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Income Inequality and Fiscal Policy

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EXECUTIVE SUMMARY

Income inequality has increased in most advanced and many developing economies over recent decades, reflecting a range of factors including globalization and technological change. Even more striking is the large variation in average disposable (post-tax-and-transfer) income inequality across regions, much of which can be accounted for by differences in the level and progressivity of tax and spending policies. In advanced economies, fiscal policy has played a significant role in reducing income inequality, especially on the expenditure side but also through progressive income taxation. However, reforms since the mid-1990s have lessened the generosity of social benefits and the progressivity of income tax systems in these economies making fiscal policy less redistributive.

In the context of fiscal consolidation in many economies, tax and spending measures should enhance or maintain the distributive effects of fiscal policy while supporting economic efficiency. Such measures include reducing opportunities for tax evasion and avoidance, increasing the progressivity of income taxes over higher income brackets, cutting unproductive expenditures, and expanding means-tested programs. Enhancing the distributive impact of fiscal policy in developing economies will require improving their capacity to raise tax revenues and to spend those resources more efficiently and equitably. Resource mobilization should focus on broadening income and consumption tax bases and expanding corporate and personal income taxes by reducing tax exemptions and improving compliance. Expenditure reforms should focus on reducing universal price subsidies, improving the capacity to implement better targeted transfers, and gradually expanding social insurance systems.

This is a revised version of SDN/12/08 (published on June 28, 2012), which incorporates updated data on international Gini coefficients. Figure 1, Table 1, and Appendix Table 1 have been updated to include the new data.

I. INTRODUCTION

Rising income inequality is a growing concern for policymakers in many economies.[2] These concerns have recently been heightened by social unrest in the Middle East, high unemployment in many advanced economies in the aftermath of the financial crisis, rapid income growth among the very rich in the past three decades in relation to other income groups, and the possible adverse impact of fiscal consolidations on low-income groups in a number of advanced and emerging economies. Income inequality has been increasing in many advanced economies since 1980 owing to a range of factors, including:

- widening inter-regional inequality within economies;
- globalization, which has exerted downward pressure on the wages of low-skilled workers;
- technological change, which has favored high-skilled workers;
- institutional and regulatory reforms that have increased competition in product and factor markets and decreased the bargaining power of labor;
- increases in labor force participation by low-skilled workers; and
- the growing importance of high-income couples and single-parent households.

At the same time, high economic growth in many developing economies has also been accompanied by rising income inequality, including in China and India.

Many policymakers view a more equal income distribution as a desirable goal, although the underlying motivations may differ. Lower income inequality is often viewed as important for achieving greater equality of opportunities to access economic, social, and political resources. Others view it as intrinsically desirable because the existing income inequality is perceived to be the outcome of unfair access to resources and thus detrimental to social cohesion. Although some inequality is deemed necessary to provide incentives for investment and economic growth (Barro, 2000; Forbes, 2000), there is also evidence that high inequality may retard growth, especially if it reflects credit market imperfections or political corruption or if it causes political instability (Berg and Ostry, 2011). Some have

[2]On the broader economic policy implications of income inequality, see Atkinson (1997), Tanzi and Chu (1998), and Tanzi, Chu, and Gupta (1999).

argued that rising income inequality was an important contributing factor to the recent financial crisis.[3]

This staff discussion note focuses on how fiscal policy can address income inequality in both advanced and developing economies.[4] It reviews the relevant literature and assembles a comprehensive database on disposable (i.e., post-tax-and-transfer) income inequality for 22 advanced and 128 developing economies. Fiscal policy can influence income distribution both *directly* through its effect on current disposable incomes and *indirectly* through its effect on the future earnings capacities—and therefore on market (i.e., pre-tax-and-transfer) incomes—of individuals. Its role is likely to vary across economies, reflecting differences both in available fiscal instruments and in social preferences regarding equity and the role of government. The paper therefore focuses on what has been, rather than what should be, the redistributive impact of fiscal policy and how this can be enhanced if seen as desirable. When designing redistributive policies, it is also important to recognize that redistributive tax-benefit systems can introduce economic inefficiencies, since individuals and firms change their behaviors to avoid paying taxes or to maximize the transfers they receive, reducing the overall size of the "income pie" being redistributed. This efficiency cost of redistribution typically increases with the extent of redistribution. In practice, therefore, there is a limit to redistribution, reflecting both these inefficiencies and the recognition that not all income inequality is unfair or undesirable. It is also important to focus on the overall tax and transfer system (as opposed to its individual components) when designing fiscal policies to address income inequality.

The following sections review the evolution of income inequality over recent decades in advanced and developing economies and discuss how fiscal policy has influenced these outcomes. The focus is on the direct impact of fiscal policy on income inequality, that is, on how the inequality of disposable income compares to the inequality of market incomes. The note starts by describing recent regional trends in disposable income inequality both over time and across a large sample of advanced and developing economies. Changes in income inequality after the onset of the financial crisis are also discussed. The note then examines the contributions of both tax and expenditure policies in reducing income inequality in advanced and developing economies, highlighting fiscal policy's declining redistributive impact in advanced economies over the last decade as well as its relatively low redistributive impact in

[3]Fitoussi and Saraceno (2009) argue that increasing inequality has depressed aggregate demand, resulting in a monetary policy that has maintained low interest rates, thus fuelling a debt spiral among households. This was exacerbated by investor behavior, which created an asset bubble as investors searched for higher returns. 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.

[4]In this note, the category "developing economies" covers emerging and low-income economies.

developing economies. This is followed by a discussion of how fiscal consolidation strategies can be designed to address distributive concerns. Finally, lessons for the design of fiscal policy are summarized.

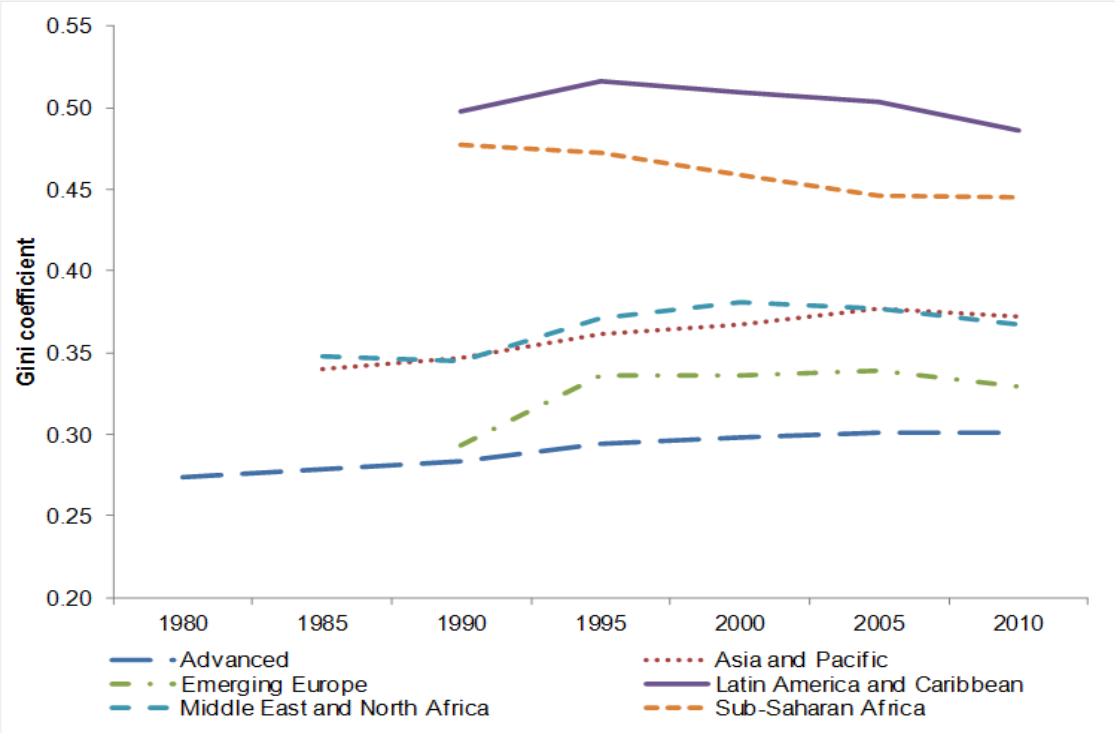
II. Trends in Income Inequality

Trends in income inequality often depend on the inequality indicator being used. The most widely used and widely available inequality measure is the Gini coefficient.[5] Although the Gini is sensitive to what happens to income shares in the tails of the income distribution, it is more sensitive to changes in shares in the middle of the distribution. For this reason, it is common to supplement the Gini with an analysis of inequality at the extremes of the income distribution, such as the share of the top income quintile divided by the share of the bottom quintile. The discussion below focuses primarily on the Gini coefficient but makes reference to other inequality measures whenever observed trends differ in a substantive manner—Appendix 1 provides details on the construction of the international Gini database used. The discussion below focuses initially on long-term trends up to immediately prior to the recent financial crisis, and then on what has happened since the crisis.

Differences in disposable income inequality across regions are considerably greater than changes in regional averages over time. Figure 1 presents trends in the Gini coefficient for disposable income (i.e., market incomes minus direct taxes plus cash transfers) across regions over recent decades. Between 1990 and 2005, average inequality in each region changed by less than 4.5 percentage points. In contrast, while average inequality in the two most unequal regions (Sub-Saharan Africa and Latin America) exceeded a Gini of 0.45 every year, average inequality in the two most equal regions (emerging Europe and advanced economies) was less than 0.34, a difference of 11 percentage points. Measures that capture inequality at the extremes of the distribution display a similar pattern. For instance, the correlation between extreme inequality measures (including the 90/10 and 80/20 income percentiles and income-share ratios) and the Gini exceeds 0.9.

[5]The Gini coefficient ranges between 0 (complete equality, with everyone having the same income) and 1 (complete inequality, with one person having all the income). For example, a Gini of 0.3 (or 30 percent) indicates that if two persons were chosen at random from the population, the expected difference between their incomes would be 60 percent of the mean income.

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



Source: Appendix 1 provides details on the underlying country-specific database.

These averages hide substantial variation in trends within some regions. Inequality increased in nearly all advanced and emerging European economies. Between 1990 and 2005, one-third of advanced economies and two-thirds of emerging Europe experienced increases exceeding 3 percentage points (Table 1). Inequality increased by more than 5 percentage points in half of emerging Europe, with most of these increases occurring between 1990 and 1995. Although inequality also increased in over half of the economies in Latin America during the same period, it has recently started to decline there, with decreases observed in nearly all economies since 2000. Inequality increased in most economies in Asia and the Pacific as well, yet two economies there witnessed decreases in excess of 3 percentage points. In Sub-Saharan Africa, although the region's average inequality has fallen, inequality has increased by more than 3 percentage points in seven countries. And while inequality in the Middle East and North Africa has increased by over 3 percentage points in over one-third of countries, it decreased by over 5 points in two countries.

Table 1. Changes in Disposable Income Inequality Across Regions, 1990–2005
(Percentage-point change in Gini coefficient)

	Change	Large Increase (Change ≥ 5)	Medium Increase (3 ≤ Change < 5)	Small Increase (0 < Change < 3)	Small Decrease (-3 < Change < 0)	Medium Decrease (-5 < Change ≤ -3)	Large Decrease (Change ≤ -5)
Latin America and Caribbean	*1990-2005*	Colombia, Honduras, Paraguay, Venezuela, RB	Bolivia, Costa Rica, Uruguay	Argentina, Dominican Republic, Guatemala, Jamaica	El Salvador, Panama	Brazil, Chile, Ecuador, Nicaragua, Peru	Belize, Mexico
Sub-Saharan Africa	*1990-2005*	Cote d'Ivoire, Ghana, Niger, Rwanda, South Africa	Mozambique, Tanzania	Burundi, Madagascar, Zambia	Cameroon, Nigeria, Uganda	Gambia, The	Burkina Faso, Central African Republic, Ethiopia, Guinea, Guinea-Bissau, Kenya, Lesotho, Malawi, Mali, Namibia, Senegal, Swaziland
Asia and Pacific	*1990-2005*	China, Indonesia, Korea, Rep., Lao PDR, Nepal, Sri Lanka	Bangladesh, Cambodia, Taiwan	India, Mongolia, Philippines, Vietnam		Thailand	Malaysia
Middle East and North Africa	*1990-2005*	Kyrgyz Republic, Tajikistan, Turkmenistan, Uzbekistan	Djibouti	Egypt, Arab Rep., Mauritania, Morocco, Tunisia	Pakistan		Iran, Islamic Rep., Jordan
Emerging Europe	*1990-2005*	Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Kazakhstan, Latvia, Lithuania, Macedonia, FYR, Moldova, Poland, Ukraine	Albania, Georgia, Russian Federation	Azerbaijan, Hungary, Serbia, Slovenia, Turkey			Armenia, Estonia
Advanced	*1980-2005*	New Zealand, Norway, Portugal, United Kingdom, United States	Austria, Belgium, Canada, Finland, Germany, Luxembourg, Sweden	Australia, Italy, Japan, Netherlands, Spain	Denmark, France, Greece, Ireland	Switzerland	
	1990-2005	Norway, Portugal, United States	Belgium, Canada, Finland, Germany, Italy	Austria, Japan, Luxembourg, New Zealand, Spain, Sweden, United Kingdom	Australia, Denmark, France, Greece, Ireland, Netherlands	Switzerland	

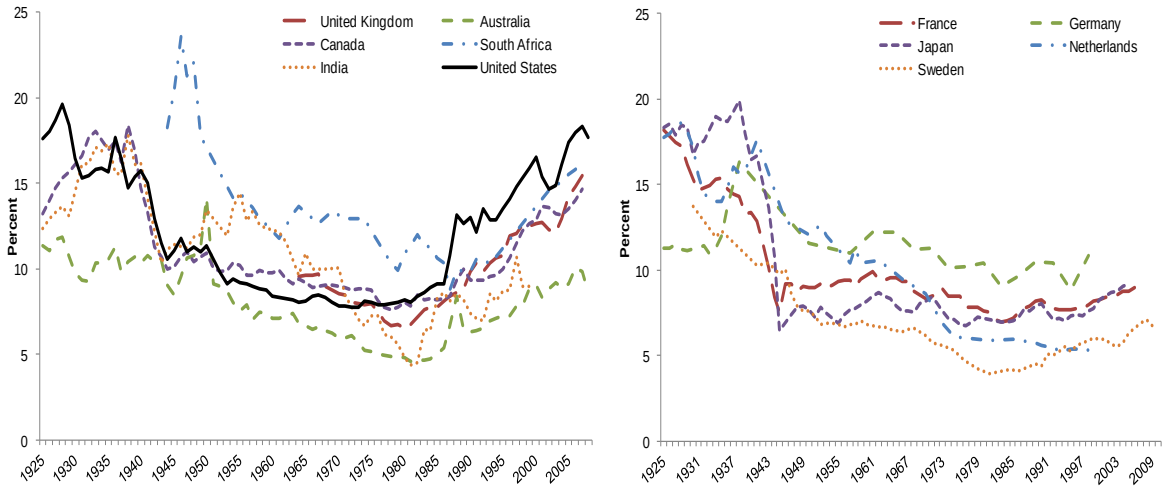
Source: Appendix 1 provides details of the underlying country-specific database; 1980 data are only available for advanced economies.

More recently, the focus has been on the sharp increase in the share of total income of the top income groups. Over the last three decades, the pre-tax-and-transfer income (i.e., market income) shares of the richest have increased substantially in English-speaking advanced economies, as well as in India and China, but much less so in Southern European and Nordic economies, and hardly at all in continental Europe and Japan (Figure 2).[6] For

[6]This concentration of income is also mirrored in the unequal distribution of global wealth, with the wealthiest 0.5 percent of the global population accounting for more than 35 percent of total global wealth (Credit Suisse Research Institute, 2010).

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 2008, while the share of the richest 1 percent increased from 8 percent to 18 percent.[7] More striking, the income share of the richest 0.1 percent increased fourfold, from 2.6 percent to 10.4 percent.

Figure 2. Gross Income Share of Top One-Percent in Selected Advanced and Developing Economies, 1925–2010



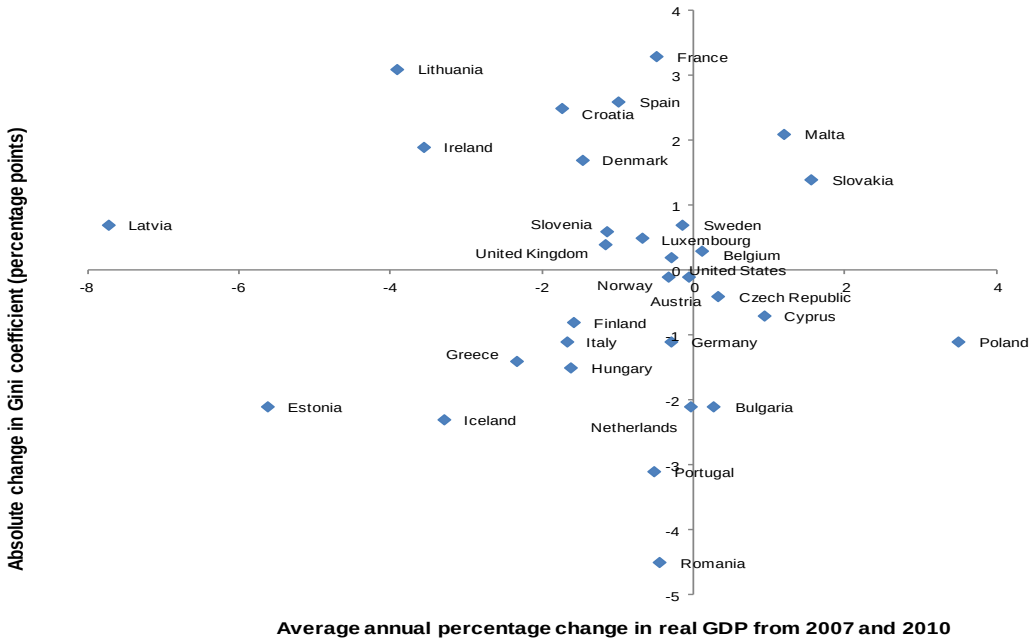
Source: The World Top Incomes Database. Available at: http://g-mond.parisschoolofeconomics.eu/topincomes/.
Note: Income typically refers to pre-tax-and-transfer gross income (see Atkinson, Piketty, and Saez, 2011, for details).

There does not as yet appear to be any discernible pattern to changes in income inequality in the aftermath of the financial crisis (Jenkins and others, 2011). In Ireland, where the macroeconomic shock was relatively large, inequality declined early in the crisis because of a relatively large fall in top incomes (especially capital incomes), increases in taxes, and an expansion of redistributive social transfers (Nolan, Callan, and Maitre, 2011). However, as the crisis in Ireland deepened and fiscal consolidation efforts intensified, inequality started to increase, with the Gini coefficient increasing by nearly 2 percentage points by end-2010 (Figure 3). In contrast, in Italy, the Gini coefficient increased by 1 percentage point initially (as income losses from unemployment were only partially compensated for by the transfer system) but eventually showed a decrease as the crisis evolved. Changes in inequality have also varied among those worst hit by the crisis—with the Gini increasing in Latvia and Lithuania but falling in Estonia, Greece, and Iceland—as well as among those economies that experienced smaller macroeconomic impacts (the Gini increased in France and Spain but fell in Portugal and the Netherlands). In the United States,

[7]Note that these shares are likely to underestimate the income share of the rich, since they are typically based on tax return data and often exclude non-realized capital gains and non-reported incomes. For example, for the United States, estimates of the true share of the top 1 percent show that they received in excess of 20 percent of total income in 2007 (U.S., Congressional Budget Office, 2011). The concentration of wealth is even higher, with the top 1 percent accounting for nearly 35 percent of total wealth (Dumhoff, 2011).

the Gini changed little, with the expansion of public transfers offsetting the inequality impact of high unemployment during the crisis (Thompson and Smeeding, 2011). Experience with past crises suggests that the distributional effects of such a crisis can take many years to work their way through the system (Atkinson and Morelli, 2011).

Figure 3. Disposable Income Inequality Trends Since the Financial Crisis, 2007–2010



Source: Staff estimates. Gini coefficients are taken from Eurostat for all countries except the United States, for which they are taken from Thompson and Smeeding (2011).

III. Fiscal Policy and Income Inequality

Evaluating the impact of fiscal policies on the distribution of income requires comparing incomes in the presence of tax and transfer policies with those in the absence of such policies. This comparison is complicated by the fact that the actual incidence of tax and transfer policies may differ from their statutory incidence. In principle, determining the actual incidence of fiscal policies requires specifying the structure of the economy (including the competitiveness of various sectors and the openness of the economy) and having information on the magnitude of consumers' and producers' behavioral responses to taxes and transfers. In practice, however, most studies focus on statutory incidence, since sufficient data on market structure and behavioral responses are often unavailable. In these studies, the incidence of commodity taxes is typically assumed to fall on consumers, that of factor taxes is assumed to fall on factor suppliers, and transfers to beneficiaries do not adjust their factor supplies. Virtually all studies reviewed below make such assumptions.

A. Advanced Economies

Fiscal policy has played a significant role in reducing income inequality in advanced economies, especially in economies with high initial pre-tax and transfer inequality. In every year between 1985 and 2005, fiscal policy (i.e., direct income taxes and transfers) decreased the average Gini in 25 OECD countries by about one-third, that is, by around 15 percentage points (OECD, 2008, 2011a).[8] In 2005, for example, fiscal policy reduced income inequality by around 20 or more points in seven economies (Belgium, Denmark, Germany, Italy, Luxembourg, Poland, and the Slovak Republic) and by less than 10 points in five economies (Korea, Iceland, Ireland, Switzerland, and the United States). On average, the decrease in inequality brought about by tax and transfer policies was greater in economies with higher inequality of market income, so that differences across economies in inequality of disposable income are much smaller than differences in market income inequality. The distributive impact is even higher when indirect taxes and in-kind benefits are allowed for (see below).

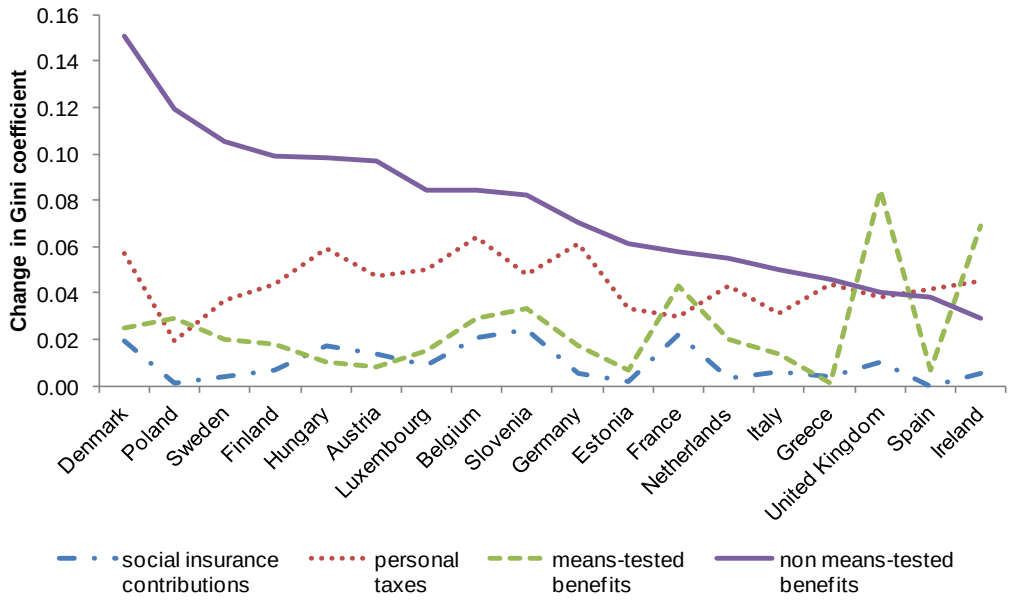
Most of the redistributive impact of fiscal policy is achieved through the expenditure side of the budget, especially non-means-tested transfers, although income taxes are also important in many economies. On average, the redistribution achieved by public cash transfers is twice as large as that achieved through taxes (Figure 4)—only in the United States are taxes more redistributive than transfers (OECD, 2008).[9] This is in spite of the fact that the magnitude of direct taxes is typically substantially larger than that of public transfers. Non-means-tested transfers (including public pensions and universal child benefits) account for the bulk of the redistribution on the expenditure side, especially in the Nordic economies, Austria, Belgium, Poland, and Hungary (Immervoll and others, 2005; Paulus and others, 2009). On the tax side, income taxes achieve the greatest amount of redistribution—in fact, in most economies, the redistribution achieved through income taxes is even higher than for means-tested transfers.[10] Both the United Kingdom and Ireland stand out as the only economies where means-tested benefits are responsible for most of the redistribution.

[8]This finding is also confirmed by Brandolini and Smeeding (2009) and Atta-Darkua and Barnard (2010) using different data sets.

[9]OECD (2008) also finds that, with the exception of the United States, transfers are responsible for most of the redistribution towards the bottom of the income distribution.

[10]The United States is an exception in that the income tax system plays a relatively strong role in redistributing income towards low-income families (OECD, 2008).

Figure 4. Redistributive Impact of Income Taxes and Transfers in the EU for Early 2000s

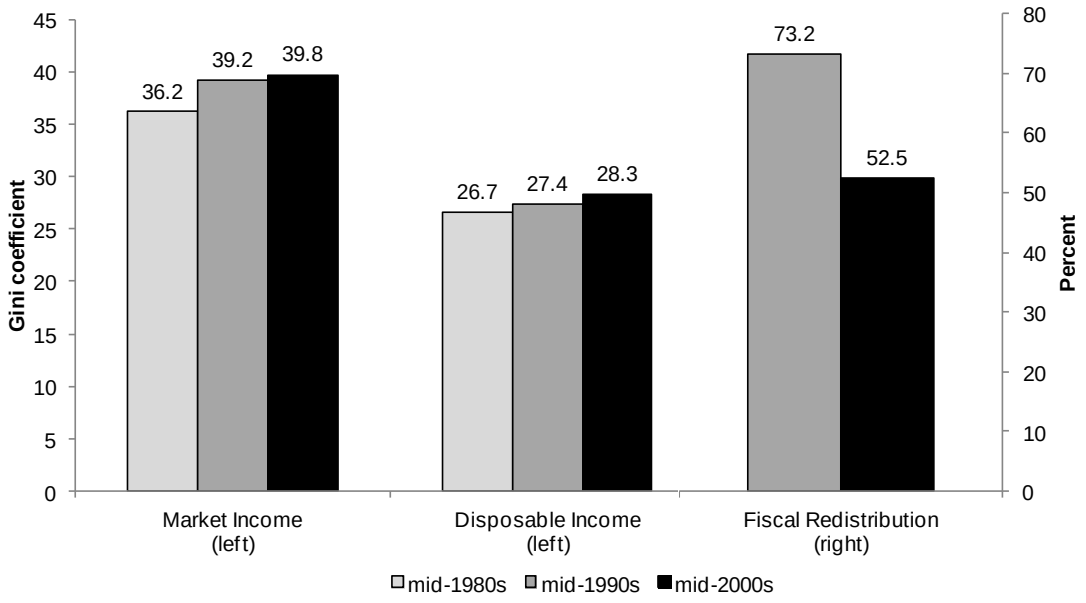


Source: Based on Table 5 in Paulus and others (2009).
Note: Lines show the increase in the Gini coefficient of disposable income due to the removal of each tax and transfer. Policies simulated reflect those existing between 2000 and 2005, depending on the country.

However, the redistributive impact of fiscal policy has decreased since the mid-1990s. Between the mid-1980s and mid-1990s, the Gini coefficient for market income increased by 3 percentage points, while that for disposable income increased by only 0.8 points (Figure 5). Over the same period, the *decrease* in inequality due to fiscal policy (i.e., the difference between the market income Gini and the disposable income Gini) increased by 2.2 percentage points, from 9.5 in the mid-1980s to 11.7 in the mid-1990s. As a result, fiscal policy offset 73 percent of the 3 percentage-point increase in market income inequality. Although the inequality of market income increased by less over the subsequent decade, the distributive impact of fiscal policy actually diminished. As a result, during the two decades from the mid-1980s to the mid-2000s, fiscal policy offset a much lower 53 percent of this increase, and market income inequality still grew by twice as much as redistribution.

This fall in the redistributive impact of fiscal policy reflected policy reforms that reduced the overall progressivity of the tax-benefit system. In the absence of policy reforms, the distributive impact of progressive tax-benefit systems tends to automatically increase as market income inequality increases (e.g., due to higher unemployment or increasing incomes of higher income groups). However, in many economies, reforms since the mid-1990s have reduced the generosity of social benefits, particularly unemployment and social assistance benefits, and have also reduced income tax rates, especially at higher income levels (OECD, 2011a).

Figure 5. Diminishing Redistributive Impact of Fiscal Policy Since Mid-1990s



Source: Authors' calculations based on OECD (2011a, Table 7.2).
Note: Fiscal distribution is defined as the ratio of the change in distributional impact of fiscal policy between two points of time (e.g., between mid-1980s and mid-1990s) to the change in market income inequality over the same periods, and therefore captures the percent of the increase in market income inequality that was offset by an increase in the distributive impact of fiscal policy. In both cases, changes are relative to the mid-1980s base.

A key fiscal policy challenge is the need to balance often competing redistributive and efficiency objectives. However, although redistribution through tax and benefit systems can dilute work incentives across the income distribution, improved design can reduce this equity-efficiency trade-off.

A large part of the efficiency cost arises from the use of means tested social benefits, that is, where benefits are withdrawn as earnings increase. This has provided large disincentives for low-skilled workers to take up employment opportunities (OECD, 2011b). 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 2 to 4 euros in most economies. To reduce this equity-efficiency trade-off, many countries have introduced "in-kind benefits" that link receipt of benefits to employment. Countries have also expanded the use of active labor market programs aimed at tightening rules for continued eligibility for unemployment benefits, including more intensive job search requirements and participation in training. However, designing and implementing such policies requires substantial administrative capacity.

Progressive income tax schedules can have similar disincentive effects among higher income groups. Such concerns motivated the reduction in top income tax rates in many economies during the 1980s, which was followed by relatively high income growth at the top of the

income distribution (Saez, 2004; Atkinson and Leigh, 2010; Roine, Vlachos, and Waldenstrom, 2009). But recent research has argued that the efficiency cost of progressive taxation may be much smaller than previously thought. For instance, Piketty, Saez, and Stantcheva (2011) have argued that the absence of any correlation between rising top incomes and per capita GDP growth indicates that increases in top incomes primarily reflect rent-seeking behavior (i.e., income increases are achieved at the expense of other income groups) as opposed to productivity increases. This has led to calls for more progressive taxation on higher income groups, especially higher taxation of "high net wealth" individuals (Tanzi, 2011). However, existing opportunities for tax evasion and avoidance, which are typically greater for higher income groups, also need to be removed, since these can heavily distort the structure of remuneration in response to more progressive income taxation (e.g., through the shifting of remuneration toward stock options and capital gains) and also reduce the revenue potential and redistributive impact of income taxes (Gruber and Saez, 2002).

The overall redistributive impact of fiscal policy is also influenced by both indirect taxes and in-kind transfers. The above studies focused only on the impact of direct income taxes and transfers. Empirical evidence suggests that although indirect taxes tend to increase inequality, in-kind transfers (such as education and health spending) are highly redistributive.

- *Indirect taxes:* In an analysis of 12 European Union economies, the effective indirect tax rate, calculated as the share of consumption taxes in total household income, is on average three times higher for the bottom income decile than for the top decile (O'Donoaghue, Baldini and Mantovani, 2004). While both the value-added tax (VAT) and excise duties are regressive in all economies, excise taxes are especially regressive, their share in total income being four times higher in the bottom income decile than in the top decile.[11]

- *In-kind transfers:* A high share of public spending is allocated to the provision of education, health care, housing, and food transfers to the population (Garfinkel, Rainwater, and Smeeding, 2006; Brandolini and Smeeding, 2009; Aaberge and others, 2010).[12] Each component of in-kind transfers tends to reduce inequality: public housing benefits tend to be targeted at low-income households, while public education and health services are disproportionately used by households with children and elderly who are typically concentrated in the lower parts of the disposable income distribution. On average, in-kind transfers decreased the Gini coefficient by 5.8 percentage points in five

[11]Similar results were found by Decoster and others (2009) for five economies (Belgium, Greece, Hungary, Ireland, and the United Kingdom) and in a review of studies of OECD economies by Warren (2008).

[12]As noted earlier, such spending can also have an important longer-term impact on the distribution of market incomes. For example, higher education spending can increase education outcomes in general, contribute to higher growth, and lead to a more equal distribution of income growth over time (Roll and Talbott, 2002; Harberger, 2003).

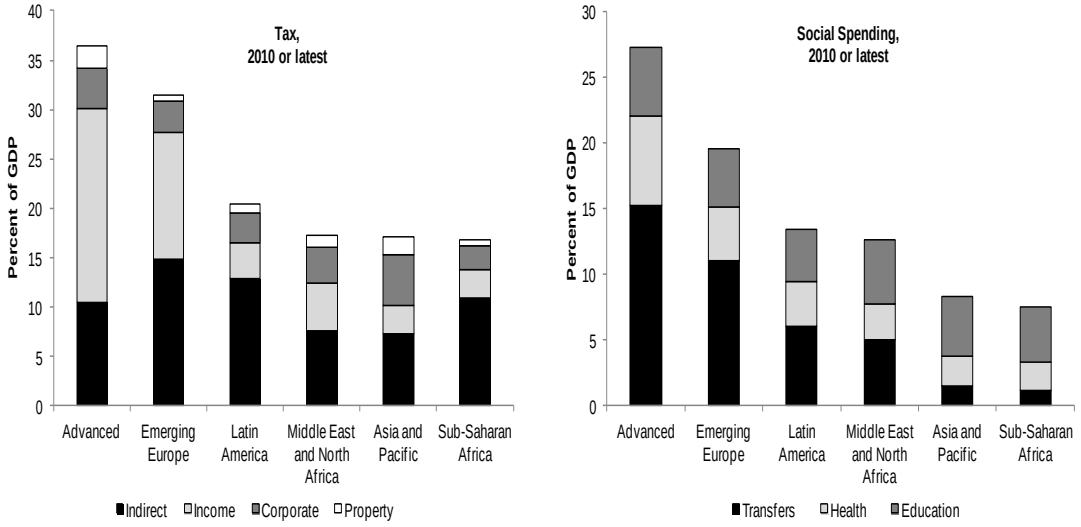
European economies (Belgium, Germany, Greece, Italy, and the United Kingdom), with health (3.6 points) and education (2.2 points) accounting for virtually all of this impact (Paulus, Sutherland, and Tsakloglou, 2009).

In addition, very few incidence studies include corporate income taxes, partly reflecting the difficulty associated with establishing where incidence lies. 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 economies (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 as would appear at first sight. But progressivity could be higher to the extent that low-skilled labor is a good substitute for capital.

B. Developing Economies

The redistributive impact of fiscal policy in developing economies is severely restricted by lower overall levels of both taxes and transfers. While average tax ratios for advanced economies exceed 30 percent of GDP, ratios in developing economies (excluding emerging Europe) generally fall in the range 15–20 percent of GDP (Figure 6). As a result, spending is also substantially lower in developing economies, but especially in Asia and the Pacific and in Sub-Saharan Africa, with low transfer spending explaining most of the difference. This substantially reduces the redistributive potential of fiscal policy in developing economies. For instance, almost three-quarters of the difference in disposable income inequality between Latin American economies and advanced economies can be explained by fiscal policy (Box 1).

Figure 6. Levels and Composition of Tax Revenues and Social Spending



Source: IMF database.

Box 1. Fiscal Policy and Income Inequality in Latin America

Fiscal policy has been much less effective at decreasing income inequality in Latin America than in advanced economies. Goñi, López and Servén (2008) find that, in the mid-2000s, the tax and transfer system decreased the average Gini (i.e., the difference between the Ginis for market and disposable incomes) in six Latin American economies (Argentina, Brazil, Chile, Colombia, Mexico, and Peru) by only about 2 percentage points, from 0.52 to 0.50—similar magnitudes are reported by Lustig and others (2011) using more recent data. This compares to a decrease of around 20 percentage points in 15 European economies, from 0.46 to 0.27. Almost three-quarters of the difference in the Ginis for disposable income between these Latin America and European countries (18 out of the 23 points) can therefore be explained by different fiscal policies.

The ineffectiveness of fiscal policy in reducing income inequality reflects both low tax and spending levels and a less progressive tax and spending mix. In spite of recent increases in the tax-to-GDP ratio, tax collections in the region are below the levels achieved in economies with similar levels of income, with the median being 4 percentage points lower (Goñi, López and Servén, 2008). Increases in the tax ratio have also been achieved through a greater reliance on regressive indirect taxes and a decreasing share of more progressive income taxation. The low tax ratio reflects narrow tax bases (due to tax evasion, numerous loopholes, a large informal sector and weak tax administrations) rather than low tax rates. These limitations also tend to decrease the redistributive impact of taxes. On the expenditure side, most Latin American economies spend substantially less on social transfers than advanced economies do (Lindert, Skoufias, and Shapiro, 2006); 7.6 percent of GDP in the above six economies compared to 16.3 percent in the 15 European economies. In addition, whereas social spending in Europe is distributed evenly across the income distribution, in Latin America the richest 40 percent of the income distribution capture over 70 percent of such spending.

Low tax and spending levels are compounded by a heavy reliance on regressive tax instruments as well as by the low coverage and benefit levels of transfer programs.[13]

- *Indirect Taxes*: The redistributive potential of taxes in developing economies is limited by greater reliance on indirect taxes and narrower tax bases. Taxes have been found to have only a small impact on income inequality in developing economies, with the average Gini for disposable income of 0.34 being only slightly below the pre-tax income inequality of 0.38 (Chu, Davoodi, and Gupta, 2004). Taxes on imports, which continue to be important in low-income economies, often appear to be among the most regressive, while excise taxes—such as fuel, alcohol, and tobacco excises—tend to be progressive. Although the distributive impact of value-added taxes has been found to be mixed, there is strong evidence that the exemption of small businesses (including agriculture and the informal sector) can result in a progressive incidence (Jenkins, Jenkins, and Kuo, 2006).

- *Direct taxes*: In general, personal income and property taxes in developing economies are progressive. However, high levels of tax noncompliance combined with narrow tax bases—due to widespread exemptions and the preferential treatment of capital and other income—contribute to low income tax ratios, low income tax progressivity, and the overall regressivity of tax systems.[14] Resource taxation can be progressive as well as efficient, though it is applied mostly to foreign incomes.

- *Expenditures:* Both low spending and poor targeting limit the redistributive capacity of transfer programs. The existence of a large informal sector further complicates the development of such programs. In most developing economies, participation in social insurance schemes is restricted to high-income workers in the formal sector and to public sector employees. For example, in the early 2000s, the share of the population above the legal retirement age in receipt of a pension in developing economies was, on average, around 40 percent, as compared to 90 percent in European economies (ILO, 2010). Expenditure on social assistance programs is also often low and poorly targeted (Coady, Grosh, and Hoddinott, 2004; Weigand and Grosh, 2008). In many developing economies, the fiscal space for expanding more distributive social transfers is constrained by large expenditures on regressive universal price subsidies, especially energy price subsidies (Coady and others, 2010; Arze del Granado, Coady, and Gillingham, 2010).

In-kind public spending has been found to be regressive in many developing economies, although individual components can be progressive. In many economies, this regressivity reflects lack of access by low-income households to key public services such as education

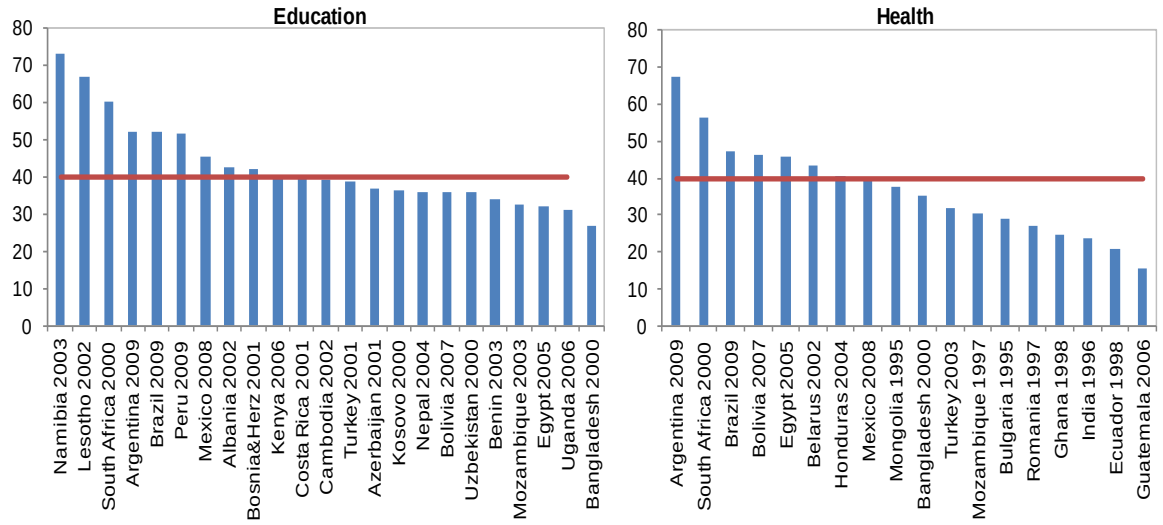
[13]Existing reviews of the distributional impact of taxes and transfers in developing economies include: Immervoll and others (2006), Gemmell and Morrissey (2005), Cubero and Hollar (2010), and Coady (2006).

[14]Although corporate income taxes are often progressive, they can be horizontally inequitable when levied only on large enterprises, allowing profitable medium-sized firms to escape the corporate tax net.

and health. Aggregate education and health spending is regressive in many developing economies, especially in low-income countries (Figure 7). In health, the progressivity of primary health care spending is dominated by the regressivity of higher-level health spending. In education, the progressivity of primary education spending is dominated by the regressivity of secondary and tertiary education spending. However, increases in in-kind spending to finance the expansion of basic education and health services are likely to be much more progressively distributed than existing spending (van de Walle, 1995).

Figure 7. Benefit Incidence of Education and Health Public Spending

(Percent of Public Spending Going to Poorest 40 Percent of Households)



Source: Davoodi, Tiongson, and Asawanuchit (2010), Lustig and others (2011), and data provided by the World Bank.

The recent expansion of "conditional cash transfer" programs provides a promising approach for enhancing the distributive power of public spending in developing economies. These programs target income transfers at poor households and condition the continued receipt of the transfer on households investing in the education and health of family members. Such programs have been adopted in many developing economies, including some low-income African economies, albeit on a smaller scale (Fiszbein and Shady, 2009; Garcia and Moore, 2012). In Latin America, 17 economies are currently operating conditional cash transfer programs, with program expenditures typically falling below 1 percent of GDP. It has been estimated that the largest programs, in Brazil and Mexico, have reduced the Gini for disposable income by 2.7 percentage points, accounting for about a fifth of the decrease in the Gini coefficient between the mid-1990s and the mid-2000s (Soares and others, 2007). However, these programs are most cost-effective when targeted at the poorest households, which tend to be most disadvantaged in terms of human capital, so expansions need to be carefully designed in order to generate human capital impacts and avoid labor supply disincentives.

IV. Fiscal Consolidation and Income Inequality

Fiscal consolidation affects income inequality in two ways. First, consolidation reduces output and increases unemployment in the short run (Blanchard and Perotti 2002; IMF 2010a, 2012), and this has typically been associated with a declining wage share. The declining wage share tends to increase inequality, given the relatively higher wage share in the total income of lower income groups (Rotemberg and Woodford, 1999; Jenkins and others, 2011). Increasing unemployment also tends to widen wage inequality, since low-wage workers are typically hit harder as employers hoard skilled labor and unskilled wages fall relative to skilled wages (Agenor, 2002; Mukoyama and Sahin, 2006). The duration and magnitude of these effects depends on the growth response and the employment intensity of this growth. Second, both the level and composition of tax and spending can be affected by fiscal consolidation. Income inequality will tend to increase the more fiscal adjustment relies on increasing regressive taxes (such as consumption taxes) or on cut-backs in progressive spending. The discussion below focuses on large fiscal consolidations, given that the inequality effects are likely to be more pronounced and many advanced countries will require sizeable fiscal adjustments over the coming decade.

A. Advanced Economies

Episodes of large fiscal adjustment in advanced economies have been associated with sizeable increases in unemployment in the short term (Figure 8).[15] In these cases, the distributive impact on household incomes in the short term depends on the size of automatic stabilizers, whether they are allowed to operate, and how quickly and strongly exports and private demand respond to reduced government demand. Increased expenditures on unemployment benefits help to contain the widening of income inequality, through their effect both in cushioning demand and in replacing lost wage incomes. But cut-backs in government services could worsen income distribution, given the heavy reliance of low-income households on these services. The effects of fiscal consolidation on unemployment have tended to reverse over the longer term (Clinton and others, 2010), although this may be muted to the extent that there is a permanent downward shift in potential output.

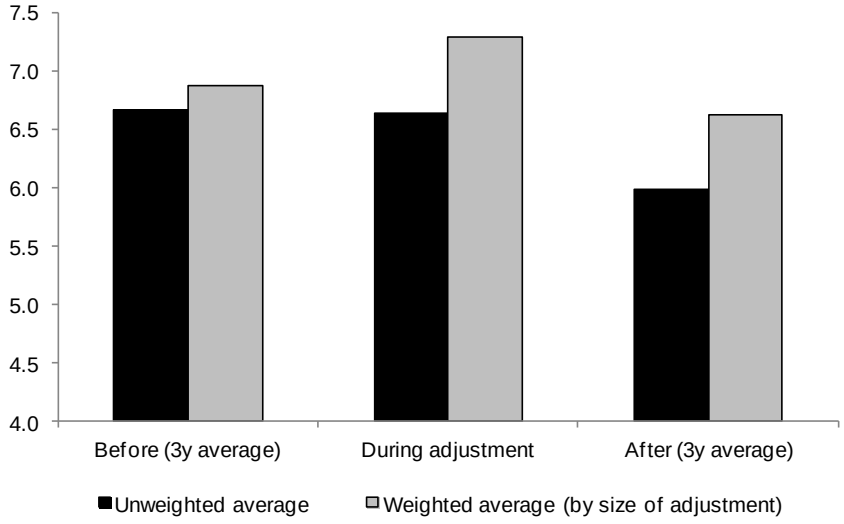
The mix of tax and spending measures during fiscal adjustment has also been an important determinant of the impact of consolidation on income inequality. Large and durable fiscal adjustments have typically been associated with significant expenditure cuts, including in redistributive social transfers (Alesina and Perotti 1995; Alesina and Ardagna, 2009). Consistent with this, adjustments biased towards expenditure cuts have tended to exacerbate income inequality (Agnello and Sousa, 2012). However, protecting the most

[15] A large fiscal consolidation is defined as one that lasts at least three years, where the cyclically adjusted primary balance (CAPB) improves by at least 5 percent of GDP, and where the cumulative change in the CAPB is not reversed by more than 1 percentage point from one year to the next.

progressive social benefits and improving targeting can minimize the impact of expenditure cuts on income inequality, as the experiences of Denmark, Germany, Iceland, and Sweden have demonstrated (OECD, 2008; IMF, 2001; IMF, 2012). This can be accomplished in a number of ways. First, greater reliance on progressive revenue measures can obviate the need for large cuts in social transfers, although the extent to which adjustment can be achieved through revenue measures is limited if taxes are already high (Baldacci, Gupta and Mulas-Granados, 2012). Second, removing opportunities for tax avoidance and evasion, practices that typically disproprtionately benefit higher-income groups, can simultaneously improve both the efficiency and the distributional impact of the tax system, as can a greater reliance on progressive wealth and property taxes than is currently the case (Norregaard, forthcoming). Third, broadening the scope of expenditure reforms to include military spending, subsidies (including tax expenditures), and public-sector wages, can also reduce the need for cuts in social transfers (IMF, 2010a). Finally, expanding active labor market programs (such as job-search support, targeted wage subsidies, and training programs) can help accelerate the fall in unemployment as economic growth resumes and avoid persistently high unemployment.

Figure 8. Unemployment Rate Before, During, and After Large Fiscal Adjustments, Advanced Economies

(Percent)



Source: IMF Fiscal Monitor, November 2010.

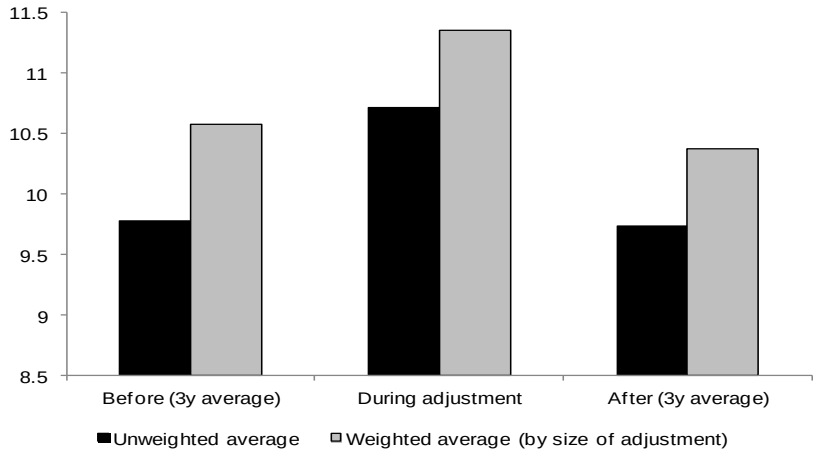
B. Developing Economies

In developing economies, large fiscal adjustments have had relatively significant impacts on the real economy and unemployment (Figure 9). However, reflecting the shorter duration of consolidation episodes in developing economies as compared to advanced economies, the increase in unemployment has also been of shorter duration. This contributes to better income distribution outcomes in the post-adjustment period. In addition, fiscal consolidation is often essential to reduce high inflation, which typically has adverse

effects on inequality (Agenor, 2004; Easterly and Fisher, 2001) and can help to address macroeconomic imbalances leading to improved employment prospects in the long term.

Fiscal consolidation in developing economies can be designed to mitigate its adverse impact on inequality if it is accompanied by improvements in the progressivity of the overall tax and transfer system economies. Since a large share of government spending in developing economies is not progressive (as discussed earlier), expenditure reductions implemented during fiscal adjustment can actually improve equity, depending on where consolidation is concentrated. Similarly, strengthening social safety nets can greatly enhance the capability of governments to protect vulnerable households during adjustment. However, to be sustainable, fiscal adjustment in developing economies is also likely to require revenue measures (Bevan, 2010; Gupta and others, 2005). Any adverse impact of tax measures on inequality can be mitigated if they are accompanied by tax reforms that enhance the efficiency and equity of the tax system, such as a greater reliance on progressive income taxation combined with the removal of opportunities for tax avoidance and evasion.

Figure 9. Unemployment Rate Before, During, and After Large Fiscal Adjustments, Developing Economies
(Percent)



Source: IMF Fiscal Monitor, November 2010.

V. SUMMARY AND CONCLUSIONS

Although fiscal policy has played a key role in reducing income inequality in advanced economies over recent decades, its redistributive impact has diminished since the mid-1990s. The combination of progressive income taxes and highly redistributive transfers has decreased income inequality by about one third. The decrease is even greater when in-kind transfers, such as education and health spending, are included. However, since the mid-1990s, disposable-income inequality has increased more than market-income inequality due to the reduced generosity of redistributive social benefits and the diminished progressivity of

income taxes. Addressing this decline in the redistributive impact of fiscal policy in the context of rising market-income inequality will require a combination of tax and expenditure policy measures, with due recognition of potential equity-efficiency trade-offs.

- *On the tax side*, a key issue will be the potential for increasing the redistributive impact of direct income taxes. Priority should be given to reducing opportunities for tax avoidance and evasion, practices that typically disproportionately benefit those at the top end of the income distribution. In addition, there may be scope for raising average and marginal tax rates in economies with relatively low rates. However, increasing the top marginal income tax rates applied to the richest one-percent of the population may require greater international cooperation to be effective.

- *On the expenditure side*, countries will need to avoid the continued decline in the most redistributive cash and in-kind transfers. While reforms aimed at enhancing the redistributive impact of transfers (e.g., through greater use of means-tested and in-work benefits) can help, the redistributive power of these transfers is limited by the work disincentives they can create.

The measures described above will also contribute to reducing income inequality in advanced economies needing to implement fiscal consolidation over the medium term. Over the short term, protecting the most redistributive social benefits (including unemployment benefits) until the economy recovers and unemployment starts to decline can help to cushion aggregate demand and mitigate adverse impacts on income inequality. In addition, expanding active labor market programs (such as job-search support, targeted wage subsidies, and training programs) can help to accelerate the decrease in unemployment as economic growth resumes and can help avoid persistently high unemployment levels. Over the medium term, somewhat greater reliance on tax measures, as well as broadening the coverage of expenditure reforms to include such items as military spending and subsidies, would obviate the need for large cuts in redistributive transfers.

Enhancing the capability of fiscal policy to address income inequality in developing economies will require strengthening both their resource mobilization capacity as well as their capacity to use more progressive tax and spending instruments. A significant proportion of the higher income inequality in developing economies, as compared to advanced economies, can be explained by the lower levels of taxation and public spending in developing economies, as well as their greater reliance on less progressive tax and spending instruments. Addressing these challenges will require raising tax revenues and spending them more efficiently and equitably.

- *On the tax side*, much can be done to improve the distributional impact of fiscal policy. In the short-term, resource mobilization efforts should focus on broadening income and consumption tax bases. Expanding corporate and personal income tax bases by reducing tax exemptions, closing loopholes, and improving tax compliance would raise revenues

to finance progressive transfers. Expanding the consumption tax base (e.g., through broader adoption of the value-added tax) would increase tax revenues, and these consumption taxes can also be designed to mitigate adverse distributional impacts (e.g., through appropriate treatment of small businesses and the application of excises to luxury goods).

- *On the expenditure side*, revenue constraints will require greater reliance on targeted (as opposed to universal) social expenditures aimed at protecting households from poverty and improving education and health outcomes among disadvantaged households. Eliminating fiscally costly and inefficient universal price subsidies (including tax expenditures) can generate substantial resources in the short term in many economies. The recent success of conditional cash transfer programs in many economies suggests that these programs should play a greater role in the social protection strategies in developing economies. Broadening the coverage of public pension systems would also have an important role in reducing inequality. Where expansion is constrained over the short term by administrative capacity and fiscal constraints, greater use of targeted social pensions may be warranted.

Appendix 1. Construction of the International Gini Database

The inequality database assembled for this note covers 150 advanced and developing economies (see Appendix Table 1 below). Whereas data on disposable income inequality exists from 1980 for many advanced economies, for other regions estimates exist mostly from 1990 onwards. Furthermore, data limitations mean that assembling a panel of inequality estimates across regions and time requires combining estimates from different sources based on different underlying data. The Gini estimates presented below are drawn from five data sources. Priority was given to reporting estimates based on disposable income, otherwise estimates based on consumption or expenditure are used. Estimates for any one country are always for a single base, i.e., income, consumption and expenditure inequality are never mixed for a single country. All estimates reported are drawn from household surveys. For advanced, emerging Europe, and Latin America and the Caribbean economies, the Gini coefficients are based on disposable per capita income data. For the majority of other economies, estimates are based on per capita consumption or expenditures.

In Appendix Table 1, the "Source" column reports the sources from which the Gini estimates are obtained. The data sources used are: European Union Statistics on Income and Living Conditions (EU-SILC); Luxembourg Income Study (LIS); Organisation for Economic Cooperation and Development (OECD); Socio-Economic Database for Latin America and the Caribbean (SEDLAC); and the World Bank, World Development Indicators (WDI). For the majority of economies, a single data source is used for different years. For economies where the "Source" column indicates two sources, this reflects Gini estimates being drawn from separate sources for different years to allow for coverage of more recent years. For example, the main source of data for most advanced economies is LIS. However, at the time of writing, LIS only goes up to 2007, so to get Ginis for more recent years the absolute changes in the disposable income Gini coefficient according to EU-SILC (which only starts around 2006) is added to the Gini for 2007 from LIS. Validation tests were carried out to ensure comparability in the underlying data sources; these tests show that both the level and changes in Ginis in both databases are highly correlated.

The constructed Gini database is unbalanced in that Ginis do not exist for all economies over all years. Appendix Table 1 reports Ginis for 5-year windows, starting in 1980 and ending in 2010. This is constructed as follows: if the Gini for the reference year (e.g., 1990 or 1995) is available it is reported; otherwise the reported Gini is based on the nearest year (first below then above) to the reference year if available; otherwise it is based on the second years below or above.

Appendix Table 1. Gini Coefficients for Advanced and Developing Economies, 1980–2010

	1980	1985	1990	1995	2000	2005	2010	Latest Available	Year of latest data	Source
Advanced	**27.3**	**27.9**	**28.4**	**29.4**	**29.8**	**30.1**	**30.1**			
Australia	28.1	29.2	30.4	30.8	31.8	29.8	33.4	33.4	2008	LIS/OECD
Austria	*22.7*	22.7	*25.2*	27.7	25.7	27.3	27.2	27.2	2010	LIS/EU
Belgium	*22.7*	22.7	22.8	26.6	27.9	25.9	24.5	24.5	2010	LIS/EU
Canada	28.4	28.3	28.1	28.4	31.5	31.5	31.9	31.9	2008	LIS/OECD
Denmark	*25.4*	25.4	23.6	21.8	22.5	22.8	25.8	25.8	2009	LIS/EU
Finland	*20.9*	20.9	21.0	21.7	24.6	25.7	25.1	25.1	2010	LIS/EU
France	29.1	29.8	28.7	28.8	27.8	28.1	30.3	30.3	2010	LIS/EU
Germany	24.4	26.5	25.8	27.0	26.6	28.9	32.1	32.1	2010	LIS/EU
Greece	*34.9*	*34.9*	*34.9*	34.9	33.3	33.1	32.8	32.8	2010	LIS/EU
Ireland	*32.8*	32.8	*33.2*	33.6	31.3	31.6	32.9	32.9	2010	LIS/EU
Italy	*30.6*	30.6	29.7	33.8	33.3	33.4	31.8	31.8	2010	LIS/EU
Japan	*30.0*	30.0	*31.0*	32.0	34.0	32.0	32.9	32.9	2008	OECD
Luxembourg	*23.7*	23.7	23.9	23.5	26.0	26.8	28.2	28.2	2010	LIS/EU
Netherlands	*25.8*	25.8	26.6	25.7	26.1	26.2	24.8	24.8	2010	LIS/EU
New Zealand	*27.0*	27.0	32.0	34.0	34.0	34.0	33.0	33.0	2008	OECD
Norway	22.3	23.3	23.1	23.8	25.0	28.6	24.0	24.0	2010	LIS/EU
Portugal	*33.0*	*33.0*	33.0	36.0	36.0	38.0	33.2	33.2	2010	OECD
Spain	31.8	*31.1*	30.3	35.3	33.6	32.6	34.7	34.7	2010	LIS/EU
Sweden	19.7	21.8	22.9	22.1	25.2	23.7	24.4	24.4	2010	LIS/EU
Switzerland	30.9	*30.8*	30.7	*29.4*	28.0	27.4	27.2	27.2	2010	LIS/EU
United Kingdom	27.0	30.3	33.6	34.4	34.7	35.1	33.5	33.5	2010	LIS/EU
United States	30.1	33.5	33.8	36.3	36.8	38.8	38.6	38.6	2008	LIS/OECD
Asia and Pacific		**34.0**	**34.7**	**36.1**	**36.7**	**37.7**	**37.3**			
Bangladesh		26.0	29.0	33.0	33.0	33.0	32.0	33.0	2005	WDI
Bhutan						47.0		38.0	2007	WDI
Cambodia		*38.0*	*38.0*	38.0	*40.0*	42.0	38.0	38.0	2008	WDI
China	29.0	28.0	32.0	36.0	39.0	42.0	*42.0*	42.0	2005	WDI
Hong Kong SAR, China				43.0						WDI
India		31.0	32.0	31.0	*32.0*	33.0	*33.0*	33.0	2005	WDI
Indonesia		30.0	29.0	31.0	29.0	34.0	*34.0*	34.0	2005	WDI
Korea, Rep.						31.1		31.1	2006	LIS
Lao PDR		*30.0*	30.0	35.0	33.0	*35.0*	37.0	37.0	2008	WDI
Malaysia		49.0	46.0	49.0	*43.5*	38.0	46.0	46.0	2009	WDI
Maldives					63.0	37.0		37.0	2004	WDI
Mongolia		*33.0*	*33.0*	33.0	30.0	*33.5*	37.0	37.0	2008	WDI
Nepal		30.0	*32.5*	35.0	*39.5*	44.0	33.0	33.0	2010	WDI
Papua New Guinea				51.0						WDI
Philippines		41.0	44.0	43.0	46.0	44.0	43.0	43.0	2009	WDI
Singapore					42.0					WDI
Sri Lanka		32.0	32.0	35.0	41.0	40.0	*40.0*	40.0	2007	WDI
Taiwan	26.7	26.9	27.1	27.7	28.9	30.5	*30.5*			
Thailand	45.0	*45.0*	45.0	43.0	43.0	42.0	40.0	40.0	2009	WDI
Timor-Leste					40.0	32.0		32.0	2007	WDI
Vietnam		*36.0*	*36.0*	36.0	36.0	37.0	36.0	36.0	2008	WDI

Note: Italics represent straight line interpolation, with earliest (latest) Gini values extended backwards (forwards) to create a more balanced sample. Due to data limitations, regional averages for Asia and Pacific exclude Bhutan, Hong Kong, Korea, Maldives, Papua New Guinea, Singapore, and Timor-Leste.

Appendix Table 1. (Continued)

	1980	1985	1990	1995	2000	2005	2010	Latest Available	Year of latest data	Source
Emerging Europe			**29.4**	**33.6**	**33.6**	**33.9**	**33.0**			
Albania			*29.0*	29.0	28.0	33.0	35.0	35.0	2008	WDI
Armenia			*44.0*	44.0	36.0	36.0	31.0	31.0	2008	WDI
Azerbaijan			*35.0*	35.0	37.0	*35.5*	34.0	34.0	2008	WDI
Belarus			23.0	29.0	30.0	28.0	27.0	27.0	2008	WDI
Bosnia and Herzegovina			*28.0*	*28.0*	28.0	36.0	*36.0*	36.0	2007	WDI
Bulgaria			23.0	31.0	34.0	29.0	37.2	37.2	2010	WDI/EU
Croatia			23.0	27.0	31.0	29.0	30.5	30.5	2010	WDI/EU
Czech Republic			20.7	25.9	*26.8*	27.7	26.6	26.6	2010	LIS/EU
Estonia			*36.1*	*36.1*	36.1	30.7	27.9	27.9	2010	LIS/EU
Georgia			*37.0*	37.0	41.0	41.0	41.0	41.0	2008	WDI
Hungary			28.3	32.3	29.2	28.9	25.4	25.4	2010	LIS/EU
Kazakhstan			26.0	35.0	41.0	32.0	29.0	29.0	2009	WDI
Latvia			22.0	31.0	34.0	36.0	35.2	35.2	2010	WDI/EU
Lithuania			22.0	32.0	32.0	36.0	36.6	36.6	2010	WDI/EU
Macedonia, FYR			*34.0*	*34.0*	34.0	39.0	43.0	43.0	2009	WDI
Moldova			24.0	37.0	39.0	36.0	33.0	33.0	2010	WDI
Montenegro						30.0	30.0	30.0	2008	WDI
Poland		27.1	27.4	31.8	28.9	37.6	33.1	33.1	2010	LIS/EU
Romania				27.7						LIS
Russian Federation			39.5	44.7	43.4	*43.4*	*43.4*	43.4	2000	LIS
Serbia			*33.0*	*33.0*	33.0	33.0	28.0	28.0	2009	WDI
Slovak Republic			18.9	24.1						LIS
Slovenia			*25.0*	25.0	24.9	26.0	26.0	26.0	2005	LIS
Turkey		44.0	*43.0*	42.0	43.0	43.0	39.0	39.0	2008	WDI
Ukraine			23.0	39.0	29.0	28.0	27.4	27.4	2010	WDI/EU
Latin America and Caribbean			**49.7**	**51.7**	**51.0**	**50.3**	**48.6**			
Argentina	37.6	40.5	44.2	46.0	48.3	46.9	42.0	42.0	2010	SEDLAC
Belize			*58.0*	58.0	49.9	*49.9*	*49.9*			SEDLAC
Bolivia			*50.9*	50.9	56.1	55.7	54.0	54.0	2008	SEDLAC
Brazil	55.3	53.2	58.8	57.6	57.0	54.7	52.0	52.0	2009	SEDLAC
Chile		54.8	53.7	53.5	54.0	50.5	50.6	50.6	2009	SEDLAC
Colombia			48.3	53.5	55.3	54.1	54.4	54.4	2010	SEDLAC
Costa Rica			42.2	43.0	43.9	45.3	48.0	48.0	2010	SEDLAC
Dominican Republic			*45.6*	45.6	50.3	47.9	45.3	45.3	2010	SEDLAC
Ecuador			*55.1*	55.1	54.2	51.5	46.8	46.8	2010	SEDLAC
El Salvador			50.5	47.4	49.8	47.7	43.5	43.5	2010	SEDLAC
Guatemala			*51.6*	*51.6*	51.6	51.9	*51.9*	53.1	2006	SEDLAC
Guyana			49.9							SEDLAC
Haiti					58.5			58.5	2001	SEDLAC
Honduras			49.6	53.4	52.2	57.7	55.3	55.3	2010	SEDLAC
Jamaica			56.5	66.3	57.0	*57.0*	*57.0*	58.0	2002	SEDLAC
Mexico		46.0	51.0	52.0	52.0	46.0	48.0	48.0	2008	WDI
Nicaragua			*54.3*	54.3	47.9	50.0	*50.0*	50.0	2005	SEDLAC
Panama			53.5	53.2	53.4	51.6	49.4	49.4	2010	SEDLAC
Paraguay			38.9	56.1	54.0	51.0	50.3	50.3	2010	SEDLAC
Peru			*51.4*	51.4	48.6	47.6	44.9	44.9	2010	SEDLAC
St. Lucia				43.0						WDI
Suriname					61.9					SEDLAC
Trinidad and Tobago			43.0							WDI
Uruguay			40.4	40.0	42.1	43.7	43.0	43.0	2010	SEDLAC
Venezuela, RB			39.9	44.0	41.8	45.4	36.3	36.3	2010	SEDLAC

Note: Italics represent straight line interpolation, with earliest (latest) Gini values extended backwards (forwards) to create a more balanced sample. Due to data limitations, regional averages for Emerging Europe exclude Montenegro, Romania, and Slovak Republic; and for Latin America and the Caribbean, exclude Guyana, Haiti, St. Lucia, Suriname, and Trinidad and Tobago.

Appendix Table 1. (Continued)

	1980	1985	1990	1995	2000	2005	2010	Latest Available	Year of latest data	Source
Middle East and North Africa		**34.7**	**34.5**	**37.1**	**38.1**	**37.7**	**36.7**			
Algeria			40.0	35.0						WDI
Djibouti		*36.8*	*36.8*	36.8	39.9	*39.9*	*39.9*	39.9	2002	LIS
Egypt, Arab Rep.		*32.0*	32.0	30.0	33.0	32.0	31.0	31.0	2008	WDI
Iran, Islamic Rep.		47.0	44.0	43.0	44.0	38.0	*38.0*	38.0	2005	WDI
Israel					39.0			39.0	2001	WDI
Jordan		36.0	43.0	36.0	*37.0*	38.0	35.0	35.0	2010	WDI
Kyrgyz Republic		*26.0*	26.0	54.0	36.0	39.0	36.0	36.0	2009	WDI
Mauritania		44.0	*40.5*	37.0	39.0	41.0	40.0	40.0	2008	WDI
Morocco		39.0	39.0	*39.0*	39.0	41.0	*41.0*	41.0	2007	WDI
Pakistan		33.0	33.0	29.0	33.0	31.0	30.0	30.0	2008	WDI
Qatar						41.0		41.0	2007	WDI
Tajikistan		*29.0*	*29.0*	*29.0*	29.0	34.0	31.0	31.0	2009	WDI
Tunisia		43.0	40.0	42.0	41.0	41.0	*41.0*	41.0	2005	WDI
Turkmenistan		*26.0*	26.0	35.0	41.0	*41.0*	*41.0*			WDI
Uzbekistan		*25.0*	25.0	*35.0*	45.0	37.0	*37.0*	37.0	2003	WDI
Yemen, Rep.					33.0	38.0		38.0	2005	WDI
Sub-Saharan Africa			**47.7**	**47.2**	**45.9**	**44.7**	**44.5**			
Angola					59.0			59.0	2000	WDI
Benin						39.0		39.0	2003	WDI
Botswana		54.0	*57.5*	61.0						WDI
Burkina Faso			*51.0*	51.0	47.0	40.0	40.0	40.0	2009	WDI
Burundi			33.0	*37.5*	42.0	33.0	*33.0*	33.0	2006	WDI
Cameroon			*41.0*	41.0	40.0	39.0	*39.0*	39.0	2007	WDI
Cape Verde					51.0			51.0	2002	WDI
Central African Republic			61.0	*55.3*	*49.7*	44.0	56.0	56.0	2008	WDI
Chad						40.0		40.0	2003	WDI
Comoros						64.0		64.0	2004	WDI
Congo, Dem. Rep.						44.0		44.0	2006	WDI
Congo, Rep.						47.0		47.0	2005	WDI
Cote d'Ivoire		41.0	37.0	37.0	44.0	*43.0*	42.0	42.0	2008	WDI
Ethiopia	32.0	*34.7*	*37.3*	40.0	30.0	30.0	*30.0*	30.0	2005	WDI
Gabon						41.0		41.0	2005	WDI
Gambia, The			*50.0*	*50.0*	50.0	47.0	*47.0*	47.0	2003	WDI
Ghana			36.0	*38.5*	41.0	43.0	*43.0*	43.0	2006	WDI
Guinea			47.0	45.0	*42.5*	40.0	*40.0*	39.0	2007	WDI
Guinea-Bissau			*48.0*	48.0	36.0	*36.0*	*36.0*	36.0	2002	WDI
Kenya			57.0	42.0	*45.0*	48.0	*48.0*	48.0	2005	WDI
Lesotho		56.0	*59.5*	63.0	*58.0*	53.0	*53.0*	53.0	2003	WDI
Liberia						38.0		38.0	2007	WDI
Madagascar	47.0	*46.7*	*46.3*	46.0	42.0	47.0	44.0	44.0	2010	WDI
Malawi			*50.0*	*50.0*	50.0	39.0	*39.0*	39.0	2004	WDI
Mali			*51.0*	51.0	40.0	39.0	33.0	33.0	2010	WDI
Mozambique			*44.0*	44.0	*45.5*	47.0	46.0	46.0	2008	WDI
Namibia			*74.0*	74.0	*69.0*	64.0	*64.0*	64.0	2004	WDI
Niger			36.0	42.0	*43.0*	44.0	35.0	35.0	2008	WDI
Nigeria		39.0	45.0	47.0	*45.0*	43.0	49.0	49.0	2010	WDI
Rwanda		29.0	*36.7*	*44.3*	52.0	53.0	*53.0*	53.0	2006	WDI
Sao Tome and Principe					51.0			51.0	2001	WDI
Senegal			54.0	41.0	41.0	39.0	*39.0*	39.0	2005	WDI
Sierra Leone						43.0		43.0	2003	WDI
South Africa			*57.0*	57.0	58.0	67.0	63.0	63.0	2009	WDI
Swaziland			*61.0*	61.0	51.0	*51.0*	51.0	51.0	2010	WDI
Tanzania			34.0	*34.5*	35.0	38.0	*38.0*	38.0	2007	WDI
Togo						34.0		34.0	2006	WDI
Uganda			44.0	37.0	43.0	43.0	44.0	44.0	2009	WDI
Zambia			*50.0*	50.0	53.0	51.0	*51.0*	55.0	2006	WDI
Zimbabwe				50.0						WDI

Note: Italics represent straight line interpolation, with earliest (latest) Gini values extended backwards (forwards) to create a more balanced sample. Due to data limitations, regional averages for Middle East and North Africa exclude Algeria, Israel, Qatar, and Yemen, and for Sub-Saharan Africa exclude Angola, Benin, Botswana, Cape Verde, Chad, Comoros, Congo DR, Rep. of Congo, Gabon, Liberia, Sao Tome and Principe, Sierra Leone, Togo, and Zimbabwe.

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