

Implications for Tax Policy of Lower Trend Productivity Growth

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The slow observed rate of productivity growth in recent years has been a source of disappointment, concern, and—to some extent—surprise in both the academic and policymaking communities. In the United States, for example, labor productivity growth in the nonfarm business sector has averaged just 0.8 percent over the past half dozen years (see figure 1). Low rates of capital investment in the wake of the Great Recession may be contributing to recent sluggishness, but the disappointing performance of productivity growth appears to have roots that pre-date the downturn. Indeed, a growing body of academic literature documents a downshift in the rate of U.S. labor productivity growth and total factor productivity growth to the early-to-middle part of the last decade (for example, Fernald, 2014 and Fernald, Hall, Stock and Watson, 2017). Other research demonstrates that the slowdown in productivity growth extends well beyond the United States (for example, Adler, Duval, Furceri, Çelik, Koloskova, and Poplawski-Ribeiro, 2017). Many of advanced economies have seen similarly low productivity growth in recent years—for example, in the OECD countries, productivity growth averaged 0.9 percent per year between 2011 and 2015.¹

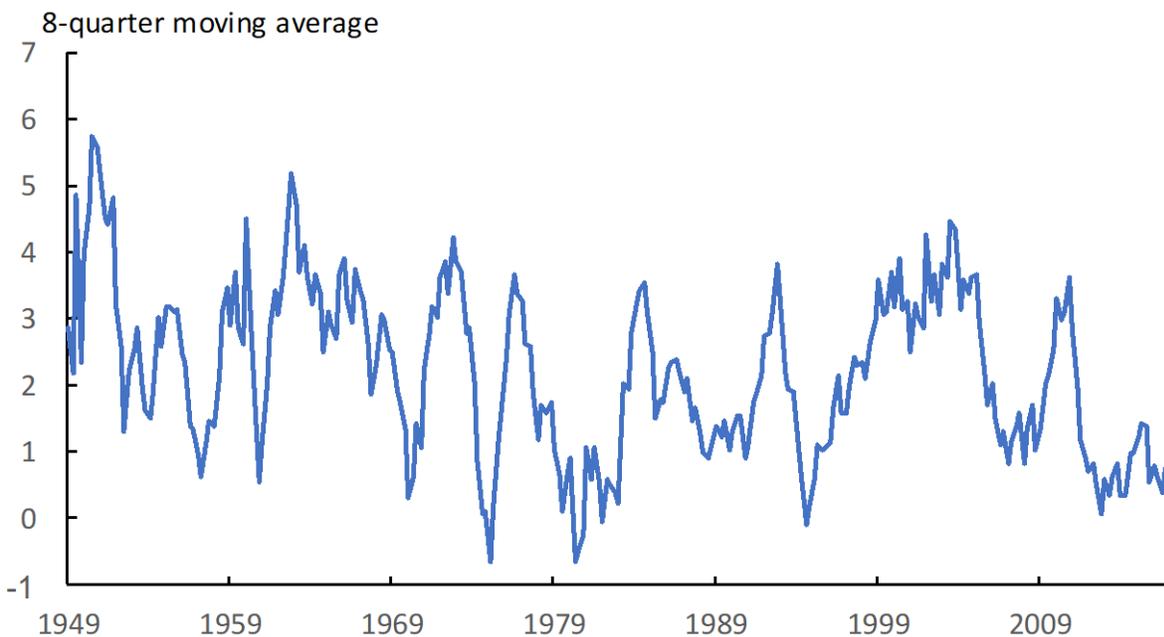
Because part of the slowdown in productivity growth appears to be a hangover from the Great Recession, many analysts are optimistic that the extremely low productivity growth rates of recent years will not persist. Even so, most forecasters do not foresee productivity growth returning to long-run historical averages. For example, the Congressional Budget Office (CBO) projects that, under current fiscal policy, labor productivity growth in the U.S. nonfarm business sector will pick up to 1.8 percent per year by the end of the coming decade, compared with an average pace of 2.2 percent in the second half of the last century.² Results from the Survey of Professional Forecasters (SPF) suggest that many other forecasters foresee a similar shortfall in productivity growth relative to historical averages. However, the SPF results also suggest considerable downside risk to what forecasters expect on average. For example, about one quarter of SPF participants believe that productivity growth over the coming decade will be ½ percentage point or more below the mean forecast.³

¹ Based on cross-country data on GDP per hour worked available from this website: http://stats.oecd.org/Index.aspx?DataSetCode=PDB_GR.

² CBO forecasts for productivity growth are available under the heading “Potential GDP and Underlying Inputs” on this webpage: <https://www.cbo.gov/about/products/budget-economic-data>.

³ As of January 2017, the mean SPF forecast for average labor productivity growth over the next decade was 1.6 percent and the 25th percentile of forecasts was 1.1 percent. The 10th percentile was 0.9 percent. The SPF data are

Figure 1
Labor Productivity Growth in the U.S. Nonfarm Business Sector



Source. U.S. Labor Department

Note. Shaded bars represent recessions.

This paper will consider the implications of a sustained period of low productivity growth for the design of tax systems. This question is very timely in the United States given the current Administration and Congressional efforts to pass a tax reform package. The paper will, to some extent, draw off the large related literature that has examined the general question of how to reform tax systems to boost productivity growth (see, for example, International Monetary Fund, 2017). However, it is important to recognize that the central issue of interest in this paper is different from that explored in the earlier literature. The reforms to tax systems emphasized in the earlier literatures are ones that are always desirable from an efficiency point of view; by contrast, this paper explores changes that should be made in response to a material downshift in productivity growth relative to historical norms.

available at: <https://www.philadelphiafed.org/research-and-data/real-time-center/survey-of-professional-forecasters/data-files/prod10>

The paper will proceed as follows. It will begin by stipulating lower trend productivity growth and then discuss the key relevant economic implications. It will then turn to the question of how to adapt tax policy to these changes. The discussion will be organized around the major objectives of tax policy—collecting revenue, incentivizing work and saving, redistributing income, mitigating business cycle fluctuations, and improving resource allocation in others ways (i.e. minimizing tax-based distortions and correcting for externalities). Slower productivity growth and related changes in the economy have consequences for each of these objectives that suggest some change in policy will be needed. The paper concludes by summarizing the implications for tax policy of a slowdown in productivity growth.

Slower Productivity Growth and Key Economic Implications

All of the papers for this conference are conditioned on the assumption that both labor productivity and total factor productivity growth rates settle at paces that are a few tenths of a percentage point below historical norms in the baseline and ½ percentage point lower than the baseline in the “downside risk” scenario. The downside risk scenario is not implausible. Many forecasts for long-term productivity have been marked down by a similar amount over the last half decade,⁴ and, as noted above, the 25th percentile of SPF forecasts for U.S. labor productivity growth over the next 10 years are ½ percentage point below the mean SPF forecast. In any event, much of the discussion below is qualitative, so the precise assumptions about productivity growth are not crucial.

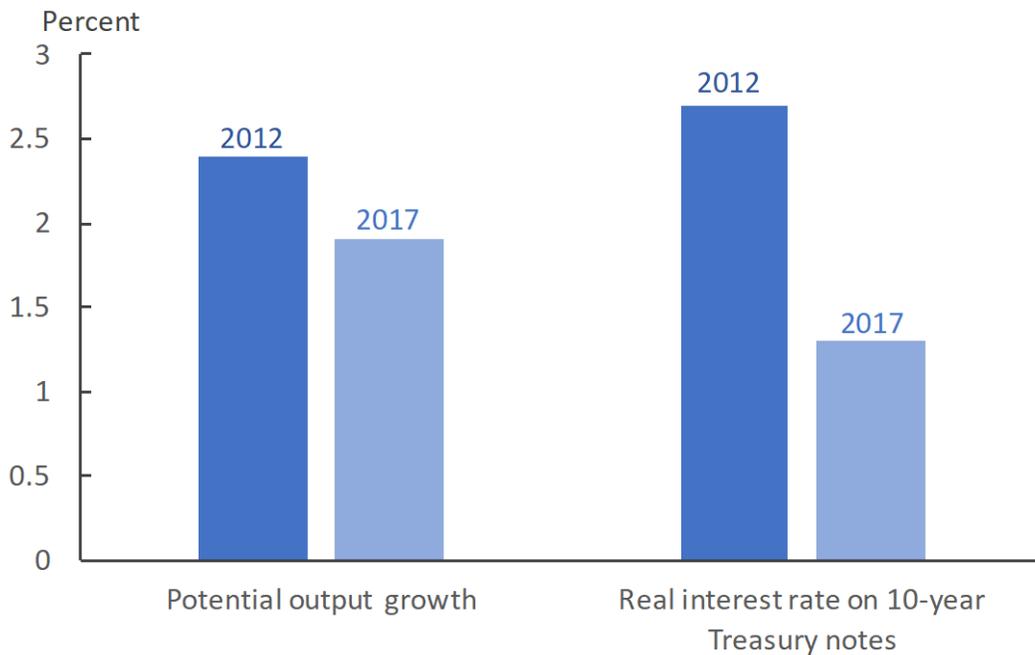
A sustained period of lower productivity growth would lead to lead to changes in other factors that are also relevant for tax policy. In particular, lower productivity growth would lead to lower interest rates, somewhat lower inflation, lower wage growth, and less “real bracket creep” in the tax code. I will address each of these changes in turn. While much of the discussion that follows cites evidence from the United States, most of the same changes would be expected in other countries (with the exception of the real bracket creep result, which depends on the nature of each country’s tax code).

⁴ For example, CBO assumed that U.S. labor productivity growth would settle at 2.1 percent over the longer-run for its August 2012 forecast of the economy.

Interest Rates

Economic theory predicts that the real interest rate will be lower when productivity growth is lower. Consistent with theory, forecasts of long-term real interest rates have been revised downward in recent years along with forecasts of economic growth over the longer run. For example, figure 2 shows that, between 2012 and 2017, the CBO reduced its projection of the real interest rate on 10-year Treasury notes as well as its projection of potential output growth (with the figures showing the values for the end of its 10-year projection window).

Figure 2
CBO Economic Assumptions
(at end of 10-year projection period)



Source. Congressional Budget Office

As can be seen, CBO’s downward revision to the real interest rate, at 1.4 percentage points, is a good deal larger than its 0.5 percentage point downward revision to the growth rate of potential output. The larger downward revision to the real interest rate is perhaps not surprising given that the low real interest rates of recent years has drawn attention to other factors that may be weighing on rates. These factors include the aging of the population, changes in global preferences for safe assets, and higher income inequality.

Theory can also offer some guidance on how much interest rates decline when productivity growth falls. The Ramsey model of optimal consumption and saving over time implies that the amount by which interest rates decline with the growth rate of the economy depends on preferences. Specifically, a simple version of the model yields the following relationship:

$$r_{t+1} = \rho + \sigma g_{t+1}$$

where r_{t+1} equals the real interest rate on saving between periods t and $t + 1$, ρ is inversely related to the rate of time discount, σ is inversely related to the intertemporal elasticity of substitution, and g_{t+1} is the growth rate of consumption between periods t and $t + 1$. In the steady state, g will be equal to the per-capita growth rate of the economy, which is determined by productivity growth.

As shown in Council of Economic Advisers (2015), reasonable parameter choices for ρ and σ imply that changes in real interest rates may have a roughly one-for-one relationship with changes in the growth rate of the economy. This result would suggest that real interest rates might be between a few tenths (in the baseline scenario) and $\frac{3}{4}$ percentage point (in the downside risk scenario) lower than they would be if productivity growth were closer to its long-term historical average.

Of course, this calibration is sensitive to the underlying assumptions. If people are not very willing to substitute consumption over time, the model would imply declines in real interest rates that are even larger. Moreover, while other models of consumption and saving, such as the overlapping generations model, also suggest a link between productivity growth and the interest rate, the implied quantitative relationship could be different.

Inflation

As will be discussed in more detail below, the decline in interest rates that accompanies slower productivity will tend to make the effective lower bound on the federal funds rate more binding more of the time. This constraint on the ability of monetary policy to spur economic activity when aggregate demand is weak has a number of implications for macroeconomic performance (see, for example, Kiley and Roberts, 2017). Of particular relevance for this paper, it implies that

inflation will be somewhat lower on average unless the Federal Reserve significantly alters its approach to policymaking or fiscal policy becomes significantly more countercyclical (a topic to which I return later).

Wage Growth

A prolonged period of slow productivity growth will generate slow growth in wages because wages reflect, albeit quite imperfectly, the marginal product of labor. The limited growth of earnings for low and middle-skill workers over the last several decades provides a stark illustration of this point in that a large literature argues that “skill-biased technical change” has played at least some role holding back the wages of these workers by reducing their relative productivity (Violante, 2017). (This experience also provides a reminder that low productivity growth in the aggregate might be associated with even lower productivity growth for some types of workers.)

Slower wage growth has implications in and of itself for tax policy, but it also may have implications because of its effects on lifetime income paths. Wages tend to rise with age for many workers for a number of reasons, one of which is rising economy-wide productivity. A reduction in productivity growth would therefore be expected to result in some flattening of the path of income over a worker’s lifetime.

Real Bracket Creep

Tax systems are often largely indexed for inflation. For example, in the United States, the federal tax code has been largely indexed for inflation since 1986. Such indexing takes away the traditional form of bracket creep by which increases in nominal incomes owing to inflation would push taxpayers into higher tax brackets. However, real growth in incomes will over time still push taxpayers into higher tax brackets through what might be called “real bracket creep.”

This phenomenon will, in turn, lead effective marginal and average tax rates to rise over time. Specifically, real bracket creep subjects an ever-larger portion of income to higher tax rates. It also pushes more taxpayers above the eligibility threshold limits for various tax credits.

Slower productivity growth means that the extent of real bracket creep will be reduced. Because real bracket creep is quantitatively significant, a reduction in its magnitude may be an important consideration in tax policy. Using the United States again as an example, CBO estimates that structural factors will increase tax revenues as a share of GDP by 1 percentage point over the next 30 years, with real bracket creep being the most important of these factors (Congressional Budget Office, 2016). Real bracket creep also explains a significant part of the projected rise in the *marginal* tax rate on labor income in coming years.

Of particular note, the effects of real bracket creep are larger for lower and middle income households because they lose eligibility for targeted tax credits such as the Earned Income Tax Credit and the Child Tax Credit. Therefore, a reduction in the magnitude of real bracket creep helps those households more than others.

Sheiner (2017) provides a quantitative analysis of the effects on tax revenues of the changes in real bracket creep implied by the specific assumptions about productivity growth used for this conference.

Objectives of Tax Policy

A straightforward way to think about the implications for tax policy of lower productivity growth and related changes in the economy is to consider each of the major objectives of tax policy. Tax systems are designed to:

- collect revenues,
- minimize disincentives for saving,
- minimize disincentives for work,
- redistribute income,
- mitigate business cycle fluctuations, and

- minimize other distortions in resource allocation (that is, minimize tax-based distortions and correct for externalities).

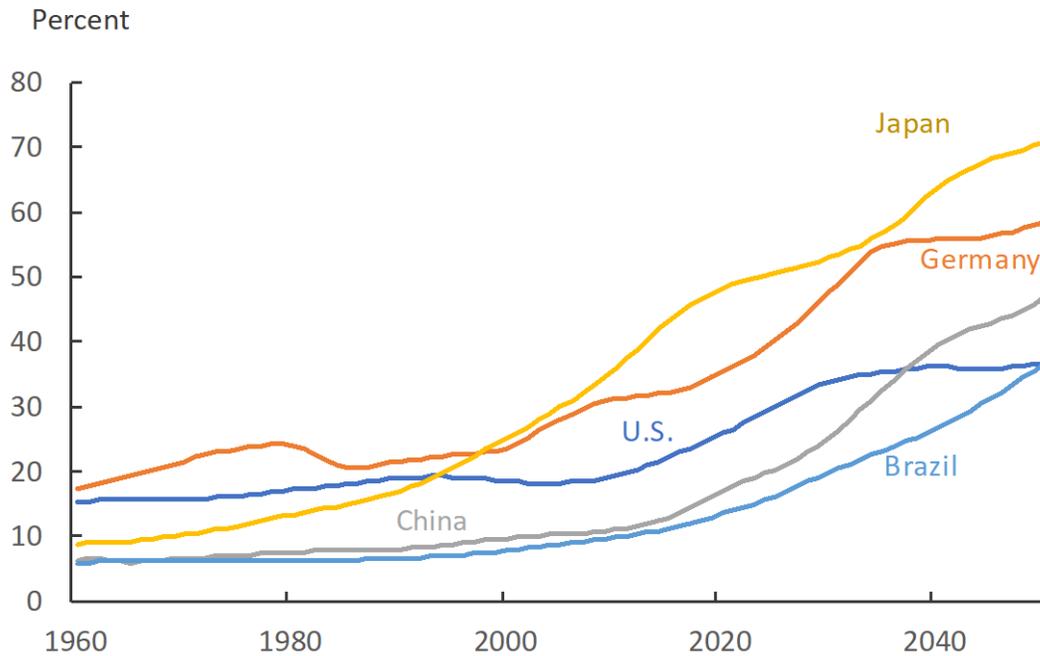
This section will discuss how lower productivity growth affects optimal tax policy according to each of these objectives in turn.

Collecting Revenues

A tax system needs to collect enough revenues to sustain government benefits and purchases of goods and services. Various factors affect desired government spending. In the United States and many other countries, the aging of populations is putting significant upward pressure on government spending over time because a significant share of government benefits go to older people.

As can be seen in figure 3, so-called old-age dependency ratios—which measure the size of the population over the age of 65 relative to the size of the working-age population—are rising around the world. In most countries, government social insurance programs provide both income support and health care for the older population. Even if productivity growth were to remain close to its historical average, these spending needs would be expected to strain government budgets. For example, in a recent effort to quantify the uncertainty surrounding projections for the U.S. Social Security program, CBO reported the results of simulations based on different assumptions for productivity growth and other key economic and demographic variables; in nearly all of these simulations, the program (as currently financed) would not be able to pay all of scheduled benefits beyond the mid-2030s (CBO, 2015).

Figure 3
Population 65+ Relative to Working-Age Population



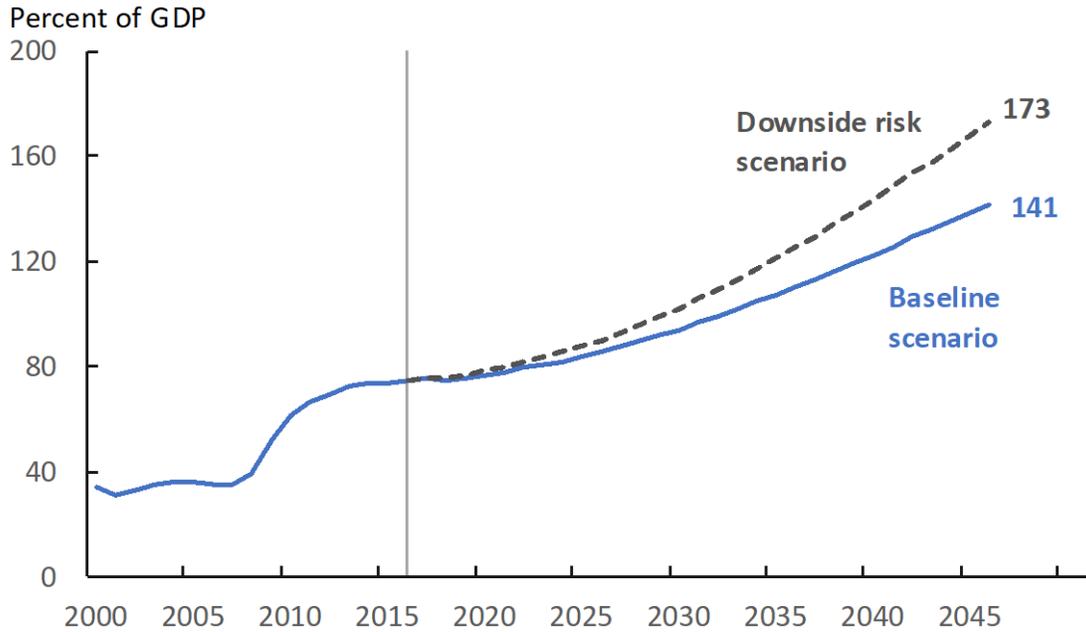
Source. World Bank.

A sustained period of productivity growth that is substantially below historical norms would sharply worsen these budget challenges. The reason for this outcome is that lower productivity growth reduces the incomes of the working-age population, and thus tax revenue, by more than it reduces government benefits and services under current structures of taxes and benefits.

Again using the United States as an example, figure 4 shows projections that CBO did in 2016 of the federal debt as a percentage of GDP under current fiscal policy for both a baseline scenario for productivity growth and an alternative scenario in which productivity growth is ½ percentage point per year lower on average. (CBO’s baseline and downside risk scenarios are the same as those used for this conference.) Even under the baseline scenario, federal debt is projected to rise on an unsustainable path and that problem is more severe if productivity growth is lower than in the baseline. With lower productivity growth, federal debt would be roughly 30 percent of GDP larger thirty years from now. Importantly, this projection incorporates the reduction in interest

rates that CBO expects would result from lower productivity growth (which should help offset some of the direct effects of lower productivity growth).

Figure 4
Federal Debt Given Different Productivity Growth Assumptions



Source. Congressional Budget Office (2016)
Note. Assumes fiscal policy as of 2016.

While the CBO analysis embeds particular assumptions for a single country, similar results (at least in terms of the degree to which the budget projections worsen under the downside risk scenario) would be expected in other situations for the United States and for other countries.

Therefore, a sustained period of slower productivity growth would require a larger increase in taxes (or a larger cut in government spending) to keep government debt on a sustainable course. In the United States, if spending is not changed, taxes need to be increased relative to current law to make fiscal policy sustainable but they would need to be increased by almost 1 percent of GDP more (or roughly 5 percent more) if productivity growth is $\frac{1}{2}$ percentage point lower than expected.

Reducing Disincentives for Work

The reduction in wage growth that would likely accompany a sustained period of low productivity growth would be expected to reduce the incentive of people to work, although, of course, this “substitution effect” would likely be offset in part by the “income effect” arising from people having lower total lifetime income. Prime-age male labor force participation has been falling for some time in many countries, with the United States having seen one of the largest declines (Council of Economic Advisers, 2016). Indeed, over the last 60 years, the prime-age male labor force participation rate has fallen by roughly 10 percentage points. While studies of falling male labor force participation suggest that many factors are contributing, the lack of robust wage growth for less-skilled workers appears to be one of the primary drivers (Black and Powell, 2017). Furthermore, while female labor force participation has remained on an uptrend in many countries, it has been on the decline in the United States since the turn of the century, similar to the pattern for men.

Lower labor force participation because of lower productivity growth would increase the fiscal pressures described above. In particular, lower participation would be associated with less tax revenue from the working population and with greater spending for programs that support low-income families. Both factors would exacerbate the budget imbalances created as countries’ populations age. Therefore, it is more important for tax policy to encourage work.

This goal is also important because labor force increases engagement with society and one’s assessment of self-worth. A recent literature suggests that not participating in the labor force appears to be associated with undesirable social consequences such as “deaths of despair” (Case and Deaton, 2017) and greater addiction to opioid pain medication (Krueger, 2017).

The implication of these considerations is that tax systems should be changed to reduce disincentives for work. Doing so is especially important for the groups whose labor supply appears to be most responsive to changes in after-tax earnings—second earners—and for whom the social consequences of being out of the work force appear to be greatest—less-skilled men. For the former group, labor supply might be increased by increasing child care subsidies, while

for the latter group, labor supply might be increased by expanding the Earned Income Tax Credit.

The slowdown in real bracket creep that would result from lower productivity growth means that people's incomes rise above the ranges in which those tax provisions apply more slowly than they would otherwise. As a result, these changes can be less aggressive than would otherwise be the case.

Reducing Disincentives for Saving

In considering the implications of slower productivity growth for tax disincentives to save, one should start by considering the implications of slower productivity growth for optimal national saving. In a Ramsey model, a reduction in trend productivity growth has an ambiguous effect on desired saving. The substitution effect based on a lower return to saving implies that less national saving would be desirable. On the other hand, the income effect that arises from future generations being poorer implies that more national saving would be desirable. Elmendorf and Sheiner (2016) report that, for their choices of parameter values for the Ramsey model, lower productivity growth in the United States today argues for slightly more national saving.

One should also consider how lower productivity growth would affect optimal saving by individual households. If part of governments' response to the greater fiscal pressures they will face in a low-productivity-growth world is to cut benefits for the older population, then people should save more while working. In addition, the flattening of lifetime income profiles that might arise from lower productivity growth would argue for households doing more saving for retirement earlier in their working lives than they otherwise would.

The implications for tax policy are two-fold. First, for the United States at least, given the desirability of slightly greater national saving, taxes should be raised (or spending reduced) by at least enough to fully offset the negative implications of lower productivity growth for the fiscal balance. Second, tax policy should be adjusted to provide further encouragement for household saving.

Why and how tax policy should be changed to encourage more household saving are complicated issues. Tax policy has an important role to play both because tax policy can distort behavior and, even absent any tax-related distortions to behavior, many households appear to find it much more difficult to accumulate assets than traditional economic theory assumes (Dynan, 2017). On the former point, taxes on capital income can, in principle, reduce saving. That said, empirical studies yield little evidence that reducing the marginal tax rate on investment and saving would materially raise saving, while they would have undesirable consequences on revenue collection and distribution of after-tax income (see pages 8-9 of Congressional Budget Office, 2014, for a discussion of this issue). On the latter point, the evidence suggests that the saving behavior of many households is influenced much more by defaults, nudges and other aspects of behavioral design than by rates of return (see, for example, Chetty, Friedman, Leth-Petersen, Heien Nielsen, and Olsen, 2014). Therefore, encouraging saving through the tax code might best be done by offering tax breaks to offset the costs of firms establishing well-designed retirement savings plans for their employees.

As noted at the start of the paper, lower productivity growth is associated with less real bracket creep. One manifestation would be that households lose their eligibility more slowly for tax provisions that increase the return on saving for the lower-income part of the population such as the Saver's Credit in the United States. Economic theory would predict that less loss of eligibility might increase the saving of this group, implying less need for tax changes that would encourage saving. However, the available empirical evidence suggests that these programs have limited success at encouraging saving (Duflo, Gale, Liebman, Orszag, and Saez, 2007). As a result, lower real bracket creep probably would not make much of a difference in this context.

Redistributing Income

Lower trend productivity growth implies that the distribution of compensation changes—with some people receiving larger changes over time than others—would be shifted in a less favorable direction. As a result, more people would experience no growth in compensation or a loss in compensation. Such outcomes are especially harmful in countries where nominal financial

commitments are common (as in the United States given the prevalence of fixed-rate mortgages). If lower productivity growth resulted in lower inflation, the problem could be even worse given that positive inflation helps to erode the real burden of fixed nominal financial commitments over time.

Perhaps more important than this consideration, many people may be frustrated by a persistent lack of improvement in their standard of living because they expect that standards of living should improve over time. In the United States, for example, survey results from Pew (2017) suggest that about 60 percent of people expect today's children to be worse off financially than their parents (with similar findings for other advanced economies). One would expect this share to grow if wage growth were to decline further and create yet more frustration and anger about the economic and political system. Such frustration and anger can be politically destabilizing for countries and, more generally, hinder their ability to adopt some policies that would be good for overall economic growth such as fewer restrictions on international trade.

These considerations argue for using tax systems to increase the amount of income redistribution in a world with slower trend productivity growth. Doing so could take two broad forms: providing more insurance against bad outcomes and creating more widespread opportunity. To provide more insurance against bad outcomes, governments could make their tax systems more progressive or they could explicitly strengthen the insurance features of the tax codes such as by adopting a tax-based wage insurance program (for an example of a possible program, see Kling, 2006). To create more widespread opportunity, governments could provide more tax incentives for firms that provide training for their workers or more tax subsidies to finance higher education for low-income families.

The real bracket creep considerations in this context are mixed. On the one hand, people move into higher tax brackets more slowly with slower wage growth, so the progressivity of the tax code rises more slowly absent explicit changes in the tax code. That factor suggests that explicit efforts to increase the general progressivity of the tax code are somewhat more important. On the other hand, lower-income people's incomes rise above eligibility thresholds for certain tax

credits more slowly than otherwise, implying that explicit efforts to expand those credits are somewhat less important.

Mitigating Business Cycle Fluctuations

Tax policy has long been used to help stabilize the economy in the face of a negative shock to aggregate demand. For example, countries sometimes legislate explicit changes to tax policy such as an income tax rebate to spur consumer demand or a larger deduction for the depreciation of new investment in order to encourage business spending. In addition, some regular features of tax systems provide automatic countercyclical stimulus without deliberate policy changes. For example, the progressive income tax system in the United States automatically reduces taxes more than proportionately to income when the country enters a downturn.

That said, many countries used monetary policy as their primary macroeconomic stabilization tool in the decades leading up to the financial crisis. The perceived dominance of monetary policy in this context was partly due to the lags associated with developing, legislating, and implementing fiscal policy. It also may have owed to disagreement in the empirical literature about how effective fiscal policy is for countercyclical purposes (see, for example, the discussions in Ramey, 2011, and Auerbach, 2012).

As discussed above, lower productivity growth has lowered real interest rates. As a result, and as noted above, central banks will reach the effective lower bound on their policy rates more quickly when they reduce rates in the face of negative shocks to aggregate demand. In the United States, for example, the Federal Reserve has cut the federal funds rate by more than 5 percentage points in each of the past three recessions. But, the Federal Reserve's own projections of future federal funds rates imply that the Fed will have much less room to cut rates in the next downturn.

The experience of recent years has illustrated that central banks have other tools for easing credit conditions when policy rates near zero, such as large-scale asset purchases (sometimes known as quantitative easing or "QE"), changing forward guidance about policy rates, and pushing policy rates into negative territory. However, a growing body of literature is skeptical that these

alternative tools are sufficient to offset the inability to lower policy rates more substantially (see, for example, Blanchard and Summers, 2017).

Therefore, with the countercyclical power of monetary policy blunted, countercyclical fiscal policy will be substantially more important in stabilizing macroeconomic conditions going forward. This increases the need to strengthen the automatic stabilizers in tax systems. Specific approaches deserve further study. In the United States, for example, one possibility would be to legislate automatic reductions in payroll taxes when unemployment rates hit certain thresholds coupled with automatic general revenue contributions to Social Security to make up for the forgone revenue.⁵ Moreover, policymakers should be prepared to take discretionary fiscal policy actions to counter economic downturns.

Minimizing Other Distortions in Resource Allocation

Last but certainly not least, tax policy should aim to minimize tax-based distortions in resource allocation and correct for externalities that distort the allocation of resources apart from taxes. A large literature documents ways in which current tax systems lead to misallocations of resources, including distorting investment across industries and asset types, distorting the choice of financing for investment, and distorting how businesses are organized and where they are located (see IMF, 2017, for a summary). In addition, current tax systems often do not do enough to correct for both negative and positive spillovers of certain kinds of economic activity, such as the harmful effects of carbon emissions and other kinds of pollution and the beneficial effects of much research and technological development.

Improving tax systems to address these problems would be important regardless of underlying productivity growth. Yet, such changes are especially important when productivity growth is weak. Therefore, making tax systems more efficient should be a particularly high priority for policymakers if productivity growth falls ½ percentage point below the already modest baseline projections.

⁵ Blinder (2016) discusses other options along these lines.

Summary and Conclusion

A sustained period of very low productivity growth—together with various accompanying changes in the economic environment—would justify a number of changes in tax policy. Given aging populations, many countries could face significant fiscal shortfalls in coming years even if productivity growth were to rebound to historical averages. Lower productivity growth would lower the income of the working population and thereby exacerbate these challenges because less tax revenues would be collected. Even assuming that lower productivity growth results in lower interest rates, tax systems will need to collect more revenue per dollar of GDP to support their aging populations.

Lower incomes are also likely to put downward pressure on labor force participation rates, increasing the budget pressures (both because tax revenues from the working population would be even lower and because spending on social insurance programs might need to rise). This consideration suggests a need to increase tax incentives for working, particularly for those groups that are very responsive to such incentives and those groups for which the social consequences of dropping out of the labor force are most harmful.

While it would appear that the optimal national saving is little changed by the assumption of lower productivity growth, there would arguably be a need for lower- and middle-income households to start saving for retirement earlier given the possibilities of flatter lifetime income profiles and cuts in government benefits for the older population. While research suggests that changing the after-tax return on saving would not have a large effect on the saving of this group, changes in tax law that encouraged more well-designed workplace retirement savings plans would be warranted.

The lower real interest rates that would result from sustained low productivity growth reinforces concerns about the future efficacy of monetary policy as a macroeconomic stabilization tool; this possibility lends more support to the view that the tax system should build in more automatic stabilizers. And, finally, the fiscal and social consequences of the lower income growth that

would result from lower productivity growth raise the urgency of moving toward a tax system that minimizes distortions to resource allocation.

Even if future productivity growth were to follow the baseline assumption of being only slightly below the historical average (as opposed to the “downside risk” scenario, which is ½ percentage point lower), it would probably be worthwhile for tax systems to move in many of the directions suggested by this paper. Many countries are already on track to experience fiscal imbalances, low income growth has already had many negative social consequences, concerns about the limits on future monetary policy are already widespread, and countries should always be seeking to minimize the distortions from their tax systems.

The discussion in this paper has been largely qualitative, as the specific tax system changes needed will vary by country and depend on how much a reduction in productivity growth would reduce interest rates and change income growth at different points in the distribution. On the latter question, one lesson of the last few decades is that changes in aggregate productivity growth may have a very different impact on incomes at different points in the distribution; such variation has implications for social and fiscal consequences. Political feasibility is, of course, another important issue. If the optimal policies cannot be achieved, thought should be given to “second best” alternatives.

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