (Fiszbein and Schady, 2009; Garcia and Moore, 2012; Monchuk, 2014).

### Box 7. Conditional Cash Transfer Programs

**Conditional cash transfer (CCT) programs are becoming widespread among developing economies.**

These programs target cash transfers at poor households, with the level of transfer depending on the number, age and gender of children in a household. Selection of beneficiary households is often done through the use of “proxy means tests,” which attach a poverty score to households based on household characteristics that are correlated with poverty. Continued eligibility, typically over a three year period, is conditioned on children attending and progressing through school and attending health clinics. These programs have often been financed through the scaling down of fiscally costly universal price subsidies and the savings from consolidating many disparate programs under a single umbrella. Similar programs have also been used in some advanced economies (e.g., means-tested education stipends conditioned on education performance in the United Kingdom. and targeted education and health subsidies in New York city).

**Evidence shows that CCT programs have had very large impacts on poverty as well as on education and health outcomes.** These programs are among the best targeted in developing countries, which has led to substantial impacts on current poverty and without any significant adverse adult labor supply effects. The conditioning of transfers has resulted in significant increases in school and health clinic attendance as well as improvements in diet and education and health outcomes. Transfers also allow households to avoid inefficient responses to cope with economic shocks (e.g., by withdrawing children from school, delaying health care, and selling assets at low prices), and allow governments to generate political support for structural reforms by increasing transfer levels to mitigate the adverse impacts of reforms on the poor. There is also evidence that the use of cash transfers helps address short-term liquidity constraints resulting in increased investments in human and physical capital that help break the inter-generational transmission of poverty.

**CCT programs are administratively intensive and may require complementary investment in health and education facilities to be successful.** Countries need to have the capacity to design and implement effective targeting mechanisms, as well as to deliver cash transfers nationwide. A capacity to continuously monitor compliance with conditions is also necessary. Where physical access to schools and health clinics are a problem, prior investments in improving access and ensuring quality services is needed to generate education and health benefits. The administrative capacity to recertify beneficiaries over time is also required.

Sources: Grosh and others (2008) and Fiszbein and Schady (2009).

**46. In developing economies, to be cost effective, public works programs could be designed to encourage self-selection of the poor, which can reduce the fiscal costs and avoid crowding out private sector jobs.** These programs play an important role in both low- and middle-income economies in addressing persistent or seasonal poverty as well as protecting households from income shocks, with large programs having been implemented in Argentina, Botswana, Ethiopia, India, and Rwanda (Subbarao and others, 2013). These programs have been successfully

implemented in a range of settings, including in the wake of natural disasters and economic crises as well as in post-conflict states, although the precise design needs to reflect the differing administrative capacities in emerging and low-income countries. Setting wages below those prevailing in the market for unskilled labor can help ensure that these programs are “self targeted” and will only attract those without other opportunities. This also allows for the automatic scaling down of programs in the aftermath of a crisis as higher wage job opportunities expand. These programs should be timed to avoid coinciding with peak employment seasons (for example, during agricultural harvests) to prevent crowding out private sector jobs. Emerging economies with greater administrative capacity can also enhance the developmental role of these programs through greater emphasis on the infrastructure and training components of these programs.

**47. Unemployment benefits can be designed to strengthen incentives to take-up employment.** Unemployment benefits play a key role in advanced economies in protecting individuals from loss of income due to transitory or structural unemployment.<sup>33</sup> However, these programs, if not well designed, can adversely affect employment incentives and outcomes (Meyer, 2002; Abbring, van den Berg, and van Ours, 2005; OECD, 2006). By increasing work incentives, efficient benefit design can reduce spending while also decreasing income inequality, since benefits are typically below wages. This can be achieved through a number of design features, including:<sup>34</sup>

- *Strict eligibility criteria.* Tightening eligibility rules (e.g., based on past employment and contributions or mandatory participation in ALMPs) reduces fiscal cost by incentivizing the return to employment or channeling more of the unemployed to social assistance with lower benefits.
- *Short duration.* Lowering the maximum duration of benefit eligibility can expedite the return to employment or the transition to social assistance. About a third of OECD countries have a maximum duration in excess of 12 months.<sup>35</sup>
- *Declining benefit levels.* Reducing replacement rates with unemployment duration provides strong incentives to return to employment. The desired generosity of benefits can be achieved through various combinations of benefit level and duration.
- *Individual unemployment savings accounts (ISAs).* Increased use of these accounts could help to reduce the distortionary impact of contributions by strengthening the link with benefits received

<sup>33</sup>Reflecting high levels of informality and weaker administrative systems, few developing economies have unemployment insurance or assistance programs and, where they exist, they often have very low levels of coverage (Robalino, Rawlings, and Walker, 2012).

<sup>34</sup>Such reforms have contributed to a substantial decline in unemployment in Germany. Over the past decade, Germany has implemented wide-ranging labor market reforms, including improving job search efficiency, raising work incentives, and fostering labor demand (Jacobi and Kluve, 2006; Hüfner and Klein, 2012).

<sup>35</sup>Maximum duration is often increased temporarily during prolonged recessions; these temporary measures are not included in the duration numbers.

and could also facilitate the expansion of unemployment insurance schemes in developing economies with large informal sectors. For example, under this system, part of the unemployment insurance contribution could be credited to an individual account on which a person receives interest (Bovenberg and others, 2012). During a period of unemployment, individuals can draw money from their account. Once the account is exhausted, individuals can borrow from the government at the same interest rate. Individual accounts are used in a number of emerging economies, including Brazil and Chile (Hijzen and Venn, 2011).

**48. Education reforms in both advanced and developing economies could focus on improving access by low-income groups.**<sup>36</sup>

The regressive benefit incidence of education spending in developing economies reflects lower access by low-income groups to higher levels of education (including upper secondary and tertiary education). In advanced economies, although education spending as a whole is progressive, tertiary education spending tends to be regressive. This lack of access to education in both developing and advanced economies also results in inequality of opportunity and perpetuates inequality across generations. A range of spending reforms focused on improving access can help to enhance the distributional impact of education spending, including:

- *Increasing investment in lower levels of education.* The main driver behind the regressivity (or lower progressivity) of public education spending is the large share of the budget allocated to higher levels of education, which are disproportionately accessed by higher income groups. Lack of access for lower income groups to higher levels is primarily due to lack of progress through lower education levels. In developing economies, this requires improving access to and progression through primary and lower-secondary education, especially for girls and in rural areas. In advanced economies, this requires improving access to, progression through, and performance in higher-secondary and tertiary education. Increasing access to early childhood education is required in both advanced and developing economies, especially given the substantial evidence that this has a crucial impact on education performance at higher levels.
- *Improvements in the efficiency of education spending.* Increased spending on education at lower levels should be complemented by efforts to get better results from existing levels of spending. Inefficiencies in spending are substantial, including in low-income economies (Gupta and others, 2007; Grigoli, forthcoming).
- *Increased cost recovery in tertiary education.* Demand for tertiary education has increased rapidly in both advanced and developing economies, and often faster than public financing capabilities. This has resulted in a decline in the quality of instruction in public institutions and a growth in private education institutions (Woodhall, 2007; OECD, 2011b). Since much of the benefit from tertiary education accrues to graduates in the form of higher earnings and other non-monetary benefits, there is a strong case for financing more of this cost from tuition fees. Income-

<sup>36</sup>See OECD (2010), Hanushek and Woessmann (2011), and Pritchett (2013) for more detailed discussion.

contingent student loans to cover tuition and subsistence costs allow students to begin paying off their loans once they start earning, ensure that higher education is free at the point of use, and provides insurance against the inability to repay due to low future income (Barr, 2012). Increasing private financing also allows tertiary education to expand without increasing public spending.

- *Targeted conditional cash assistance.* As discussed above, targeting cash assistance to those with disadvantaged access to education, and conditioning this assistance on certain education outcomes, can help to reduce income barriers to education and incentivize improved education achievement. This “conditional cash transfer” strategy is being increasingly used in both advanced and developing economies (Box 7). Additional complementary reforms may also be necessary, such as targeted information campaigns and increasing availability of shorter term qualification options.

**49. In developing economies, a focus on universal access to a basic package of health services would result in substantial improvements in health outcomes, especially among the poor, and enhance the progressivity of public health spending.** The regressivity of public health care spending in many developing economies reflects lack of access by poor groups due to income and supply-side barriers. This can be addressed through the following policy measures:

- *Expanding health coverage to low-income households.* Access to a broad package of essential health services (including primary care) is still incomplete in many developing economies. As a consequence, the poor often forgo or delay necessary care at an early stage of illness when treatment is more cost effective. Many households fall into poverty because of high out-of-pocket spending and many others are just one major illness away from poverty. Access to health care can also provide financial protection to households from catastrophic illnesses, which can free up households from the need to accumulate unproductive precautionary savings. A recent Lancet Commission report (Jamison and others, 2013) emphasizes the importance of a fiscally sustainable, publicly financed basic health package covering essential health care, which would disproportionately benefit the poor and enhance the progressivity of public health spending.
- *Reducing or eliminating user charges for low-income households.* Health services outside the affordable basic package could be financed by a mix of public and private mechanisms, including insurance contributions, fees and copayments. However, out-of-pocket spending under the typical health insurance plan may still be too high for low-income households. To further improve the affordability of health care it may be necessary to reduce or eliminate user charges for certain groups. In particular, preventive care, such as immunizations, should be offered free of charge given their large social benefits. In addition, linking utilization of preventive care to eligibility for other social benefits (Box 7) could help increase coverage among low-income households.
- *Addressing supply side barriers in less developed areas.* Since many low-income households reside in less developed areas or neighborhoods, availability of health care facilities and health care professionals, in particular of those with similar quality as in more affluent areas, can be a

major barrier to access. This may require public provision of health care as the last resort or additional incentives for service provision by private providers in these areas.

- *Improving efficiency.* Between 20 and 40 percent of the resources spent on health are wasted (WHO, 2010). The inefficiencies in health spending in both emerging and low-income economies suggest that there is ample room to improve health care outcomes, including for the poor, through increasing the efficiency of existing spending (Clements, Coady, and Gupta, 2012).

**50. In advanced economies, maintaining the access of the poor to health care services during periods of expenditure constraint is consistent with efficient redistribution.** Public health care spending is a large share of total public spending and is projected to rise by almost 3 percentage points of GDP between 2013 and 2030 (Clements, Coady, and Gupta, 2012; IMF, 2013b). Health care reforms to curb the growth of spending will be a necessary component of many countries' fiscal adjustment plans. Some of these reforms could take the form of an increase in cost-sharing with the private sector, for example through increased co-payments, or a reduction in the scope of services provided by the public sector. These reforms could be designed to ensure that the poor maintain access to services, for example, by exempting them from co-payments.

## C. Tax Design

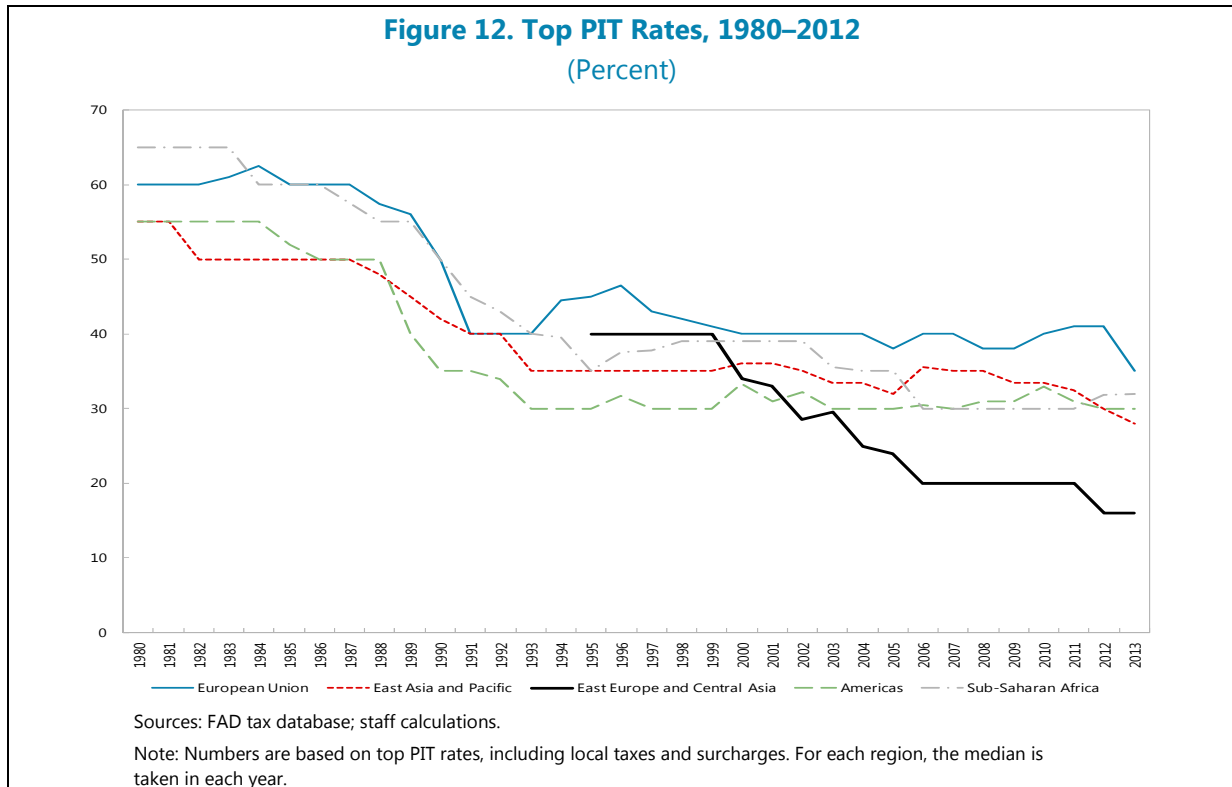
**51. While the primary contribution of taxation to the pursuit of equity goals is through financing spending measures, they can also in themselves efficiently contribute to achieving redistributive goals.** Previous sections have shown that the mix of direct and indirect tax instruments, as well as the details of their design and other tax policies, have important distributional implications. Tax structures were seen to vary significantly across advanced and developing economies, reflecting different stages of development and administrative capacities.<sup>37</sup> The redistributive role of taxation depends on the progressivity of income-related taxes (including not just personal income tax (PIT) but also, in particular, means-tested transfers), the taxation of capital income and wealth that are concentrated among the better off, and the design of indirect taxes. This section explores how such tax policies could be designed, looking in turn at income taxes (on wages, capital income, and business income), wealth taxes (including those on property, transactions, and inheritances) and consumption taxes.

**52. Many advanced and developing economies can achieve their redistributive objectives more efficiently through increasing the progressivity of their tax and transfer systems.** These include the PIT, social contributions, as well as negative income taxes and targeted transfer schemes, which were discussed in the previous section. In developing economies, the main challenge is to develop a better-functioning PIT system that helps increase tax ratios.<sup>38</sup> In advanced economies,

<sup>37</sup> See IMF (2011) for a more detailed account of options for revenue mobilization in developing economies.

<sup>38</sup> The PIT generally raises between 1 and 3 percent of GDP in developing economies compared to between 9 and 11 percent of GDP in advanced economies. In the former group, less than 5 percent of the population pays PIT and less than 15 percent of the income is reached by it. In some developing countries, however, the PIT raises more than 5 percent of GDP, such as in Georgia, Malawi, Namibia, Papua New Guinea, South Africa, and Swaziland.

more progression can be achieved through reform of PIT rate schedules, reducing exemptions, and by setting sufficiently high thresholds.



- Implementing progressive PIT rate structures can contribute to reducing inequality.* The median top PIT rate (based on a large group of economies across the globe) dropped from 59 percent in 1980 to 30 percent today (Figure 12). Since the mid 1990s, 27 countries—especially in Central and Eastern Europe and Central Asia—have introduced flat tax systems, usually with a low marginal rate. These regimes are typically less redistributive than those with stepwise increasing PIT rates, especially for top incomes.<sup>39</sup> In these and other economies with relatively low top PIT rates—or in economies where the top PIT bracket starts at a relatively high level of income<sup>40</sup>—there may be scope for more tax progression at the top. Note, however, that behavioral distortions impose an upper limit as to how far these top PIT rates can be increased. For instance, IMF (2013b) finds that revenue-maximizing PIT rates are probably somewhere between 50 and 60 percent—and optimal rates probably somewhat lower than that, depending on the welfare weights assigned to the rich (Box 5).

<sup>39</sup> Many flat tax reforms since the 1990s have come along with an increase in the exemption threshold. Together with a lower top PIT rate, this caused a shift in the tax burden from the (very) low and (very) high incomes towards the middle (Keen and others, 2008).

<sup>40</sup> In the OECD, the top PIT bracket starts at more than five times the average wage in Chile, Germany, Greece, Portugal, and the United States, but at less than 1.5 times that in Belgium, Denmark, Luxembourg, and the Netherlands (Torres, Mellbye, and Brys, 2012).

- *Raising progressivity also requires reconsideration of tax deductions.* Many economies—including developing ones—adopt various tax allowances in their PIT related to children, education, housing, health insurance, commuting and charitable donations. Some accrue disproportionately to the rich, such as deductions for mortgage interest. This is because households with high incomes are more often homeowners, and tax relief is often granted in the form of deductions, which are worth more at higher marginal tax rates. Rationalizing mortgage interest deductibility could complement steps towards a more progressive tax system and also improve efficiency, since these deductions create their own distortions (IMF, 2009). More generally, tax expenditures of this kind often come along with significant revenue losses. In many countries, these might not be subject to the same public scrutiny as ordinary public spending, especially when the governments does not publish a tax expenditure review. Tax expenditures should undergo to the same cost-benefit analysis as spending measures. Some, but not all, tax deductions might well be justified on the basis of their implications for equity and efficiency, such as deductions for charitable giving (Appendix I).
- *Reforming the PIT threshold can, in some cases, enhance tax progression.* A threshold—either in the form of a zero-tax bracket, a basic deduction or a general tax credit—supports tax progression by reducing or eliminating the tax burden on people with the lowest incomes. Thresholds vary significantly across economies.<sup>41</sup> In the OECD, the median is approximately 25 percent of the average wage. Several emerging and developing economies, however, have no threshold at all (USAID, 2013) and introducing one could relieve the poorest households from the obligation (often more in principle than practice) to pay tax and ease administration. However, the threshold should not be too high, as this can lead to greatly reduced revenues. In 16 developing economies, for instance, the threshold exceeds two times GDP per capita. This contributes to the small coverage of the PIT and a low revenue yield, thus undermining redistributive income taxation. Note also that tax credits are in principle more progressive than tax deductions, since the value of a credit does not depend on the marginal tax rate faced by the taxpayer, as is the case with a deduction.<sup>42</sup>

**53. Taxes on capital income can strengthen the progressivity of the tax system, but high rates can have substantial efficiency costs.** Taxpayers who save and invest are generally among the better off, so even a proportional tax on capital income can increase progressivity. Moreover, taxing capital income is necessary to mitigate arbitrage in the taxation of entrepreneurial income, as it is often difficult (or even impossible) to distinguish labor from capital income earned by the owner-directors of a firm. The latter makes it important to broadly harmonize the rates of the PIT and the combined burden of Corporate Income Tax (CIT) and dividend/capital gains taxation. However, capital income taxes, if too high, can have high efficiency costs because of their

<sup>41</sup>Some economies also have thresholds for the payment of social security contributions. While adding to the progression of the tax system, this can undermine the benefit principle that underlies social security systems.

<sup>42</sup>With a tax deduction (D), tax due is  $t(Y-D)$ , where Y is income and t the tax rate. With a tax credit (C), tax due is  $tY - C$ . Hence, the difference is that the value of a deduction depends on the marginal tax rate faced by the taxpayer, whereas the value of a tax credit is the same for all taxpayers.



distortionary effects on savings and investment.<sup>43</sup> Moreover, it can be administratively difficult to tax capital in light of its mobility, with the latter leading to ample evasion and avoidance opportunities. In addition the mobility of capital allows firms to shift a large share of the burden of these taxes onto labor, as discussed earlier. To strike the right balance between equity and efficiency, governments could consider the following options:

- *Tax different types of capital income in a neutral way.* Capital income is generally taxed at both corporate and personal levels.<sup>44</sup> However, interest is usually deductible for the CIT (whereas the return to equity is not). In addition, some investors or investments are PIT-exempt, and different types of capital income often face different PIT rates. As a result, interest is often lightly taxed and dividends highly taxed, especially when compared with the taxation applied to capital gains. This gives rise to arbitrage and leads to behavioral changes that erode the capital tax base and create economic distortions, as well as leading to horizontal inequity—referring to the unequal taxation of individuals with similar incomes and assets.
- *Consider a lower effective rate on capital income than labor income.* Several economies impose a lower overall tax rate on capital compared to labor income. For example, this is found in dual income tax systems where capital income is separated from labor income and taxed at a uniform and relatively low rate (Cnossen, 2000; Sorensen, 2005). Some economies also give targeted relief for the normal return on capital through an allowance at either the corporate level (such as Belgium and Italy) or the personal level (such as Norway).
- *Adopt withholding taxes, especially if administration is weak.* Taxing capital income at the individual level can be administratively challenging. This provides a rationale for taxing these incomes through withholding at the level of the firm, i.e., the CIT. In countries with weak administrations, withholding taxes on interest and dividends can, to some extent, further circumvent administrative difficulties. Some Latin American countries also impose withholding taxes on capital gains at source.
- *Develop more effective taxation of multinational business income.* Multinationals use a variety of tax-planning strategies to reduce their global tax liabilities, leading to profit shifting and base erosion. This poses challenges to both advanced and developing economies, and is particularly acute in the latter in light of their greater reliance on CIT receipts. In light of this global challenge, the OECD has begun a two-year action plan on “Base Erosion and Profit Shifting” (BEPS) to address some of these challenges (OECD, 2013). The IMF has work underway, aimed to identify appropriate policy responses, including unilateral and multilateral initiatives (IMF, 2013c).

<sup>43</sup>Some studies, however, find that taxes on capital are efficient, see e.g., Golosov, Kocherlakota, and Tsyvinsky (2003). For an overview of the efficiency argument for positive capital income taxes, see Jacobs (2013).

<sup>44</sup>Some economies adopt imputation systems to mitigate double taxation of dividends. However, many have abolished these systems over the past decades due to international complications and, in Europe, due to rulings by the Court of Justice.



- *Automatically exchange information internationally.* This has been announced by the G20 as the new global standard and can enable economies to more effectively impose residence-based capital income taxes by mitigating international tax evasion and avoidance (Keen and Ligthart, 2005). There has been some progress in this regard, led by the OECD's Global Forum on Transparency and Information Exchange. Unilateral measures are also proceeding, notably the U.S. Foreign Account Tax Compliance Act (FATCA), which envisages penalties for non-compliance. For developing economies, however, this imposes a formidable administrative challenge that might have to compete with more urgent priorities.

**54. Some taxes levied on wealth, especially on immovable property, are also an option for economies seeking more progressive taxation.** Wealth taxes, of various kinds, target the same underlying base as capital income taxes, namely assets. They could thus be considered as a potential source of progressive taxation, especially where taxes on capital incomes (including on real estate) are low or largely evaded. There are different types of wealth taxes, such as recurrent taxes on property or net wealth, transaction taxes, and inheritance and gift taxes. Over the past decades, revenue from these taxes has not kept up with the surge in wealth as a share of GDP (see earlier section) and, as a result, the effective tax rate has dropped from an average of around 0.9 percent in 1970 to approximately 0.5 percent today. The prospect of raising additional revenue from the various types of wealth taxation was recently discussed in IMF (2013b) and their role in reducing inequality can be summarized as follows.

- *Property taxes* are equitable and efficient, but underutilized in many economies. The average yield of property taxes in 65 economies (for which data are available) in the 2000s was around 1 percent of GDP, but in developing economies it averages only half of that (Bahl and Martínez-Vázquez, 2008).<sup>45</sup> There is considerable scope to exploit this tax more fully, both as a revenue source and as a redistributive instrument, although effective implementation will require a sizable investment in administrative infrastructure, particularly in developing economies (Norregaard, 2013).
- *Recurrent taxes on net wealth* generally raise little revenue. Financial wealth is mobile and taxes hard to enforce because they are easily evaded. Few advanced economies today have recurrent taxes on broad measures of net wealth and, where they exist, revenue is typically low. More effective exchange of information across economies could help mitigate evasion and improve the prospect for net wealth taxes to increase revenue yields. If so, they can have some appeal as an instrument to reduce wealth inequality and support equality of opportunity.<sup>46</sup>

<sup>45</sup>Outside of the advanced economies, Colombia, Namibia, Russia, South Africa, and Uruguay collect more than 1 percent of GDP through recurrent property taxes.

<sup>46</sup>Recurrent taxes on net wealth are different from levies that are one-off. The latter come along with significant risks of economic distortions and have almost never been successful at raising revenue (Eichengreen, 1989). See also the IMF blog "Once and for all—Why capital levies are not the answer," <http://blog-imfdirect.imf.org>.

- *Taxes on inheritances and gifts* could play a useful role in limiting inter-generational inequality, which as noted earlier is high in many economies, and strengthening equality of opportunity (Boadway, Chamberlain, and Emmerson, 2010). However, where they exist, rates are generally low, exemptions and special arrangements widespread, and revenue yields small. In the OECD, revenue has been declining over time from 0.35 percent of GDP in 1970 to less than 0.15 percent today. There may be more potential, which is illustrated by, for example, France and Belgium where revenue yields are, respectively, 0.4 and 0.65 percent of GDP.
- *Transaction taxes on property and financial assets* are administratively appealing, since transactions can often be easily observed and administered. However, these taxes are economically distortive, as they impede otherwise mutually beneficial trades. Transaction taxes on real estate can thus reduce labor mobility and raise unemployment. Financial transaction taxes (FTT) have been much discussed recently, including in the EU where 11 member states have plans to introduce a broad-based FTT. Yet, FTTs can have significant social costs due to cascading effects (tax levied on tax), increasing costs of capital, encouraging avoidance schemes, and potentially impeding socially worthwhile transactions. Moreover, their distributional impact is unclear as the incidence may be shifted onto consumers (Matheson, 2012).

**55. Consumption taxes are generally inferior for achieving redistributive objectives**

**compared to income-related taxes and transfers.** As shown earlier in the paper, the VAT is generally regressive in advanced economies—at least when assessed against current income rather than current consumption—while it is often found to be progressive in developing economies (Bird and Gendron, 2007). Also excises tend to bear relatively more heavily on people with low incomes in advanced economies (Clossen, 2005), while this is not generally so in developing economies.<sup>47</sup> Regarding the design of indirect taxes, the following recommendations apply.

- *Minimize the use of exemptions or reduced VAT rates.* Exemptions or reduced rates on necessities, such as food or energy, are often used to mitigate the regressive impact of the VAT in advanced countries, as expenditure shares of these goods are generally higher for the poor. However, such policies are blunt redistributive instruments, because the rich generally spend more in absolute terms on these goods and thus enjoy significant benefits. Advanced economies usually have access to better instruments to help the poor and vulnerable, such as targeted transfers and progressive PIT systems. For instance, elimination of reduced VAT rates in the United Kingdom, and using the proceeds to increase social benefits, is found to significantly reduce inequality while also boosting revenue (Crawford and others, 2010). In developing countries, exemptions and special VAT rates should also be minimized, as they erode the revenue base and reduce the opportunity to finance redistributive spending. Indeed, even poorly targeted public spending is generally better for the poor than reduced VAT rates (Keen 2014). For instance, in Ethiopia, the net impact of a uniform VAT with the proceeds used for general spending on education and

<sup>47</sup>The regressivity of excises on cigarettes is smaller, however, when consumers of cigarettes have time-inconsistent behavior. Excises will then correct for the lack of self-control, yielding private benefits to consumers, which mitigates the regressive impact of the tax (Gruber and Koszegi, 2001).

health is found to have a strong progressive impact (Munoz and Cho, 2004). However, where capacity constraints prevent spending programs from reaching the poor, the case for some differentiation in VAT rates, e.g., for basic food items, can be strong.

- *Set a sufficiently high VAT registration threshold.* Small traders bear a significant compliance burden of the VAT, which they would likely partly pass on to consumers in the form of higher prices (Ebrill and others, 2001). A threshold aims to reduce the compliance cost of VAT for small traders while, at the same time, the revenue foregone is typically not much higher (or even lower) than the cost of collection. A threshold can also strengthen the progressivity of the VAT by reducing the tax on small traders in rural areas where VAT compliance is particularly problematic. In the Dominican Republic, for instance, a VAT threshold has been found to have a strong pro-poor effect (Jenkins, Jenkins, and Kuo, 2006).
- *Use specific excises mainly for purposes other than redistribution.* Specific excises on cigarettes, alcoholic beverages, gambling, and motor fuels should rather be viewed as corrective tools designed to alter individual behavior in a way that is socially desirable. For example, greater taxation of energy (including through carbon taxation) can help address carbon emissions and various local pollution externalities and generate a significant amount of revenue. While low-income groups would nevertheless suffer a decline in real incomes with rising energy prices, mitigating measures targeted to lower-income groups could be introduced to offset any undesired effects on income distribution (Metcalf, 2007; Clements and others, 2013). Special excises on luxury goods, such as yachts, jewelry or perfumes usefully contribute little to achieving equity objectives, raise little revenue, and add to administrative costs, perhaps with the exception of taxes on motor vehicles.

**56. Tariffs have unclear implications for inequality.** Trade tariffs are responsible for a significant public revenue share in developing economies. In sub-Saharan Africa, for instance, this is about one quarter. Tariff revenue is, however, declining in light of trade liberalization. The distributional impact of tariffs is not quite clear. How the lowering of tariffs will impact inequality will also depend on whether and how countries will be able to recover the lost revenue through other domestic revenue sources (IMF, 2011).

## D. Summary

**57. Table 1 provides an overview of fiscal policy measures that can help achieve more efficient redistribution in advanced and developing economies.** The appropriate mix of tax and spending instruments will depend on administrative capacity, as well as preferences for redistribution, the envisaged role for the state, and political economy considerations. The precise combination of policies should also be guided by the general principles outlined in the conceptual framework described earlier. In this light, Table 1 should be interpreted as providing a menu of policy options that would need to be examined further on a country-specific basis. The measures could be implemented as part of long-term fiscal reforms aimed at achieving redistributive objectives more efficiently. Or they could be integrated into the design of fiscal consolidation strategies that aim to achieve redistributive goals at lower fiscal cost (see next section). The

identified measures include some innovative policies that have not been widely implemented, including increased use of carbon taxes in energy pricing and of property taxation.

**Table 1. Summary: Fiscal Reform Options for Efficient Redistribution in Advanced and Developing Economies**

|  | Advanced | Developing |
|--|----------|------------|
| <b>Social Spending</b>   |          |            |
| Improve fiscal sustainability of existing pension systems through increasing statutory retirement ages   | X        | X          |
| Tighten link between contributions and benefits  |          | X          |
| Expand noncontributory means-tested social pensions  |          | X          |
| Expand means-testing of family benefits with stronger link to work                                       | X        |            |
| Intensify use of Active Labor Market Programs (ALMPs) and in-work benefits for social benefit recipients | X        |            |
| Develop unemployment savings accounts  |          | X          |
| Consolidate social assistance programs and improve targeting   |          | X          |
| Replace general price subsidies with targeted transfers  | X        | X          |
| Expand conditional cash transfer programs as administrative capacity improves                            |          | X          |
| Improve design of public works programs as a safety net instrument                                       |          | X          |
| Improve access to education of low-income families   | X        | X          |
| Increase private financing of tertiary education   | X        | X          |
| Maintain access of low-income groups to essential health services  | X        |            |
| Expand coverage of publicly financed basic health package  |          | X          |
| <b>Taxation</b>  |          |            |
| Implement progressive Personal Income Tax (PIT) rate structures  | X        | X          |
| Relieve low-wage earners from tax or social contributions  | X        |            |
| Expand coverage of the PIT   |          | X          |
| Reconsider income tax exemptions, based on a critical tax-expenditure review                             | X        | X          |
| Impose a reasonable PIT exemption threshold  |          | X          |
| Tax different types of capital income in a neutral manner  | X        |            |
| Develop more effective taxation of multinationals  | X        | X          |
| Automatically exchange information internationally   | X        | X          |
| Utilize better the opportunities for recurrent property taxes  | X        | X          |
| Examine scope for more effective taxes on inheritances and gifts   | X        |            |
| Minimize VAT exemptions and special VAT rates  | X        | X          |
| Set a sufficiently high VAT registration threshold   | X        | X          |
| Use specific excises mainly for purposes other than redistribution                                       | X        | X          |

## FISCAL CONSOLIDATION AND INEQUALITY

**58. The large fiscal consolidations underway in a number of economies have raised concerns about their potential impact on inequality.** This is reflected in the increased public support for redistribution since 2008, in particular in countries where the crisis hit the hardest

(Box 2). Equity considerations become even more relevant during periods of consolidation, as they can influence the political sustainability of fiscal adjustment (Cournède and others, 2013; IMF, 2013b).

## A. Advanced Economies

**59. Fiscal consolidation can affect income inequality through its impact on the distribution of both market and disposable income.** Fiscal consolidation typically leads to a short-run reduction in output and employment, which is often associated with a decline in the wage share.<sup>48</sup> This tends to increase market income inequality, given the relatively high share of wages in the incomes of lower-income groups (Jenkins and others, 2011). Increasing unemployment also tends to widen wage inequality, since unskilled wages fall relative to skilled wages as employers hoard skilled labor (Mukoyama and Sahin, 2006). The duration and magnitude of these effects depend on the size of automatic stabilizers, as well as the growth response and its impact on employment. If multipliers are especially high during downturns (Jordà and Taylor, 2013), fiscal contraction can have a strong effect on employment. These effects may be long-lasting if a prolonged period of slow growth has adverse effects on the supply side of the economy (Aghion and others, 2009).<sup>49</sup>

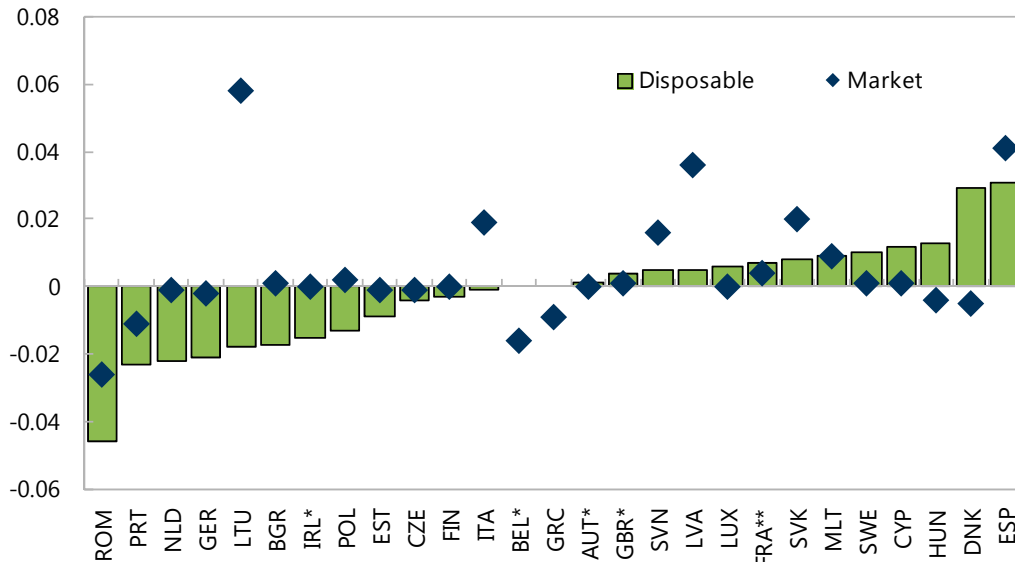
**60. The composition and pace of fiscal consolidation influence its impact on inequality.** Beyond its effects on market incomes, fiscal consolidation also affects the level and composition of taxes and spending and thus disposable incomes. Income inequality tends to increase the more fiscal adjustment relies on raising regressive taxes and cutbacks in progressive spending. Econometric studies find that fiscal consolidations based on spending cuts worsen inequality by more than revenue-based ones (Ball and others, 2013; Woo and others, 2013; Agnello and Sousa, 2012). Frontloaded adjustments can have especially strong effects on social welfare if they are implemented when unemployment is already high (Blanchard and Leigh, 2013).

**61. Evidence from recent fiscal consolidation episodes suggests that a progressive mix of adjustment measures can significantly help offset the adverse effects of adjustment on inequality, though the consolidation may still lead to reduced incomes for the poor in the short term.** An analysis of 27 recent adjustment episodes in advanced economies and emerging Europe suggests that, in about half of these economies, market income inequality increased during fiscal consolidations. However, in many cases, the increase was muted by the design of adjustment measures. In almost two-thirds of the economies, fiscal measures led to either a decrease in inequality (a decline in the Gini coefficient for disposable income) or at least partly offset the effect of a worsening of market inequality (Figure 13).

<sup>48</sup>If fiscal consolidation is postponed and macroeconomic imbalances are not addressed, there may still be a reduction in growth and unemployment.

<sup>49</sup>This effect can operate through the labor market as the number of long-term unemployed rises and individuals lose human capital.

**Figure 13. Redistributive Effect of Fiscal Adjustments, 2007–2012**  
(Changes in market and disposable income Gini coefficients)



Sources: Euromod v. G1.0+; Eurostat; and staff calculations.

Note: An increase in Gini coefficient indicates an increase in inequality. The Gini coefficient for market income is estimated by Euromod based on post-tax income survey data by Eurostat and simulated figures for taxes, using the Euromod micro-simulation model.

\*Indicates that data for disposable income refer to 2007–11.

**62. A more detailed analysis of fiscal measures suggests that both revenue and spending measures can be designed in ways that reduce their burden on lower-income groups.** Among the economies where detailed data are available, simulations of the impact of these measures on disposable income show that five countries (Greece, Latvia, Portugal, Romania, and Spain) implemented progressive measures between 2008 and 2012, with households in the richest quantiles bearing most of the adjustment cost (Figure 14).<sup>50</sup> In other countries, the impact of the adjustment tended to be less redistributive and smaller in size (Italy and the United Kingdom). In contrast, for two economies (Lithuania and Estonia), those in the poorest deciles suffered relatively larger reductions of their income. In Greece, there was also a larger drop in incomes of the poorest ten percent of the population, but the overall effect was progressive, as the second to fourth decile experienced relatively low decreases in their incomes. The simulated effects of the fiscal

<sup>50</sup> Appendix II discusses specifics of the measures and simulation results in the nine economies. Results for Ireland and Cyprus are also available but only capture the aggregate effect of fiscal measures on inequality, and exclude the effect of VAT increases. The results for Ireland indicate that the aggregate effect of tax and social benefit measures, as well as reductions in the public wage bill, was to decrease the incomes of the bottom 10 percent by about 5 percent, and of the top 10 percent by about 13 percent during 2009–12 (Callan and others, 2012). Results for Cyprus indicate that tax and payroll contribution increases implemented in 2012 reduced the incomes of households in the bottom 20 percent by 0.1 percent and those of the top 20 percent by 2 percent (Koutsampelas and Polycarpou, 2013).

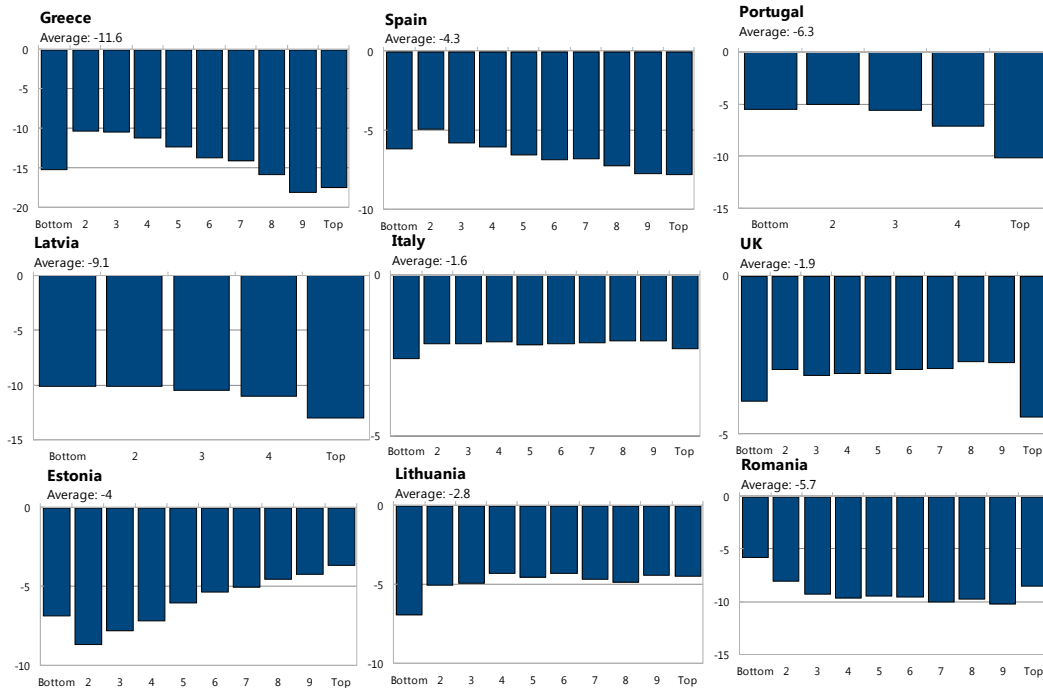
consolidation measures on the Gini for disposable income are shown in Figure 15. In particular, the difference (represented by the bars in the chart) of the Gini coefficient before and after the implementation of the measures (represented by the triangles and squares, respectively) suggest that fiscal measures have prevented an increase in inequality induced by the market in seven out of nine countries. In particular, the analysis suggests the following:

- Public sector wage reductions were progressive, as public sector employees were mostly skilled and educated workers and a large part of the middle-upper class, and because the cuts were generally structured to have a greater impact on higher income workers;
- Cuts in untargeted benefits were largely progressive, while reductions in means-tested benefits were regressive;
- Proportional reductions in pensions across all beneficiaries proved to be strongly regressive, as pensioners in the lower-middle income groups lost a greater share of their total income. In economies where pension freezes and/or cuts were targeted to high pensions, the overall effect of these measures was progressive;
- Increases in income tax and social contributions proved to be mostly progressive. However, some features of changes in the income tax, such as decreases in the tax-free threshold, reduced the progressivity of income taxation; and
- Increases in VAT rates were regressive, with the relative degree of regressivity depending on the relationship between the VAT structure and consumption patterns of different income groups.

**63. This analysis suggests that both expenditure- and revenue-based fiscal adjustments can be designed to mitigate the adverse effects on inequality.** While the appropriate pace of fiscal adjustment depends on the state of the economy, the state of public finances, and the extent of market pressures, the progressivity of consolidations depends on the specific design of measures. Governments could consider protecting the most progressive and efficient redistributive spending during fiscal adjustment and improve targeting to minimize the effects of adjustment on inequality. Broadening the scope of spending cuts to reducing subsidies, military spending, and public sector wages can reduce the need for cuts in social transfers. Greater reliance on progressive revenue measures can also avoid the need for large cuts in social transfers, though this room may be limited if taxes are already high (Baldacci, Gupta, and Mulas-Granados, 2012). Progressive tax measures could also be considered, such as reductions in regressive tax expenditures and greater taxation of wealth and property. Finally, expanding active labor markets programs, such as job-search support, targeted wage subsidies, and training programs, can help accelerate the decline in unemployment as economic growth resumes.



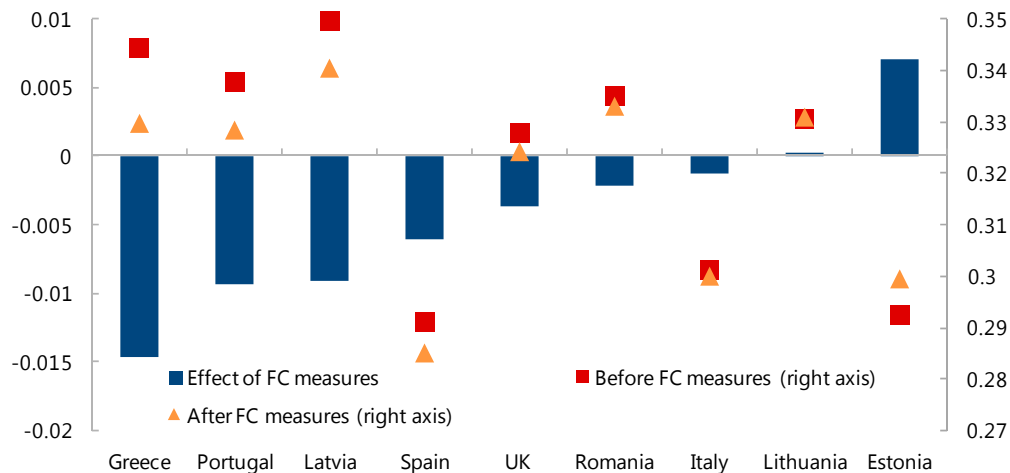
**Figure 14. Cumulative Change in Households Disposable Income due to Simulated Fiscal Consolidation Measures, 2008–12**  
(Percentage of household disposable income)



Source: Avram and others (2013).

Note: Bars refer to impact of changes in cash payments, direct taxes, and VAT as a percent of each income quintile's total household disposable income.

**Figure 15. Simulated Impact of Fiscal Consolidation (FC) Measures on Gini Index, 2012**  
(Simulated disposable Gini coefficient indexes and their difference)



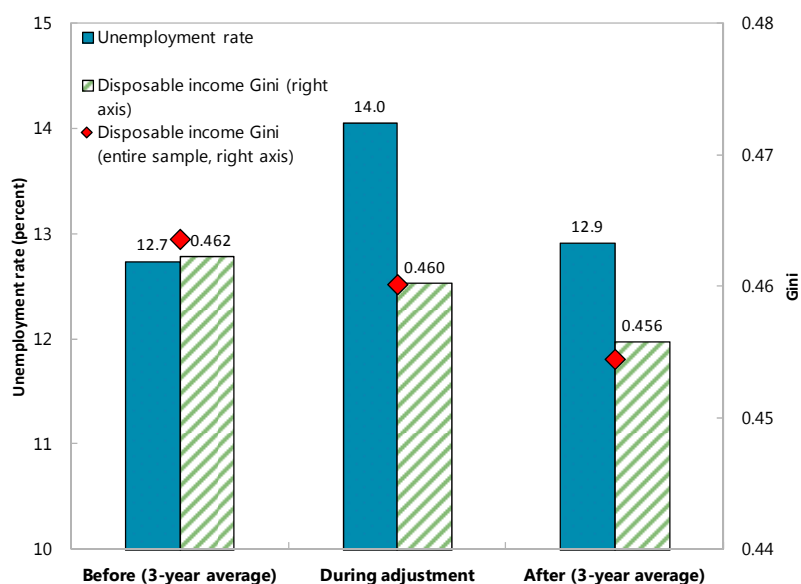
Source: Information upon request from Avram and others (2013).

Note: The effect of fiscal consolidation measures equals the difference between Gini coefficients before and after the fiscal consolidation measures (bars). Unlike the Gini coefficients in Figure 13, the coefficients reported here reflect the simulated effects of only the consolidation measures adopted during 2008–12 that directly affect disposable income and were not reversed before mid-2012. Thus, the effects of these fiscal measures on market income (for example, through their effects on economic activity and employment) are not captured.

## B. Developing Economies

**64. Fiscal consolidations can have adverse effects on inequality in the short-term, but their long-term effects are often positive.** Fiscal adjustment can lead to higher unemployment and potentially increase inequality in the short term. Over the longer term, however, these adverse effects may be reversed. Inequality and unemployment may even decline over the longer term if fiscal adjustment helps bring down inflation—which is damaging to the poor—or corrects macroeconomic imbalances that are hindering growth (Easterly and Fisher, 2001; Agenor, 2002; Albanesi, 2007). Evidence from past episodes of large fiscal adjustment for 27 economies confirms that fiscal consolidation is associated with increased unemployment in the near term (Figure 16). By the end of these adjustment episodes, however, unemployment had declined to close to its pre-adjustment levels and income inequality also declined.<sup>51</sup> The latter could also reflect the fact that much of government spending in developing economies is not progressive, as discussed earlier in the paper. In this light, spending cuts undertaken as part of fiscal adjustment in developing economies are not always damaging to inequality.

**Figure 16. Unemployment Rates and Gini Coefficients During Large Fiscal Adjustments in Developing Economies**



Sources: The Standardized World Income Inequality Database; World Economic Outlook; Tsibouris and others (2006); and staff calculations.

Note: Data for both unemployment and Gini coefficients are available for 27 episodes in 16 countries. The entire sample for Gini coefficients includes 68 episodes in 41 countries.

<sup>51</sup>Successful fiscal adjustments are also beneficial over the longer term by reducing public debt ratios and creating the fiscal space for countercyclical policy responses to external shocks. This can help dampen the effects of these shocks on unemployment.

**65. Fiscal consolidation in developing economies can also be designed to mitigate its adverse effect on inequality if it is based on progressive tax and spending measures.** As discussed in earlier sections, social insurance and social assistance programs cover only a small share of the population in developing economies. To prevent short-term increases in inequality, it will be necessary to strengthen social safety nets to protect vulnerable households during adjustment. Cutting less progressive spending, such as generalized subsidies and government wages, improving targeting of social spending, and improving the incidence of in-kind spending such as education and health (see previous section) can also help prevent a surge in inequality during adjustment. Fiscal adjustments may nevertheless need to include revenue measures to be sustainable (Gupta and others, 2005; Bevan, 2010). Enhancing the efficiency and equity of the tax system through greater reliance on progressive taxation can also help mitigate the impact of tax measures on inequality.

## Appendix I. Who Benefits from Tax Incentives for Charitable Giving?

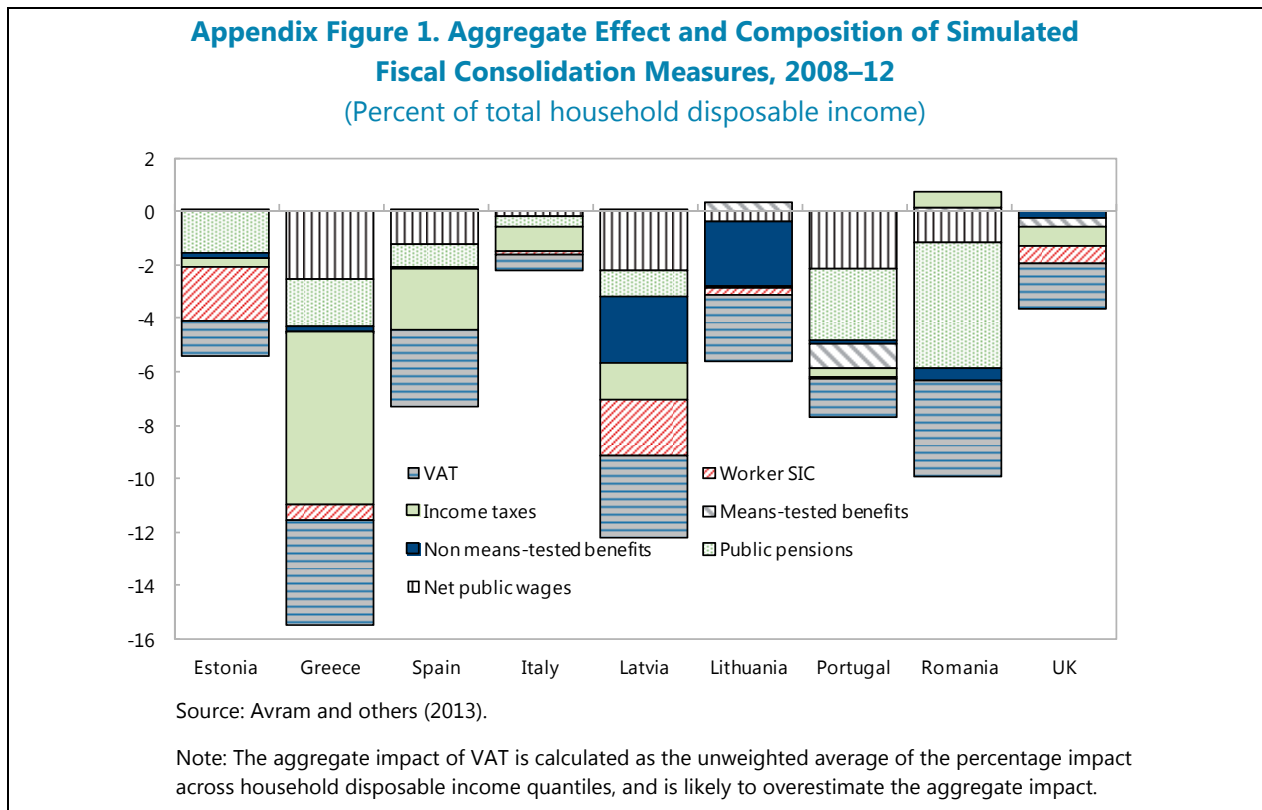
**Many advanced countries provide tax incentives for charitable giving as a way to increase private funding of organizations dealing with education, science, culture, environment, religion or other forms of philanthropy.** Donations are either deductible for income tax (Australia, Belgium, Denmark, Germany, Greece, Japan, the Netherlands, Norway, Switzerland, United Kingdom, and United States) or enjoy a tax credit that is granted at a fixed rate (Canada (29 percent), France (6), Ireland (31), Italy (19), New Zealand (33 $\frac{1}{3}$ ), Portugal (25), and Spain (25)). In the United States, total donations in 2010 were US\$291 billion—1.9 percent of GDP—with three quarters coming from individuals and the rest from firms and foundations. Elsewhere, donations are usually smaller (Charities Aid Foundation, 2006).

**Tax subsidies for charitable giving can reduce inequality, although not necessarily.** One needs to distinguish different effects. First, the tax-subsidy itself generally increases with an individual's income, both because the rich donate more and because they take their tax deductions against a higher marginal tax rate. This renders the tax subsidy regressive, as the rich enjoy more benefit per dollar spent. However, one might alternatively argue that the mere transfer of funds by a rich donor reduces the donor's ability-to-pay and therefore reduces the inequality of private consumption. The redistributive impact of the tax-subsidy therefore depends on how one views the character of the transfer. A second issue is that spending by charitable organizations can have various redistributive effects. Spending on higher education and arts, for instance, is less redistributive than spending on organizations that support the basic needs of the poor. In the United States, top income earners donate primarily to higher education and arts, while middle-income groups give to other charities (Colinvaux, Galle, and Steuerle, 2012). Hence, the tax subsidies for the highest incomes might ultimately be less redistributive than those for middle incomes. Finally, public support may crowd out private charitable giving. If so, the government might more effectively encourage redistributive charitable giving through tax subsidies than by providing redistributive support itself. Crowding-out is generally found to be limited, however, with some studies putting it in the order of 20 percent (Schiff, 1985).

**The effectiveness of tax deductions depends on the price elasticity of charitable giving,** i.e., the response to the net-of-tax price of the donation. If this elasticity exceeds one, the subsidy will boost donations by more than it reduces government revenue. This ensures that total support to the charitable organizations increases, even if the government were to withdraw its funding by the same amount. If the price elasticity is smaller than one, however, total support might decline as compared to direct government spending. There is great controversy in the literature as to whether the elasticity exceeds one. Most studies find that it does, although more recent work suggests it might be smaller than one (Fack and Landais, 2011).

## Appendix II. Recent Fiscal Consolidations and Income Inequality

**The extent and composition of recent fiscal consolidation packages implemented in nine European countries since the global financial crisis differ substantially across economies.** The impact of fiscal consolidation on overall disposable income ranged from 1 percent to more than 11 percent, contributing to reductions in living standards of the population. The adopted fiscal measures varied across countries (Appendix Figure 1). Public sector pay reductions were significant in Greece, Latvia, Portugal, Romania, and Spain. Public pension cuts or a freeze in benefits were prevalent in Romania, Portugal, and to a lesser extent, in Spain. Changes in pension indexation were adopted in Estonia. Reductions in means-tested benefits were large in Portugal and the United Kingdom, while reductions in untargeted benefits were sizeable in Lithuania and Latvia. Income tax hikes played a major role in Greece (with an important base-broadening component) and Spain, and increases in worker social insurance contributions played a role in Latvia and Estonia. Increases in VAT rates were adopted in all nine countries.



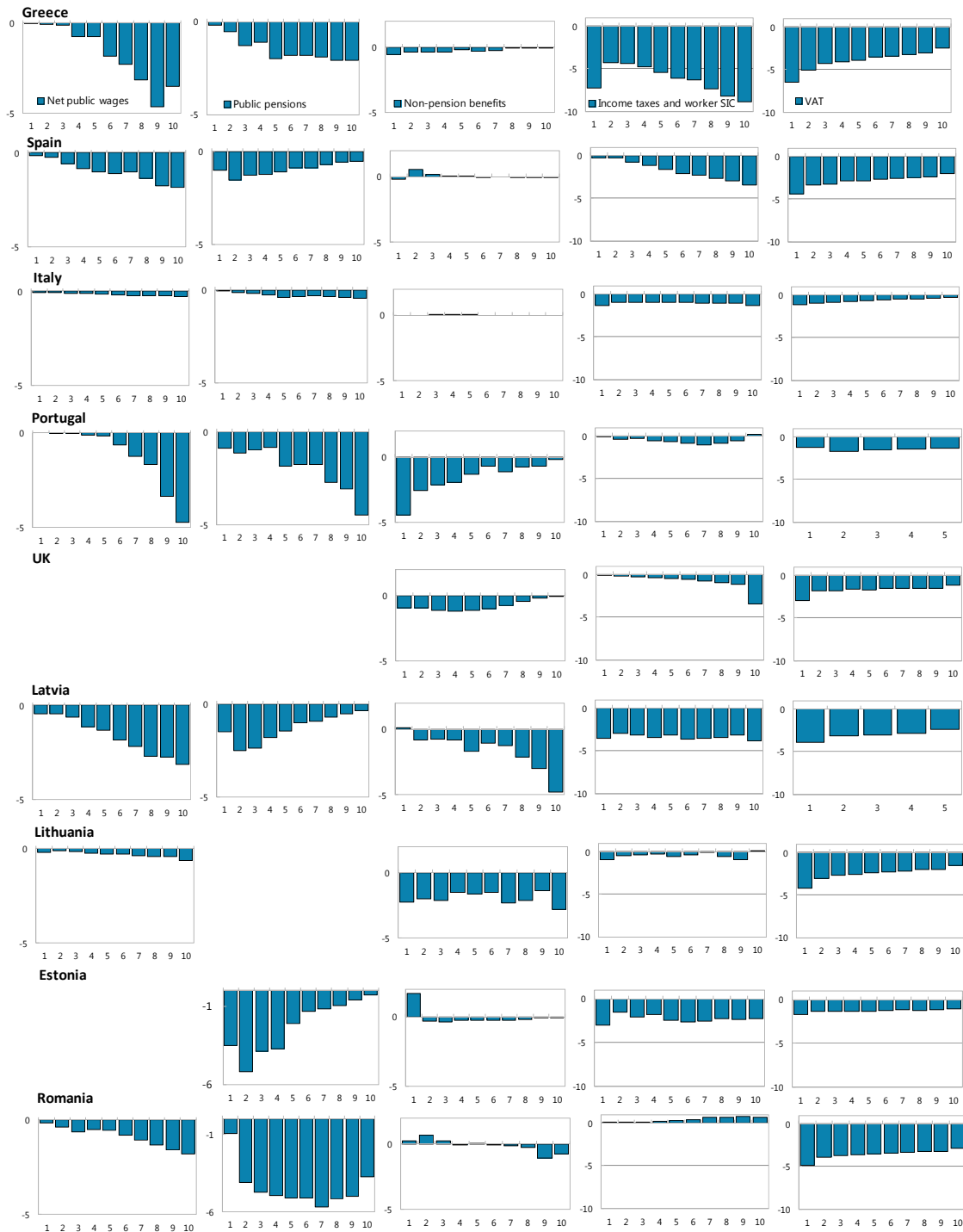
**The overall distributional outcome reflects the composition and design of the consolidation package.** Micro-simulation studies indicate that these fiscal adjustments relied on progressive measures. These studies focus exclusively on the impact of spending and tax consolidation measures on household disposable income and consumption, and do not assess the impact of these measures on market income (Callan and others, 2012; Avram and others, 2013; Koutsampelas and Polycarpu, 2013). For a subset of nine countries, studies simulate the impact on disposable income of specific consolidation measures adopted during the period 2008–12 (Appendix Figure 2).

The results suggest that:

- The overall progressivity of the consolidation package in *Greece* has been driven by progressive public sector pay cuts, pension cuts, and income taxation. Public sector wages were capped, special allowances for civil servants reduced, and the 13<sup>th</sup> and 14<sup>th</sup> salaries abolished for high earning workers. The poorest 10 percent of the population were hit relatively harder by the reform of the income tax, which reduced the tax-free threshold from EUR 12,000 to EUR 5,000 in 2011.
- The progressive incidence in *Spain* was also due to public sector pay cuts and changes in income taxation, although the poorest 10 percent of households were relatively harder hit by the 5 percentage point cumulative VAT increases imposed over 2010 and 2012. The public sector pay cut averaged 5 percent but increased with wage up to 9.7 percent, and was followed by a freeze and the elimination of the 14<sup>th</sup> month of pay.
- Moderately progressive public sector wage and pension cuts also drove the overall mildly progressive effect of consolidation in *Italy*, although the scale of the household average income loss was very limited due to a narrow targeting of the implemented measures, which by design only affected a small part of the population. Public sector wages above EUR 90,000 and EUR 150,000 per year were cut by 5 and 10 percent respectively.
- In *Portugal*, the overall progressive incidence was due to progressive cuts in public wages and pensions, which offset the regressive cuts in means-tested social transfers which negatively affected households in the bottom decile. Public sector pay cuts increased with wage to a maximum of 10 percent, and included the suspension of the 13<sup>th</sup> and 14<sup>th</sup> months of pay in 2012. Benefit reductions included a decrease of the amount and tightening of the eligibility conditions for family benefits. The suspension of the 13<sup>th</sup> and 14<sup>th</sup> months of pay was reversed in 2013 (after the period under consideration in the analysis).
- The moderately regressive path observed in *Lithuania* was the result of slightly progressive public sector pay cuts—involving basic wage rates, coefficients, and bonuses—and cuts to untargeted benefits.
- In *Romania*, the overall incidence was progressive due to public sector pay cuts, real pension reductions for middle-class and rich pensioners, and means-tested benefits.
- Progressive reductions in public sector pay, which decreased the average wage by about 10.5 percent, and non-pension benefits more than offset regressive cuts in public pensions and drove the overall progressivity in *Latvia*.
- The overall regressive effect observed in *Estonia*, on the other hand, was driven by a change in the indexation of public pensions, although means-tested social assistance lessened the impact on the incomes of the poorest.

- In the *United Kingdom*, the overall incidence was progressive, due to higher taxes, especially on the richest 1 percent of the population.

**Appendix Figure 2. Change in Household Disposable Income by Type of Measure and Income Group, 2007–12**  
(Percentage)



Source: Avram and others (2013).



## References

- Abbring, J., G. van den Berg, and J. van Ours, 2005, "The Effect on Unemployment Insurance Sanctions on the Transition Rate from Unemployment to Employment", *Economic Journal*, Vol. 115, No. 5, pp. 602–30.
- Agenor, P.R., 2002, "Business Cycles, Economic Crises, and the Poor," *Journal of Economic Policy Reform*, Vol. 5, No. 3, pp. 145–60.
- Aghion, P., D. Hemous, and E. Kharroubi, 2009, "Credit Constraints, Cyclical Fiscal Policy and Industry Growth," CEPR Discussion Paper No. 7359.
- Agnello, L., and R.M. Sousa, 2012, "How Does Fiscal Consolidation Impact on Income Inequality?" Banque de France Working Paper 382. Available at: <http://ssrn.com/abstract=2060097> or <http://dx.doi.org/10.2139/ssrn.2060097>.
- Albanesi, S., 2007, "Inflation and Inequality," *Journal of Monetary Economics*, Vol. 54, pp. 1088–114.
- Alvaredo, F., A. Atkinson, T. Piketty, and E. Saez, 2013, "The Top 1 Percent in International and Historical Perspective," *Journal of Economic Perspectives*, Vol. 27, No. 3, pp. 3–20.
- Arulampalam, W., M. Devereux, and G. Maffini, 2010, "The Direct Incidence of Corporate Income Tax on Wages," IZA Discussion Paper 5293 (Bonn: Institute for the Study of Labor).
- Arze del Granado, J., D. Coady and R. Gillingham, 2012, "The Unequal Benefits of Fuel Subsidies: A Review of Evidence for Developing Countries," *World Development*, Vol. 40 (November), pp. 2234–48.
- Asian Development Bank (ADB), 2012, *Asian Development Outlook 2012: Confronting Rising Inequality in Asia* (Manila). Available at: [www.iadb.org/intal/intalcdi/PE/2012/11032.pdf](http://www.iadb.org/intal/intalcdi/PE/2012/11032.pdf).
- Atkinson, A.B., and F. Bourguignon, 2000, "Introduction: Income Distribution and Economics," in *Handbook of Income Distribution*, Vol. 1, ed. by A.B. Atkinson and F. Bourguignon (Amsterdam: Elsevier).
- Atkinson, A.B., and A. Brandolini, 2001, "Promises and Pitfalls in the Use of Secondary Data-Sets: Income Inequality in OECD Countries as a Case Study," *Journal of Economic Literature*, Vol. 39, No. 3, pp. 771–800.
- Atkinson, A., T. Piketty, and E. Saez, 2011, "Top Incomes in the Long-Run of History," *Journal of Economic Literature*, Vol. 49, No. 1, pp. 3–71.
- Auerbach, A., 2006, "Who Bears the Corporate Tax? A Review of What We Know," in *Tax Policy and the Economy*, Vol. 20, ed. by J. Poterba (Cambridge: MIT Press).

- Avram, S., F. Figari, C. Leventi, H. Levy, J. Navicke, M. Matsaganis, E. Militaru, A. Paulus, O. Rastringina, and H. Sutherland, 2013, "The Distributional Effects of Fiscal Consolidation in Nine Countries," EUROMOD Working Paper No. EM 2/13 (Essex: Essex University Institute of Social & Economic Research).
- Bahl, R., J. Martínez-Vázquez, and J. Youngman, 2008, *Making the Property Tax Work*, (Cambridge: Lincoln Institute of Land Policy).
- Baldacci, E., S. Gupta, and C. Mulas-Granados, 2012, "Reassessing the Fiscal Mix for Successful Debt Reduction," *Economic Policy*, Vol. 71 (July).
- Ball, L., D. Furceri, D. Leigh, and P. Loungani, 2013, "The Distributional Effects of Fiscal Austerity," IMF Working Paper No. 13/151 (Washington: International Monetary Fund).
- Barr, N., 2012, *Economics of the Welfare State* (Oxford: Oxford University Press).
- Bastagli, F., D. Coady, and S. Gupta, 2012, "Income Inequality and Fiscal Policy," IMF Staff Discussion Note 12/08 (Washington: International Monetary Fund).
- Berg, A., and J. Ostry, 2011, "Inequality and Unsustainable Growth: Two Sides of the Same Coin?" IMF Staff Discussion Note 11/08 (Washington: International Monetary Fund).
- Berg, A., J. Ostry, and C. G. Tsangarides, "Redistribution, Inequality, and Growth," IMF Staff Discussion Note, forthcoming.
- Bevan, D., 2010, "Fiscal Implications of the Global Economic and Financial Crisis for Low-Income Countries," Department of Economics paper prepared for the U.K. Department for International Development (Oxford: Oxford University). Available at: [http://www.dfid.gov.uk/r4d/PDF/Outputs/EcoDev\\_misc/60740-Fiscal-Implications-Bevan-03-10.pdf](http://www.dfid.gov.uk/r4d/PDF/Outputs/EcoDev_misc/60740-Fiscal-Implications-Bevan-03-10.pdf).
- Bird, R.M., and P. Gendron, 2007, *The VAT in Developing and Transitional Countries* (Cambridge: Cambridge University Press).
- Björklund, A., 1993, "A Comparison of Actual Distributions of Actual and Lifetime Incomes: Sweden 1951–1989," *Review of Income and Wealth*, Vol. 39, No. 4, pp. 377–86.
- Blanchard, O., and D. Leigh, 2013, "Fiscal Consolidation: At what Speed?" *Vox*, May 3, 2013, <http://www.voxeu.org/article/fiscal-consolidation-what-speed>.
- Boadway, R., and M. Keen, 1993, "Redistribution," in *The Handbook of Income Distribution*, Vol. 1, ed. by A. B. Atkinson and F. Bourguignon, pp. 677–789.

- , 2000, "Public Goods, Self-Selection and Optimal Income Taxation," *International Economic Review*, Department of Economics, University of Pennsylvania and Osaka University Institute of Social and Economic Research Association, Vol. 34, No. 3, August, pp. 463–78.
- Boadway, R., E. Chamberlain, and C. Emmerson, 2010, "Taxation of Wealth and Wealth Transfers," in *Dimensions of Tax Design*, ed. by J. Mirrlees, S. Adam, T. Besley, R. Blundell, S. Bond, R. Chote, M. Gammie, P. Johnson, G. Miles, and J. Poterba (London: The Mirrlees Review, Institute for Fiscal Studies).
- Bosch, M., Angel Melguizo, and C. Pagés, 2013, *Mejores Pensiones, Mejores Trabajos* (Washington: Inter-American Development Bank).
- Bovenberg, A.L., M. I. Hansen, and P.B. Sorenson, 2012, "Efficient Redistribution of Lifetime Income through Welfare Accounts," *Fiscal Studies*, Vol. 33, No. 1, pp.1–37.
- Bowlus, A., and J. M. Robin, 2012, "An International Comparison of Lifetime Inequality: How Continental Europe Resembles North America," *Journal of the European Economic Association*, Vol. 10, No. 6, December, pp. 1236–62.
- Callan, T., C. Keane, M. Savage, and J. R. Walsh, 2012, "Distributional Impact of Tax, Welfare and Public Sector pay Policies: 2009–2012," ESRI Working Paper (Dublin: The Economic and Social Research Institute).
- Caminada, K., K. Goudswaard, and C. Wang, 2012, "Disentangling Income Inequality and the Redistributive Effect of Taxes and Transfers in 20 LIS Countries Over Time," LIS Working Paper Series No. 581 (Luxembourg: Luxembourg Income Study).
- Card, D., J. Kluve, and A. Weber, 2010, "Active Labor Market Policy Evaluations: A Meta-Analysis," NBER Working Paper No. 16173 (July), (Cambridge: National Bureau for Economic Research).
- Charities Aid Foundation (CAF), 2006, CAF: International Comparisons of Charitable Giving November 2006.
- Chen, S., and M. Ravallion, 2010, "The Developing World Is Poorer Than We Thought, but No Less Successful in the Fight Against Poverty," *Quarterly Journal of Economics*, Vol. 125, No. 4, pp. 1577–625.
- Chetty, R., N. Hendren, P. Kline, and E. Saez, 2013, The Equality of Opportunity Project. Available at: <http://www.equality-of-opportunity.org/>.

- Chu, K-Y., H. Davoodi, and S. Gupta, 2004, "Income Distribution and Tax and Government Social-Spending Policies in Developing Countries," in *Inequality, Growth, and Poverty in an Era of Liberalization and Globalization*, ed. by Giovanni Andrea Cornia (New York: Oxford University Press).
- Clements, B., D. Coady, and S. Gupta, eds., 2012, *The Economics of Public Health Care Reform in Advanced and Emerging Economies* (Washington: International Monetary Fund).
- Clements, B., D. Coady, F. Eich, S. Gupta, A. Kangur, B. Shang, and M. Soto, 2012, *The Challenge of Public Pension Reform in Advanced and Emerging Market Economies*, IMF Occasional Paper No. 275 (Washington: International Monetary Fund).
- Clements, B., D. Coady, S. Fabrizio, S. Gupta, T. Alleyne, and C. Sdravovich, eds., 2013, *Energy Subsidy Reform: Lessons and Implications* (Washington: International Monetary Fund).
- Cnossen, S., 2000, "Taxing Capital Income in the Nordic Countries: A Model for the European Union?" in: S. Cnossen (ed.), *Taxing Capital Income In The European Union—Issues And Options For Reform* (Oxford: Oxford University Press).
- , 2005, *Theory and Practice of Excise Taxation: Smoking, Drinking, Gambling, Polluting, and Driving* (Oxford: Oxford University Press).
- Coady, D., and R. Harris, 2004, "Evaluating Transfer Programs Within a General Equilibrium Framework," *Economic Journal*, 114 (October), pp. 778–99.
- Colinvaux, R., B. Galle, and E. Steuerle, 2012, *Evaluating the Charitable Deduction and Proposed Reforms*, Tax Policy Center, Urban Institute.
- Congressional Budget Office, 2014, *The Effects of a Minimum Wage Increase on Employment and Family Income*, Publication No. 4856 (Washington: U.S. Government Printing Office).
- Corak, M., 2013, "Income Inequality, Equality of Opportunity, and Intergenerational Mobility," *Journal of Economic Perspectives*, Vol. 27, No. 3 (Summer 2013), pp. 79–102.
- Cournède, B., and others, 2013, "Choosing Fiscal Consolidation Instruments Compatible with Growth and Equity," OECD Economic Policy Paper, No. 7, July (Paris: Organisation for Economic Co-operation and Development).
- Crawford, I., M. Keen, and S. Smith, 2010, "Value Added Taxes and Excises," in *Dimensions of Tax Design*, ed. by J. Mirrlees, S. Adam, T. Besley, R. Blundell, S. Bond, R. Chote, M. Gammie, P. Johnson, G. Miles, and J. Poterba (London: The Mirrlees Review, Institute for Fiscal Studies).

- Davies, J.B., S. Sandstrom, A. Shorrocks, and E. N. Wolff, 2008, *The World Distribution of Household Wealth*, UNU-WIDER Discussion Paper No. 2008/03 (Helsinki: United Nations University).
- Davoodi, H. R., E. Tiongson, and S. Asawanuchit, 2010, "Benefit Incidence of Public Education and Health Spending Worldwide: Evidence from a New Database," *Poverty and Public Policy*, Vol. 2, No. 2.
- Deaton, A., and S. Zaidi, 2002, "Guidelines for Constructing Consumption Aggregates for Welfare Analysis," LSMS Working Paper No. 135 (Washington: World Bank).
- De Gregorio, J., and J-W Lee, 2002, "Education and Income Inequality: New Evidence from Cross Country Data," *Review of Income and Wealth*, Vol. 48, No. 3, pp. 395–416.
- Demery, L., 2000, *Benefit Incidence: A Practitioner's Guide*, Poverty and Social Development Group, Africa Region (Washington: World Bank).
- De Mooij, R., 2008, "Reinventing the Dutch Tax-Benefit System: Exploring the Frontier of the Equity-Efficiency Trade-off," *International Tax and Public Finance*, Vol. 15, No. 1, pp. 87–103.
- Diamond, P.A., 1998, "Optimal Income Taxation: an Example with a U-shaped Pattern of Optimal Marginal Tax Rates," *The American Economic Review*, Vol. 88, No.1, pp. 83–95.
- Dilnot, A.W., J.A. Kay, and M. Keen, 1990, "Allocating Taxes to Households: A Methodology," *Oxford Economic Papers New Series*, Vol. 42, No. 1, *Special Issue on Public Economics* (January), pp. 210–30.
- Easterly, W., and S. Fisher, 2001, "Inflation and the Poor," *Journal of Money, Credit and Banking*, Vol. 33, pp. 160–78.
- Ebrill, L., M. Keen, J.P. Bodin, and V. Summers, 2001, *The Modern VAT* (Washington: International Monetary Fund).
- Eichengreen, B., 1989, "The Capital Levy in Theory and Practice," NBER Working Paper No. 3096.
- Eissa, N., and H. W. Hoynes, 2006, "The Hours of Work Response of Married Couples: Taxes and the Earned Income Tax Credit," in *Tax Policy and Labor Market Performance*, Jonas Agell and Peter Birch Sorensen (eds.), CESifo/MIT Press Seminar Series.
- Elborgh-Woytek, K., M. Newiak, K. Kochar, 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 13/10 (Washington: International Monetary Fund).

- European Commission (EC), 2008, "Privately Managed Funded Pension Provision and their Contribution to Adequate and Sustainable Pensions," The Social Protection Committee. Available at: <http://ec.europa.eu/social/BlobServlet?docId=743&langId=en>.
- Eyraud, L., 2013, "Some Stylized Facts on Households, Wealth, and Wealth Taxation," IMF Fiscal Affairs Department, mimeo.
- Fack, G., and C. Landais, 2011, "Are Tax Incentives for Charitable Giving Efficient? Evidence from France," *American Economic Journal: Economic Policy*, Vol. 2, pp. 117–41.
- Fiszbein, A., and N. Shady, 2009, *Conditional Cash Transfers: Reducing Present and Future Poverty* (Washington: World Bank).
- Fredriksen, K.B., 2012, "Less Income Inequality and More Growth—Are They Compatible?" Part 6, The Distribution of Wealth, OECD Economics Department Working Papers No. 929 (Paris: Organisation for Economic Co-operation and Development).
- Garcia, M., and C. Moore, 2012, *The Cash Dividend: The Rise of Cash Transfer Programs in Sub-Saharan Africa (Directions in Development)* (Washington: World Bank).
- Gentry, W., 2007, "A Review of the Evidence on the Incidence of the Corporate Income Tax," U.S. Department of the Treasury, Office of Tax Analysis, Paper 101 (Washington: Department of the Treasury).
- Goldin, C., and L. Katz, 2008, *The Race Between Education and Technology* (Cambridge, MA: Harvard University Press).
- Golosov M., N. Kocherlakota and A. Tsyvinski, 2003, "Optimal Indirect and Capital Taxation," *Review of Economic Studies*, Vol. 70, No. 3, pp. 569–87. Available at: <http://ideas.repec.org/a/oup/restud/v70y2003i3p569-587.html>.
- Goñi, E., J.H. López, and L. Servén, 2008, "Fiscal Distribution and Income Inequality in Latin America," Policy Research Working Paper 4487 (Washington: World Bank).
- , 2011, "Fiscal Redistribution and Income Inequality in Latin America," *World Development*, Vol. 39, No. 9, pp 1558–69.
- Gong, X., R. Breunig, and A. King, 2010, "How Responsive is Female Labour Supply to Child Care Costs: New Australian Estimates," IZA Discussion Paper No. 5119 (Bonn: Institute for the Study of Labor).
- Grigoli, F., 2014, "A Hybrid Approach to Estimating the Efficiency of Public Spending on Education in Emerging and Developing Economies," Working Paper (Washington: International Monetary Fund, forthcoming).

- Grosh, M., C. del Ninno, E. Tesliuc, and A. Ouerghi, 2008, *From Protection to Promotion: The Design and Implementation of Effective Safety Nets* (Washington: World Bank).
- Gruber, J., and B. Köszegi, 2001, "Is Addiction 'Rational'? Theory and Evidence," *The Quarterly Journal of Economics*, Vol. 116, pp. 1261–303.
- Gupta, S., B. Clements, E. Baldacci, and E. Tiongson, 2005, "What Sustains Fiscal Consolidations in Emerging Market Countries?" *International Journal of Finance & Economics*, Vol. 10, No. 4, pp. 307–21.
- Gupta, S., G. Schwartz, S. Tareq, R. Allen, I. Adenauer, K. Fletcher, and D. Last, 2007, "Fiscal Management of Scale-Up Aid," IMF Working Paper No. 07/222 (Washington: International Monetary Fund).
- Hanushek, E., and L. Woessmann, 2011, "The Economics of International Differences in Educational Achievement," in *Handbook of the Economics of Education*, Vol. 3, ed. by E. Hanushek, S. Machin, and L. Woessmann, (Amsterdam: North Holland).
- Hijzen, A., and D. Venn, 2011, "The Role of Short-Time Work Schemes During the 2008–09 Recession," OECD Social, Employment and Migration Working Papers No. 115 (Paris: Organisation for Economic Co-operation and Development).
- Hoeller, P., I. Joumard, and I. Koske, eds., 2014, *Income Inequality in OECD Countries: What Are the Drivers and Policy Options?* World Scientific.
- Holzmann, R., D. A. Robalino, and N. Takayama, 2009, *Closing the Coverage Gap: The Role of Social Pensions and Other Retirement Income Transfers*, No. 49318, (Washington: World Bank).
- Hotz, V. Joseph and John Karl Scholz, 2003, "The Earned Income Tax Credit," in *Means-Tested Transfer Programs in the United States*, ed. by R. Moffitt, pp. 141–97 (Chicago and Cambridge: The University of Chicago Press and NBER).
- Hüfner, F. and C. Klein, 2012, "The German Labour Market: Preparing for the Future," OECD Economics Department Working Papers, No. 983, OECD Publishing.
- Immervoll, H., H. Levy, C. Lietz, D. Mantovani, C. O'Donoghue, H. Sutherland, and G. Verbist, 2005, "Household Incomes and Redistribution in the European Union: Quantifying the Equalising Properties of Taxes and Benefits," EUROMOD Working Paper EM9/05 (Essex: University of Essex).
- Immervoll, H., H. Kleven, C. Kreiner, and E. Saez, 2007, "Welfare Reform in European Countries: A Microsimulation Analysis," *Economic Journal*, Vol. 117 (January), pp. 1–44.



- Immervoll, H., and M. Pearson, 2009, "A Good Time for Making Work Pay? Taking Stock of In-work Benefits and Related Measures Across the OECD," OECD Social, Employment and Migration Working Paper No. 81 and IZA Policy Paper No. 3 (Paris: Organisation for Economic Co-operation and Development).
- International Monetary Fund, 1995, "Social Dimensions of the IMF's Policy Dialogue," IMF Pamphlet No. 47 (Washington).
- , 1996, "Income Distribution Issues," Guidance Note to Management, March 26. Available at: <http://www-intranet.imf.org/departments/SPR/Trade/Documents/MD32696.pdf>.
- , 1997, "Guidelines on Social Expenditure," Guidance Note to Management, May 28. Available at: <http://www-intranet.imf.org/departments/SPR/LII/Documents/SocialExpenditureGuidelines.pdf>.
- , 2008, *World Economic Outlook*, October, Chapter 5, "Fiscal Policy as a Counter-Cyclical Tool," (Washington).
- , 2009, "Debt Bias and Other Distortions: Crisis-Related Issues in Tax Policy," Policy Paper (Washington). Available at: [www.imf.org/external/np/pp/eng/2009/061209.pdf](http://www.imf.org/external/np/pp/eng/2009/061209.pdf).
- , 2011, International Monetary Fund, "Revenue Mobilization in Developing Countries," Policy Paper, March 8 (Washington).
- , 2012a, Fiscal Policy and Employment in Advanced and Emerging Economies, (Washington). Available at: <http://www.imf.org/external/pp/longres.aspx?id=4668>.
- , 2012b, *Iceland: Staff Report for 2012 Article IV Consultation*, IMF Country Report 12/89 (Washington). Available at: <http://www.imf.org/external/pubs/cat/longres.aspx?sk=25853.0>.
- , 2013, "Reassessing the Role and Modalities of Fiscal Policy in Advanced Economies," IMF Policy Paper, November, (Washington).
- , 2013a, "Guidance Note on Jobs and Growth Issues in Surveillance and Program Work" (September).
- , 2013b, *Fiscal Monitor: Taxing Times*, October. Available at: [www.imf.org/external/pubs/ft/fm/2013/02/pdf/fm1302.pdf](http://www.imf.org/external/pubs/ft/fm/2013/02/pdf/fm1302.pdf).
- , 2013c, "Issues in International Taxation and the Role of the IMF," Policy Paper (June). Available at: [www.imf.org/external/np/pp/eng/2013/062813.pdf](http://www.imf.org/external/np/pp/eng/2013/062813.pdf).
- Jacobs, B., 2013, From Optimal Tax Theory to Applied Tax Policy," *FinanzArchiv*, Vol. 69, No. 3, pp. 338–89.

- Jacobi, L., and J. Kluge, 2006, "Before and After the Hartz Reforms: The Performance of Active Labour Market Policy in Germany," *Journal for Labour Market Research / Zeitschrift für Arbeitsmarktforschung*, Vol. 40, No. 1, pp. 45–64.
- Jamison, D., and others, 2013, "Global Health 2035: A World Converging With in a Generation," *The Lancet*, December, pp. 11–68.
- Jaumotte, F., 2003, "Female Labour Force Participation: Past Trends and Main Determinants in OECD Countries," OECD Economics Department Working Papers No. 376 (Paris: Organisation for Economic Co-operation and Development).
- Jenkins, S., A. Brandolini, J. Micklewright, and B. Nolan, 2011, *The Great Recession and the Distribution of Household Income* (Milan: Fondazione Rodolfo De Benedetti).
- Jenkins, G., H. Jenkins, and C.-Y. Kuo, 2006, "Is the Value Added Tax Naturally Progressive?" Working Paper 1059 (Kingston: Queen's University).
- Jordà, Ò., and A. M. Taylor, 2013, "The Time for Austerity: Estimating the Average Treatment Effect of Fiscal Policy," Paper presented at the NBER Summer Institute.
- Joumard, I., M. Pisu and D. Bloch, 2012, "Less Income Inequality and More Growth—Are They Compatible? Part 3: Income Redistribution via Taxes and Transfers Across OECD Countries," OECD Economics Department Working Papers, No. 926, OECD Publishing. Available at: <http://dx.doi.org/10.1787/5k9h296b1zjf-en>.
- Kakwani, N., and K. Subbarao, 2005, "Aging and Poverty in Africa and the Role of Social Pensions," Social Protection Discussion Paper No. 0521 (Washington: World Bank).
- Kalb, G., 2009, "Children, Labour Supply and Childcare: Challenges for Empirical Analysis," *Australian Economic Review*, Vol. 42, No. 3, pp. 276–99.
- Keen, M., 2014, "Targeting, Cascading, and Indirect Tax Design," *Indian Growth and Development Review* (forthcoming), see also IMF Working Paper No. 13/57.
- , and J. Ligthart, 2005, "Coordinating Tariff Reduction and Domestic Tax Reform," *Journal of International Economics*, Vol. 56, pp. 489–507.
- Keen M., Y. Kim, and R. Varsano, 2008, "The "Flat Tax(es)": Principles and Experience," *International Tax and Public Finance* Vol. 15, No. 6, pp. 712–51.
- Kotlikoff, L. J., and L. Summers, 1987, "Tax Incidence," in *Handbook of Public Economics*, ed. by A. J. Auerbach and M. Feldstein, Edition 1, Vol. 2, Ch. 16, pp. 1043–92. Available at: <http://ideas.repec.org/h/eee/pubchp/2-16.html>.

- Koutsampelas, C., and A. Polycarpu, 2013, "Austerity and the Income Distribution: The Case of Cyprus," EUROMOD Working Paper No. EM 4/13 (Colchester: University of Essex).
- Krueger, A., 2012, "The Rise and Consequences of Inequality in the United States," paper presented to the Center for American Progress, Washington, January 12.
- Kumhof, M., and R. Rancière, 2010, "Inequality, Leverage, and Crisis," IMF Working Paper No. 10/268 (Washington: International Monetary Fund).
- Lustig, N., S. Higgins, M. Jaramillo, W. Jimenez, G. Molina, V. Paz Arauco, C. Pereira, C. Pessino, J. Scott, and E. Yañez, 2011, "Fiscal Policy and Income Distribution in Latin America: Challenging the Conventional Wisdom," Tulane Economics Working Paper 1124 (New Orleans: Tulane University).
- Lustig, N., C. Pessino and J. Scott, 2013, "The Impact of Taxes and Social Spending on Inequality and Poverty in Latin America: Argentina, Bolivia, Brazil, Mexico, Peru and Uruguay," *Public Finance Review*, November, pp. 1–17. Available at: <http://pfr.sagepub.com/content/early/2013/11/20/1091142113506931>.
- Mankiw, G., 2013, "Defending the One Percent," *Journal of Economic Perspectives*, Vol. 27, No. 3, pp. 21–34.
- Martínez-Vázquez, J., V. Vulovic, and B. Moreno-Dodson, 2012, "The Impact of Tax and Expenditure Policies on Income Distribution: Evidence from a Large Panel of Countries," *Review of Public Economics*, 200, pp. 95–130.
- Matheson, T., 2012, "Security Transaction Taxes: Issues and Evidence," *International Tax and Public Finance*, Vol. 19, pp. 884–912.
- Metcalf, G., 2007, *A Proposal for a US Carbon Tax Swap: An Equitable Tax Reform to Address Climate Change* (Washington: The Brookings Institution).
- Meyer, B., 2002, "Unemployment and Workers' Compensation Programmes: Rationale, Design, Labor Supply and Income Support," *Fiscal Studies*, 23, No. 1, pp. 1–49.
- Milanovic, B., 2012, "Global Income Inequality by the Numbers: in History and Now," Policy Research Working Paper No. 6259 (Washington: World Bank).
- Mirrlees, J. A., 1971, "An Exploration in the Theory of Optimum Income Taxation," *Review of Economic Studies*, Vol. 38, pp. 175–208.
- Moller, L. C., 2012, "Fiscal Policy in Colombia: Tapping its Potential for a More Equitable Society," World Bank Working Paper Series, (Washington: World Bank). Available at: <http://www->

[wds.worldbank.org/external/default/WDSContentServer/TW3P/IB/2012/06/15/000158349\\_20120615144304/Rendered/PDF/WPS6092.pdf](https://wds.worldbank.org/external/default/WDSContentServer/TW3P/IB/2012/06/15/000158349_20120615144304/Rendered/PDF/WPS6092.pdf).

- Monchuk, V., 2014, *Reducing Poverty and Investing in People: The New Role of Safety Nets in Africa*, Directions in Development: Human Development (Washington: World Bank).
- Muinelo-Gallo, Leonel, and Oriol Roca-Sagalés, 2013, "Joint Determinants of Economic Growth, Income Inequality, and Fiscal Policies," *Economic Modelling*, Vol. 30, pp. 814–24.
- Munoz, S., and S. Cho, 2004, "Social Impact of a Tax Reform: The Case of Ethiopia," *In Helping Countries Develop: The Role of Fiscal Policy*, ed. S. Gupta, B. Clements, and G. Inchauste, pp. 353–84 (Washington: International Monetary Fund).
- Mukoyama, T., and A. Sahin, 2006, "Costs of Business Cycles for Unskilled Workers," *Journal of Monetary Economics*, Vol. 53, No. 8, pp. 2179–93.
- Niehues, J., 2010, "Social Spending Generosity and Income Inequality: A Dynamic Panel Approach," IZA Discussion Paper No. 5178 (Cologne: Institute for the Study of Labor).
- Norregaard, J., 2013, "Taxing Immovable Property: Revenue Potential and Implementation Challenges," IMF Working Paper No. 13/129 (Washington: International Monetary Fund).
- O'Donoaghue, C., M. Baldini, and D. Mantovani, 2004, "Modelling the Redistributive Impact of Indirect Taxes in Europe: An Application of EUROMOD," Euromod Working Paper EM7/01 (Colchester: University of Essex).
- Ospina, M., 2010, "The Effect of Social Spending on Income Inequality: An Analysis for Latin American Countries," *Economia y Finanzas*, No. 10–03 (Medellin: EAFIT University).
- Organisation for Economic Co-operation and Development (OECD), 2006, *Employment Outlook 2006* (Paris).
- , 2008, *Growing Unequal? Income Distribution and Poverty in OECD Countries* (Paris).
- , 2010, "Income Distribution and Growth: Outline and Literature Review, Working Party No. 1 on Macroeconomic and Structural Policy Analysis," Economics Department Working Paper ECO/CPE/WP1(2010)16 (Paris).
- , 2011a, *Divided We Stand: Why Inequality Keeps Rising* (Paris: Organization for Economic Cooperation and Development). Available at: <http://dx.doi.org/10.1787/9789264119536-en>.
- , 2011b, *Education at a Glance 2011*, OECD indicators, OECD Publishing (Paris). Available at: <http://dx.doi.org/10.1787/eag-2011-en>.

- , 2012, "Income Inequality and Growth: The Role of Taxes and Transfers," OECD Economics Department Policy Notes, No. 9 (Paris).
- , 2013, *Action Plan on Base Erosion and Profit Shifting* (Paris).
- Paglin, M., 1975, "The Measurement and Trend of Inequality: A Basic Revision," *American Economic Review*, Vol. 65, September, pp. 598–609.
- Paulus, A., M. Čok, F. Figari, P. Hegedüs, N. Kump, O. Lelkes, H. Levy, C. Lietz, S. Lüpsik, D. Mantovani, L. Morawski, H. Sutherland, P. Szivos, and A. Vörk, 2009, "The Effects of Taxes and Benefits on Income Distribution in the Enlarged EU," EUROMOD Working Paper EM8/09 (Essex: University of Essex).
- Paulus, A., H. Sutherland, and P. Tsakloglou, 2009, "The Distributional Impact of In-Kind Public Benefits in European Countries," EUROMOD Working Paper EM10/09 (Essex: University of Essex).
- Piketty, T., E. Saez, and S. Stantcheva, 2011, "Optimal Taxation of Top Labor Incomes: A Tale of Three Elasticities," NBER Working Paper No. 17616 (Cambridge, Massachusetts: National Bureau of Economic Research).
- Piketty, T., and G. Zucman, 2013, "Capital is Back: Wealth-Income Ratios in Rich Countries 1700–2010," Paris School of Economics.
- Pritchett, L., 2013, *The Rebirth of Education: Schooling Ain't Learning* (Baltimore: Brookings Institution Press).
- Rajan, R., 2010, *Fault Lines: How Hidden Fractures Still Threaten the World Economy* (Princeton: Princeton University Press).
- Robalino, D., L. Rawlings, and I. Walker, 2012, "Building Social Protection and Labor Systems: Concepts and Operational Implications," Social Protection and Labor Discussion Paper No. 1202 (Washington: World Bank).
- Rothstein, J., 2010, "Is the EITC as Good as an NIT? Conditional Cash Transfers and Tax Incidence," *American Economic Journal: Economic Policy*, American Economic Association, Vol. 2, No. 1, pp. 177–208.
- Saez, E., 2001, "Using Elasticities to Derive Optimal Income Tax Rates," *Review of Economic Studies*, Vol. 68, No. 1, pp. 205–29.
- Saez, E., 2002, "Optimal Income Transfer Programs: Intensive versus Extensive Labor Supply Responses," *Quarterly Journal of Economics*, Vol. 117, pp. 1039–73.

- , J. Slemrod, and S. Giertz, 2012, "The Elasticity of Taxable Income with Respect to Marginal Tax Rates: A Critical Review," *Journal of Economic Literature*, Vol. 50, No. 1, pp. 3–50.
- Schiff, J., 1985, "Does Government Spending Crowd Out Charitable Contributions," *National Tax Journal*, Vol. 38, 535–46.
- Shang, B., 2014, "Pension Reform and Equity: The Impact of Reducing Pension Benefits on Poverty," in *Equitable and Sustainable Pensions: Challenges and Experience*, ed. by Benedict Clements, Frank Eich, and Sanjeev Gupta (Washington, forthcoming).
- Soares, S., R. Osório, F. Soares, M. Medeiros, and E. Zepeda, 2007, "Conditional Cash Transfers in Brazil, Chile, and Mexico: Impacts Upon Inequality," IPC Working Paper 35 (Brasilia: International Poverty Centre).
- Sorensen, P. B., 2005, "Dual Income Taxation: Why and How?" CESifo Working Paper No. 1551.
- Stiglitz, J., 2012, *The Price of Inequality: How Today's Divided Society Endangers Our Future* (New York: W.W. Norton and Company).
- Subbarao, K., C. del Ninno, and C. Rodriguez-Alas, 2013, *Public Works as a Safety Net: Design, Evidence, and Implementation*, Directions in Development, Human Development (Washington: World Bank).
- Tanzi, V., and K-Y. Chu (eds.), 1998, *Income Distribution and High Quality Growth* (Washington: International Monetary Fund).
- , and S. Gupta, eds., 1999, *Economic Policy and Equity* (Washington: International Monetary Fund).
- Torres, C., K. Mellbye, and B. Brys, 2012, "Trends In Personal Income Tax Employee Social Security Contribution Schedules," OECD Taxation Working Papers No. 12 (Paris: Organisation for Economic Co-operation and Development).
- Tsibouris, G., M.A. Horton, M.J. Flanagan, and W.S. Maliszewski, 2006, "Experience with Large Fiscal Adjustments," IMF Occasional Paper No. 246 (Washington: International Monetary Fund).
- United States Agency for International Development (USAID), 2013, "Collecting Taxes, Full Data 2012" (Washington).
- Van de Walle, D., 1995, "Incidence and Targeting: An Overview of Implications for Research and Policy," in *Public Spending and the Poor*, ed. by D. van de Walle, and K. Nead (Washington: World Bank).

- Whalley, J., 1984, "Regression or Progression: The Taxing Question of Incidence Analysis," *Canadian Journal of Economics*, Vol. 17, No. 4, pp. 654–82.
- 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 (Washington: International Monetary Fund).
- Woodhall, M., 2007, "Funding Higher Education: the Contribution of Economic Thinking to Debate and Policy Development," Education Working Paper Series, No. 8 (Washington: World Bank).
- World Bank, 2006, *Equity and Development*, World Development Report 2006 (Washington and New York: World Bank and Oxford University Press).
- World Health Organization (WHO), 2010, *The World Health Report 2010—Health Systems: Improving Performance* (Geneva: World Health Organization).