Tax Reform in an Era of Budget Stress, Inequality, and International Mobility[a]

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1. Introduction

Most countries in the developed world face two important fiscal-policy challenges. First, they have large fiscal imbalances, due to a combination of factors including the rapid growth of public debt during the global financial crisis and the pressures put on social insurance systems by population aging. Second, they have experienced growing inequality in the distribution of market incomes, associated with a variety of factors including changing technology and increasing globalization. A potential solution to both challenges would involve the adoption of progressive tax increases, but in the way of such tax increases stands the heightened tax competition also seen in recent years. Thus, new approaches may be needed to achieve a feasible solution to the problems of inequality and fiscal imbalances.

In this paper, I describe in more detail the nature of fiscal imbalances and inequality. While I argue that standard measures of fiscal imbalances and inequality are flawed because they are incomplete, more comprehensive measures still indicate that the challenges are very significant. I then turn to a discussion of the alternatives for progressive fiscal policy responses, suggesting why the standard approaches may not work and how a stronger reliance on destination-based taxation, particularly at the level of business taxation, may offer a solution.

a This paper is based on my Walter Adolf Jöhr Lecture given at the University of St. Gallen on May 20, 2016, as part of the annual CEPR Public Economics Symposium 2016 in St. Gallen, organized by Henrik Kleven and Christian Keuschnigg.

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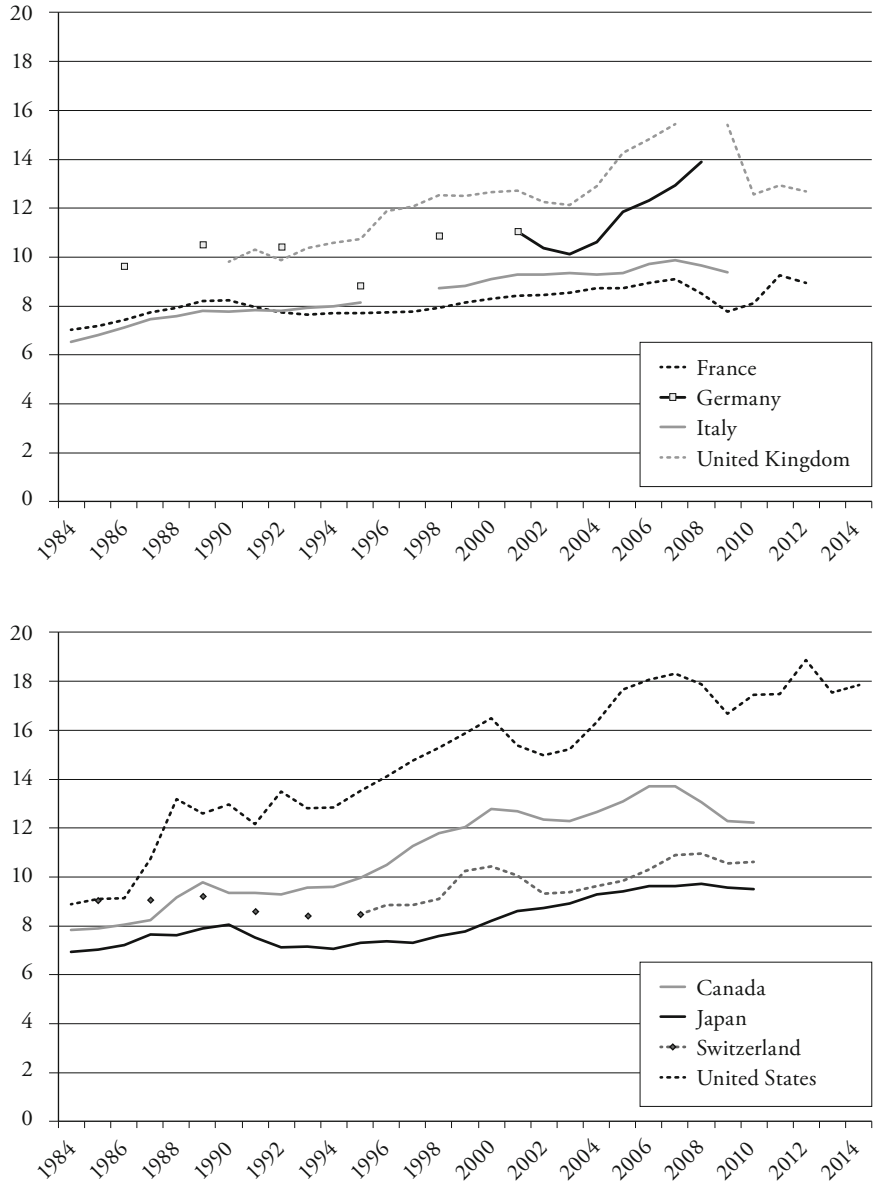
2. Increasing Inequality

Perhaps the most salient measure of inequality in recent years has focused on the "1 percent" – how large a share of resources the top 1 percent of the population controls. Figure 1 shows estimates of the share of market income received by the top 1 percent for each of the G-7 countries plus Switzerland for the period beginning in 1984, around when the great widening of the income distribution began in many developed countries. While the United States exhibits the greatest inequality by this measure, and has experienced the fastest growth in inequality over this period, all countries exhibit a positive trend in the share of income going to the top 1 percent.

Of course, while the share going to the top 1 percent is informative, it doesn't tell us about inequality elsewhere in the income distribution. However, a look at other income shares confirms the general trend toward income concentration. Figure 2 shows the shares of market income in the United States for the first four quintiles and groups within the top quintile of the income distribution for the years 1979 and 2007 (the latter a useful endpoint because it is just before the disruptions associated with the global financial crisis). In addition to confirming the sharp growth in income going to the top 1 percent seen in Figure 1, the figure also shows a substantial loss in income shares throughout the rest of the income distribution, particularly in the middle three quintiles, where the factors of technology and globalization may have exerted their greatest force.

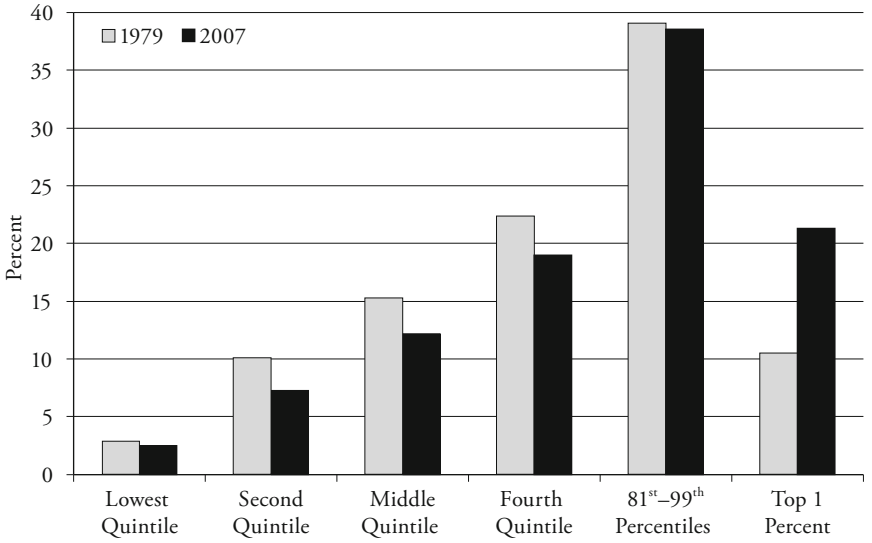
Some have suggested that, at least in the United States, the growth in income inequality has been exacerbated by a shift in the fiscal burden away from the top, through tax cuts and reductions in the social safety net that supports the poor. But that pattern in not evident if one compares the shift in the distribution of net income (accounting for government taxes and transfers) in Figure 3 to the shift in Figure 2. A way of summarizing the direct effects of government policy on the income distribution is by considering how the Gini coefficient – a standard measure of inequality throughout the income distribution – changes as elements of government policy are taken into account. Figure 4 shows the Gini coefficient for three measures of income in the United States: market income, income net of taxes, and income net of taxes and with transfer payments also taken into account. The figure confirms that taxes and, especially, transfers, are both progressive elements of fiscal policy, reducing income inequality as measured by the Gini coefficient. But it also shows similar trends for all three series, indicating that the underlying growth in inequality is a phenomenon of market

Figure 1: Top 1% Income Share of Total Income (Percent)



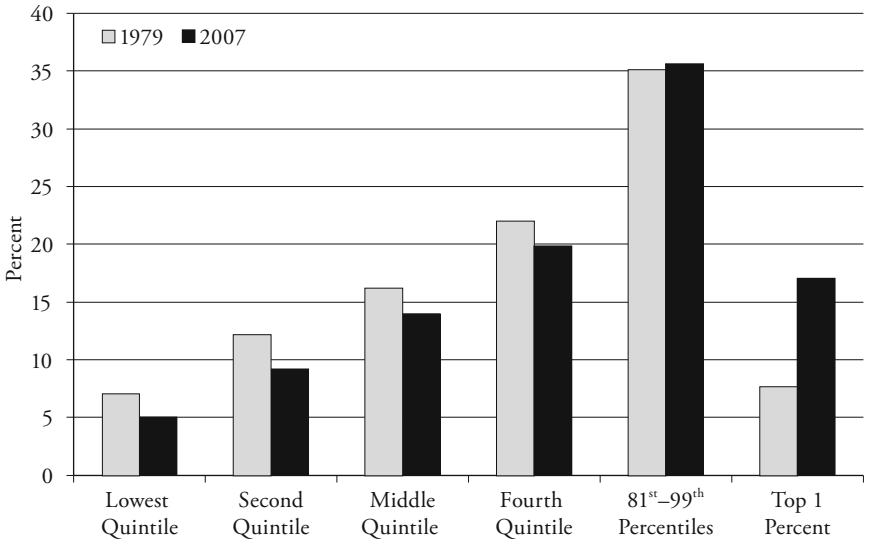
Source: World Top Incomes Database

Figure 2: Shares of Market Income, 1979 and 2007



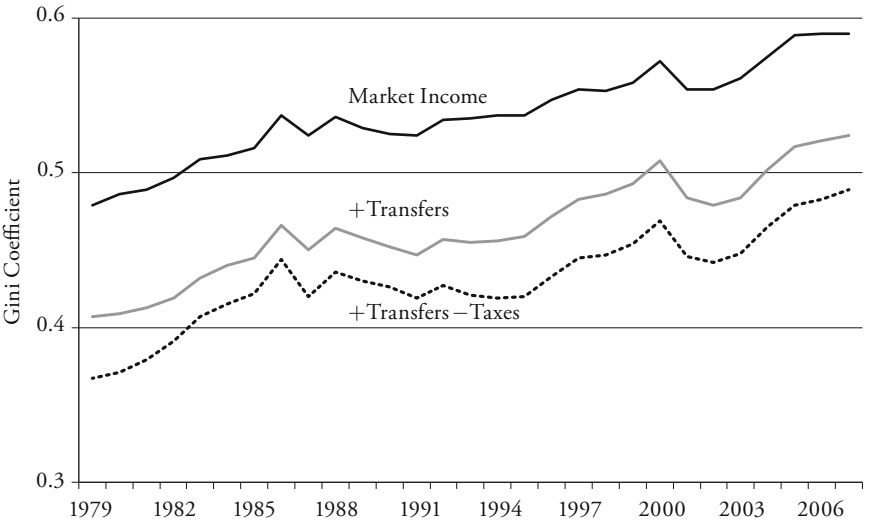
Source: CONGRESSIONAL BUDGET OFFICE (2011)

Figure 3: Shares of Net Income, 1979 and 2007



Source: CONGRESSIONAL BUDGET OFFICE (2011)

Figure 4: Inequality and Effects of Taxes and Transfers



Source: Congressional Budget Office (2014)

incomes, and that government policy's contribution to reducing inequality was roughly unchanged over the period.[1]

From this evidence, it appears that inequality has increased substantially over the past few decades, particularly in the United States but around the developed world as well. But are we measuring inequality correctly? One obvious issue relates to population over which inequality is measured. As many observers have pointed out, *world* inequality has declined over this same period, as the incomes in important countries in the developing world, notably China and India, have increased, with many people in these countries rising out of poverty amidst a period of prolonged economic development. To some extent, the increase in inequality within the developed world and the decline in inequality worldwide reflect the same phenomenon of increased globalization, the losers being developed-country workers subject to enhanced competition from lower-wage workers in developing countries. Still, the political and economic consequences of

1 There may, of course, have been changes in policy that indirectly affected the distribution of market incomes, for example changes in regulations or labor market policies, but evidence for such indirect effects is generally lacking.

increased inequality within countries are significant and cannot be dismissed. But there are also issues relating to whether within-country inequality is adequately portrayed by the measures already discussed. We consider two related issues concerning the use of annual income as a measure of economic well-being.

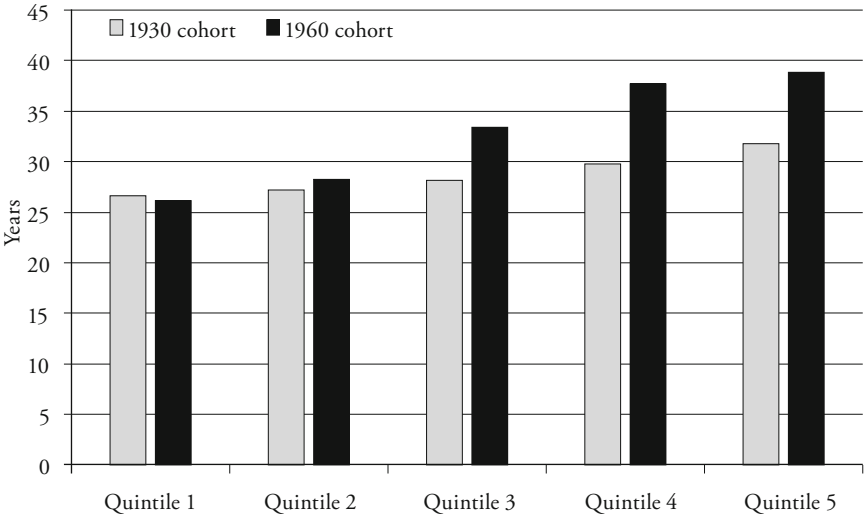
First, our main concern should be the distribution of individual well-being. While income after taxes and transfers, as a measure of purchasing power, is certainly an important factor in assessing well-being, it is not the only factor. Health and happiness may depend on other factors as well, such as job security and satisfaction. In this regard, the increase in income disparity may be understating the increase in inequality, because there is evidence that differences in life expectancy across the income distribution have also increased.

Figures 5 and 6 provide recent projections for the United States for life expectancy at age 50 for men and women born in 1930 and 1960, by income quintile, where income is based on average income between ages 40 and 50.[2] For males, the differential life expectancy already observed for the 1930 birth cohort increases for the 1960 birth cohort, as most of the gains in life expectancy appear toward the upper end of the income distribution. For females, the widening gap is even starker, with declines or no increase in life expectancy except in the top income quintile. This widening gap in life expectancy not only suggests an additional dimension to increasing inequality, but also has implications for the distribution of benefits from social insurance programs for the elderly, which support those who remain alive into old age.

A consideration of the benefits of social insurance programs across income groups also highlights another shortcoming of measuring inequality on the basis of annual income measures. Individuals pay taxes and receive benefits over their lifetimes, not just in any given year, and the patterns of taxes paid and transfers received vary systematically over the course of a lifetime, with more taxes being paid during productive work years and more transfers received during retirement, from public pensions as well as health care programs. Combining different age cohorts distorts measures of both income inequality and the progressivity of the fiscal system. Income inequality is distorted because retired individuals, many of whom may not have been poor on a lifetime basis, are treated as having low incomes because they are not in the labor force. Fiscal progressivity is distorted because the benefits received by such individuals are treated as highly progressive, even though these benefits may be going to individuals who are not poor, as measured on the basis of lifetime income. Indeed, with differential mortality,

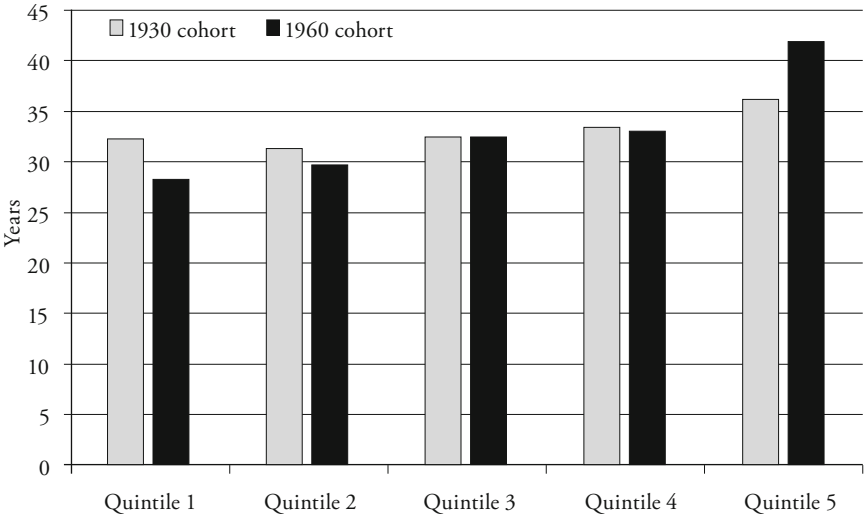
2 For married couples, incomes are combined and then attributed to individuals separately based on the use of an equivalence scale. See National Academies (2015) for further details.

Figure 5: US Age 50 Life Expectancy by Income, Males



Source: National Academies (2015)

Figure 6: US Age 50 Life Expectancy by Income, Females



Source: National Academies (2015)

the "poor" elderly receiving transfer payments are more likely *not* to have been among the poor on a lifetime basis.

To address both of these problems of measurement, one needs to classify income on a lifetime basis and measure fiscal progressivity in a consistent manner. That is the approach taken by AUERBACH, KOTLIKOFF and KOEHLER (2016). Figure 7 shows, for 40–49 year olds in the United States, the differences in the distribution of current income and lifetime resources, the latter equal to current wealth plus the present value of future labor income. Because of inequality in the distribution of wealth, current income actually understates slightly the extent of inequality in access to resources across income groups, at least for this age cohort. On the other hand, the progressivity of the fiscal system is substantially understated by looking only at current effects, as Figure 8 shows. This figure shows average net tax rates (taxes paid less transfer payments received), both currently as a share of current income, and on a remaining lifetime basis, as a share of remaining lifetime resources. Even taking account of differential mortality, which these calculations do, the fiscal system appears much more progressive on a remaining lifetime basis, because of the importance of old-age social insurance benefits which current-year calculations ignore.

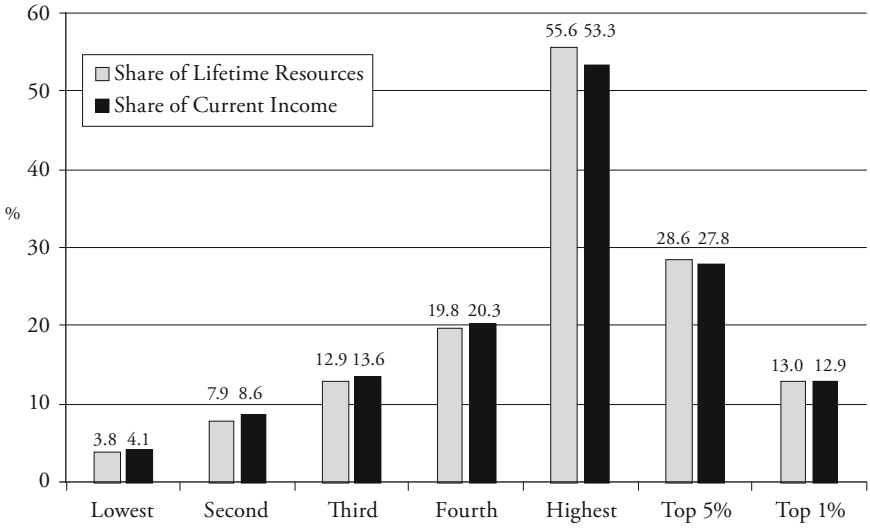
Substantial inequality remains, but measuring inequality in a more meaningful way is important, particularly as one assesses potential policy changes, particularly those that have important age-based effects, such as reforms of social insurance programs. Such reforms may be needed to address the other major fiscal challenge that governments face today: large fiscal imbalances.

3. Measuring Fiscal Imbalances

Figure 9 shows the evolution of net general government debt-GDP ratios for the economies pictured in Figure 1, comparing 2007, just as the worldwide recession began, to 2015. Every country included in the figure, with the exception of Switzerland, experienced an increased debt-GDP ratio over this period. While the increase was modest for some, for others it was very large.

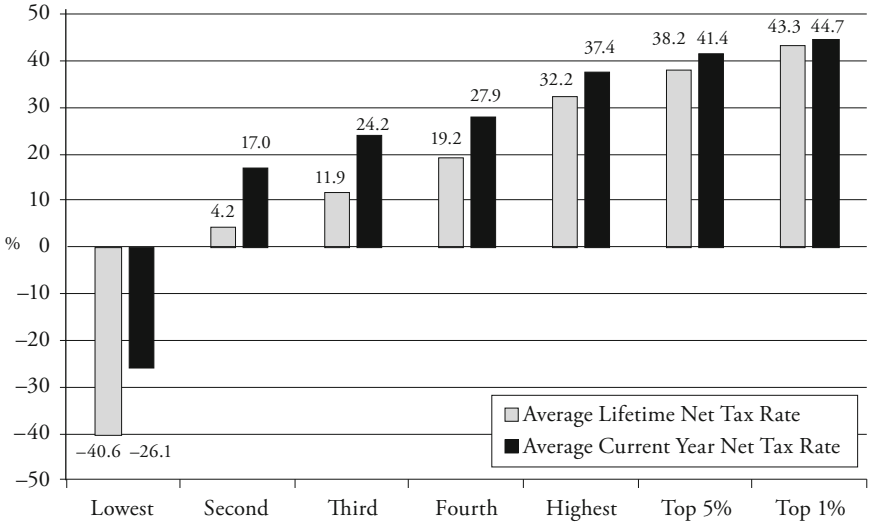
These short-term levels and trajectories clearly are relevant. But debt-GDP ratios alone typically do not tell us how long countries have before they must make fiscal adjustments or how large these adjustments need to be. Some countries, for example Japan, have maintained relatively high debt-GDP ratios for some time. Whatever the determinants of short-run budget dynamics and the associated pressure from financial markets, the factors contributing to short-term debt accumulation differ substantially from those that will affect debt

Figure 7: Lifetime Resources and Current Income by Resource Percentile Ranges, Ages 40–49



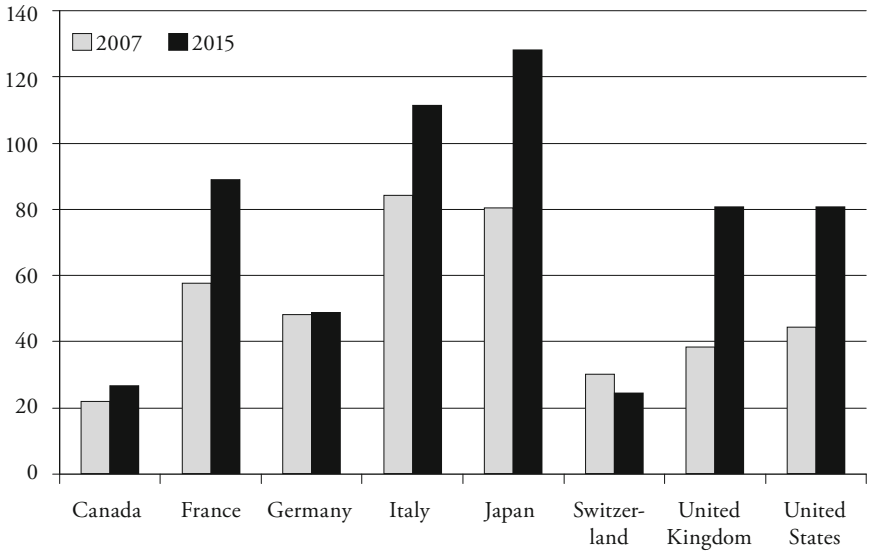
Source: Auerbach, Kotlikoff, and Koehler (2016)

Figure 8: Average Lifetime and Current Year Net Tax Rates by Percentile Ranges, Ages 40–49



Source: Auerbach, Kotlikoff, and Koehler (2016)

Figure 9: Net General Government Debt 2007 and 2015 (Percent of GDP)



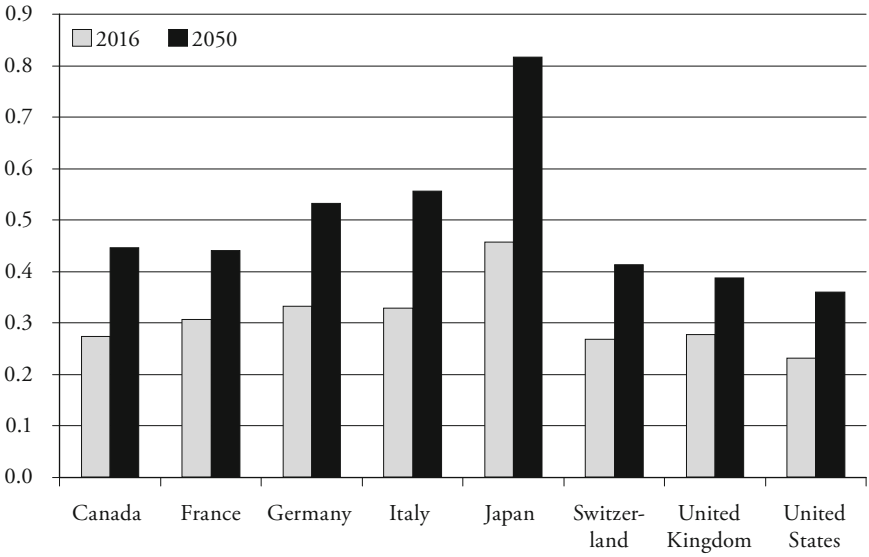
Source: IMF World Economic Outlook Database

accumulation over the longer term, factors that relate to demographic change and the associated changes in government spending and tax collections.

In particular, a marked aging process is well underway in advanced countries around the world, due to a combination of low birth rates and increasing longevity. Figure 10 presents current (2016) and projected (2050) values of old-age dependency ratios for the advanced countries represented in Figure 1. All of the countries are projected to experience substantial increases in the dependency ratio; the largest is in Japan, which is now and will remain the "oldest" society. This aging will bring increased pressure from the expenses of old-age public pension programs, which are largely unfunded, and health care programs, which are largely publicly financed and, like public pensions, unfunded.

A method of measuring a country's fiscal imbalance that takes longer-term commitments into account is the *fiscal gap* associated with them, typically expressed as a share of GDP. As defined, for example, in AUERBACH (1994, 1997), a fiscal gap, say Δ, over a horizon from the end of the current period, t, through a terminal period, T, would equal the required increase in the annual primary surplus, as a share of GDP, relative to those projected under current

Figure 10: Old-Age Dependency Ratios, 2016 and 2050



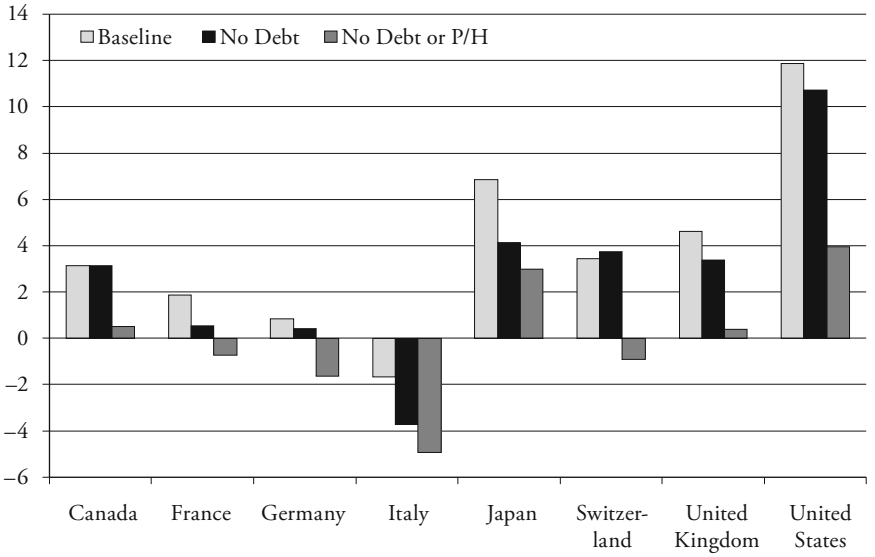
Source: US Census Bureau, International Data Base

policy that would be needed for the terminal debt-GDP ratio to achieve some desired value, or

$$\Delta = \frac{b_t - \left(\frac{1+g}{1+r}\right)^{(T-t)} b_T + \sum_{s=t+1}^{T} \left(\frac{1+g}{1+r}\right)^{(s-t)} d_s}{\sum_{s=t+1}^{T} \left(\frac{1+g}{1+r}\right)^{(s-t)}} \quad (1)$$

where b_t is the outstanding debt-GDP ratio at the end of year t, b_T is the target debt-GDP ratio at the end of period T, d_s is the primary deficit-GDP ratio in year s, g is the GDP growth rate, and r is the relevant interest rate, with both growth and interest rates assumed constant for the sake of simplicity. The target debt-GDP ratio is often taken to be the current value, although in cases where a country starts with an elevated debt-GDP ratio this likely understates the size of the required adjustment, to the extent that long-run stability would be difficult at such a high value of this ratio.

Figure 11: Fiscal Gaps Through 2060 (Percent of GDP)



Source: IMF and author's calculations

Figure 11 presents estimates of fiscal gaps for the G-7 countries plus Switzerland, based on recent data and IMF projections. These are for general government at all levels. To form these estimates, we start with the estimated 2015 ratios of net publicly held debt to GDP in Figure 9, and then add projections for primary surpluses as a share of GDP from 2015 through 2019 from the IMF World Economic Outlook Database. For years after 2019, it is necessary to make some assumptions as to the further evolution of primary surpluses, and we take an approach that separates "normal" components from those related to aging and health.

For shares of GDP accounted for by revenues and non-interest spending in areas excluding health care and public pensions, we set values equal to the values of these shares in 2019, a year in which most countries are projected to have small or no output gaps, and therefore representative of underlying budget positions purged of cyclical components. For the remaining expenditure components, we incorporate recent projections underlying the summary tables in the October, 2014 IMF Fiscal Monitor.[3] For our initial calculations, we assume a real

3 I am grateful to Martine Guerguil of the IMF Fiscal Affairs Department for providing these projections.

discount rate of 3 percent and a real GDP growth rate of 2 percent.[4] We calculate the fiscal gap through 2060 to capture a large part of the demographic transition.[5]

In the figure, the first bar represents the fiscal gap when the terminal debt-GDP ratio is set equal to 60 percent, a figure often used in such calculations (and, for example, used as a target in Europe's original Stability and Growth Pact). In the figure, the U.S. estimate is the highest, around 12 percent of GDP. That is, according to these calculations, the United States would have to reduce non-interest spending or increase revenues by 12 percent of GDP relative to baseline projections in order to hit a 60 percent debt-GDP ratio in 2060.

How much of these fiscal gaps are due to the initial stocks of debt, and how much is due to current and future primary surpluses? The remaining bars in Figure 11 provide such a decomposition. The second bar for each country shows what the fiscal gap would be without any initial debt (and a zero terminal debt-GDP ratio as well). In a sense, the difference between these two series represents the share of the fiscal gap attributable to *past* fiscal policy, in the form of past deficits that together led to the initial level of debt on which the calculation is based. For countries with high initial debt-GDP ratios, such as Italy and Japan, the difference between the first and second series is quite large, while for other countries, such as Canada and Switzerland, with low initial debt-GDP ratios, the difference is small or negative.

The third bar in Figure 11 illustrates how important the implicit liabilities are that are associated with health care spending and pension growth. For each country, it shows what the fiscal gap would be if, in addition to there being no initial debt, there were also no increase relative to GDP in spending on health care or pensions after 2019. In a sense, this calculation indicates how much of the fiscal gap comes not from the *past* deficits, just considered, or the *present*, in the form of current and near-term primary deficits, but the *future*, in the form of increases in primary deficits, as a share of GDP, relative to their near-term values. For all countries, this assumption reduces the estimated fiscal gaps, and for many it eliminates the gap entirely. The incremental effect of this factor is especially large for the United States, for which assumed growth in health costs is very large in the IMF projections. For the United States, then, the biggest share of the estimated fiscal gap comes from the future component – the growth in primary deficits as

4 From the nature of these calculations, the levels of the real interest and growth rates matter little, with the gap between them being the key factor.

5 As the projections run through 2050, we assume that shares of taxes and expenditures to GDP are constant between 2050 and 2060.

a share of GDP, while for, say, Japan, much more of the problem is a legacy of the past, in the form of a very high initial debt-GDP ratio.

Given the considerable uncertainty about fiscal conditions in the long run, a natural inclination may be to limit one's attention to the present, to leave future fiscal issues to be addressed in the future, when there is more information about their severity. However, this intuition is inconsistent with what economic analysis would generally indicate – that uncertainty about the future should induce precautionary saving, whether the uncertainty is with regard to a private individual's spending needs or those of the government. The logic is that when direct insurance against future risks is unavailable, setting more resources aside constitutes a form of self-insurance, so that the occurrence of very unfavorable outcomes is not so costly. Put simply, it is better to put aside resources that may not be needed than to have to find such resources when there is a dire need for them.

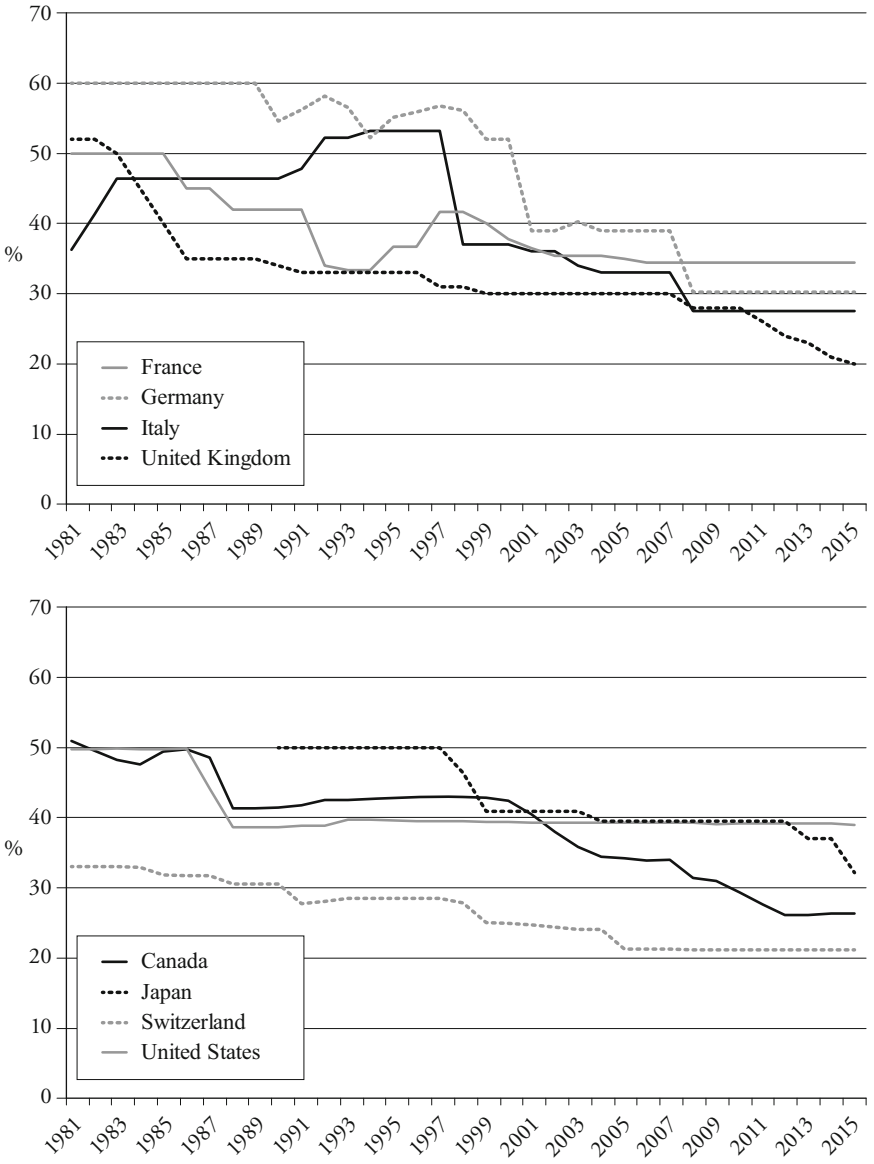
In summary, many leading economies face sizable fiscal gaps over the next several decades, gaps which bear only a small relationship to short-term fiscal indicators such as the debt-GDP ratio. These long-run fiscal gaps relate much more to the rising pension and health costs associated with aging societies. Some countries, such as Italy, have already adopted major pension reforms that, if sustained, make long-term fiscal balance possible, but other countries require substantial fiscal adjustments.

4. Responding to the Fiscal Challenges

A natural response to increased inequality and fiscal imbalances would be to increase taxes and reduce public spending in a progressive manner. On the tax side, much of the discussion has related to the possibility of increasing taxes on capital income, which has played a particular role in producing inequality. However, taxing capital income more heavily may be difficult, also as result of the changing economic environment. Figure 12 provides an illustration of this difficulty, in the form of trends in statutory corporate tax rates for the G-7 plus Switzerland. These tax rates have been falling rather steadily around the developed world in response to heightened tax competition for real business activities as well as for the reported profits that multinational companies have been increasingly adept at shifting to take advantage of international tax rate differentials.

The heightening of tax competition reflects many factors, among them the increasing importance of multinational companies – which can shift income and activities across borders – within the business sector and the increasing role of intangible assets – which have a less obvious location than tangible plant and

Figure 12: Statuatory Corporate Tax Rates



Source: OECD Tax Database

equipment and so are more easily reported to have earnings in low-tax jurisdictions – in the production of business income. While Figure 12 relates to business income, to some extent the same problem arises in the case of individuals who, while residents of particular countries, may have increased access to techniques for hiding income in low-tax jurisdictions. Thus, capital income may be an appealing tax base for dealing with the two main fiscal challenges, but also an increasingly inaccessible one.

Governments have responded to increasing tax avoidance and tax evasion through a number of initiatives. The attack on tax evasion by individuals has involved the pursuit of enhanced information sharing among governments and between private institutions and governments, as exemplified by the Foreign Account Tax Compliance Act (FATCA) enacted by the United States in 2010 and in the years since adopted by many other countries as well. Under FATCA, foreign financial institutions must provide to the United States, or their own governments, information on the accounts of U.S. residents, with reciprocal information provided to the governments of participating countries. It is too early to say how successful FATCA will be, but there appears to be much individual capital income that has been escaping tax in recent years (ZUCMAN, 2015).

At the corporate level, the issue has been more one of avoidance than outright illegal evasion, and the proposed remedies, while including enhanced information sharing, have attempted to go much further in restraining the abilities of companies to shift income. In the lead in this endeavor has been the OECD, with its recent, massive project on Base Erosion and Profit Shifting (BEPS), which has included a number of recommended changes in the way the income of multinational companies is taxed and how such income is distributed among possible countries. An illustration of the type of change envisioned would be to limit the ability of a company to report income in a low-tax jurisdiction without having a substantial physical business presence in that jurisdiction. The aim of such a change would be to prevent companies from shifting profits away from the countries in which their business activities generate the profits.

Will such an approach work, if it is widely adopted by the countries in which multinationals operate? The key question here is what it means for the approach to "work." Limiting the ability of companies to shift profits independently from real activities may reduce the misalignment of reported profits and real activities, and so may be seen as a success if one's objective is simply to reduce this misalignment. But companies may increase the alignment of profits and real activities in two very distinct ways: by moving reported profits out of low-tax countries, or by moving real activities *into* low-tax countries, where the profits are being reported. It would be hard to see the latter type of shift as a victory for the

countries seeking to increase the share of multinational profits subject to taxation, as they would now have lost the benefit of productive activities as well as the ability to tax profits. That is, if the United States, in seeking to limit Google's shifting of profits to Ireland, puts more stringent requirements on the activities that Google must show in Ireland in order to report profits there, Google may respond not by reporting more profits in the United States but by moving more of its actual business activity to Ireland.

A similar conundrum has arisen in recent years as the United States has attempted to reduce the number of U.S. resident multinational companies choosing to undergo corporate "inversions," a process in which the U.S. company changes it corporate structure so that it relinquishes its U.S. residence. Companies are encouraged to undergo an inversion because the United States, now unlike most other countries, seeks to tax the worldwide income of its multinationals, meaning that profits earned in foreign countries, particularly low-tax countries, may be subject to additional tax when the income is brought back to the United States. As non-resident companies may bring profits from other countries to the United States without any such additional tax, inversions provide an immediate tax benefit to companies, even if they do not change their pattern of business activity around the globe.

In the early 2000s, inversion was achieved very simply, literally by inverting the order of parts of a company's hierarchy so that the U.S. parent became a subsidiary of a foreign part of the company. The process was simple and required little change in real activity. As the U.S. has increased the barriers to undergoing inversions, first by ruling out such simple inversions and requiring actual mergers with foreign companies, and then by restricting the types of mergers with foreign companies that would allow the combined entities to declare residence outside the United States, companies still choosing to undergo inversions have needed to change the organization and location of their activities in much more fundamental ways, including relocation of headquarters and other key operations away from the United States. Thus, inversions now deprive the United States not only of tax revenue, but possibly of the benefits of real activities as well, to the extent that inversions still occur. As in the case of limiting profit shifting, one might declare the regulations a "success" but they do not necessarily increase the well being of U.S. individuals. Limits on inversions, like limits on profit shifting, suffer from the problem that their objective is not based on any fundamental measure of a country's well-being, but rather on the achievement of some arbitrary condition. Success in achieving this condition does not ensure success in improving well-being. In the case of the BEPS project, moreover, there is a particular problem in trying to ensure that profits are taxed where they are "really"

earned, because identifying the location in which profits are earned is increasingly difficult when companies are using intangible assets – which have no obvious location – in the generation of profits.

Can we do better, by adopting more fundamental changes in our approach to taxation? There are many proposals for doing so. Perhaps the most notable in recent years has been the impassioned call for progressive, global wealth taxation put forward by Piketty (2014) in his celebrated book. Such an ambitious approach would have the advantage of focusing taxation more on individuals, who are less mobile than the activities of companies, but it would still have to confront the difficulties of measuring and tracking wealth across borders, a challenge being undertaken now under FATCA but which would become more difficult as the stakes were raised by attempts to impose a much higher tax burden. Further, to the extent that governments do succeed in taxing wealth more heavily than at present, they would need to consider the additional disincentive for saving that such taxes would introduce.

A very different alternative would be to focus more on consumption-based taxation. Consumption expenditures are more easily measured and tracked than wealth, and taxing consumption does not discourage saving the way taxing wealth or capital income does. The key objection to consumption taxation as a means of dealing with fiscal imbalances comes from equating consumption taxes to the most common form they take at present around the world, the value added tax (VAT). While the VAT has proved straightforward to implement and administer, it is viewed as regressive (because spending falls with income, at least when one takes an annual perspective), and the existing approach to making it less regressive by exempting certain commodities is very inefficient and of limited effect in terms of increasing tax progressivity. However, there are other approaches to consumption taxation that can be made progressive much more simply, such as the personal expenditure tax proposed by Kaldor (1956) and others.

A particular application of consumption-based taxation could be used to reform and increase revenues from the corporate tax. As laid out in Auerbach, Devereux and Simpson (2010) and expanded on in Auerbach (2010), it would be relatively simple to convert existing corporate income taxes into a destination-based cash flow tax by (1) eliminating deductions for interest expense; (2) replacing depreciation deductions with immediate expensing of all investment purchases; and (3) implementing border adjustments for exports and imports or, equivalently, simply eliminating tax on all export revenues and eliminating the deductibility of all import costs. The result, which would effectively be a VAT except with a deduction for wage and salary expense, would eliminate the

incentive for companies to shift profits to lower-tax jurisdictions, because doing so would have no impact on domestic tax liability, and would eliminate the incentive to shift production to lower-tax jurisdictions, because tax liability would be based on the location of sales, rather than on the location of production. Because there would be no shifting of capital away from a country imposing such a tax, the tax would not be shifted to labor through a reduction in wages arising from capital flight, and progressivity would be further enhanced by the fact that the tax would be imposed only on consumption that is not financed by wage and salary income. A final advantage of a destination-based corporate tax is that it could be adopted unilaterally and does not require international cooperation or information sharing – the only information required relates to domestic activities.

Adoption of a destination based corporate tax would represent a major change in the manner of taxing multinational businesses, and many issues of administration and transition would need to be considered. For example, such a tax is not necessarily consistent with existing rules of the World Trade Organization (WTO). But the major fiscal problems of inequality and fiscal imbalances that most developed countries confront, even as these countries must deal with enhanced competition over their tax bases, present a major challenge for which incremental changes in tax policy are likely to be inadequate.

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