

UC Berkeley

UC Berkeley Previously Published Works

Title

Fiscal Policy

Permalink

<https://escholarship.org/uc/item/6jn5158q>

Author

Auerbach, Alan J

Publication Date

2019

Peer reviewed

Fiscal Policy

Alan J. Auerbach
University of California, Berkeley
November 2, 2017

This paper was prepared for the Conference on Rethinking Macroeconomic Policy IV, held at the Peterson Institute of International Economics, October 12-13, 2017. I am grateful to Olivier Blanchard, Bill Gale, and conference participants for comments on an earlier draft.

I. Introduction

Fiscal policy is back, largely as a consequence of the very severe, prolonged Great Recession/global financial crisis that led into the challenges facing monetary policy as it was forced to confront the limitations presented by the Zero Lower Bound (ZLB). But the practice of fiscal policy remains subject to some controversy, related to long-standing issues as well as ones of relatively recent vintage. In this paper, I address several challenges that currently confront the United States and other developed countries in seeking the appropriate fiscal policy path.

Below, I discuss the following four issues:

1. The role that fiscal rules should play in limiting fiscal policy actions;
2. The potential for stabilization policy to limit the severity of economic fluctuations;
3. The practice of fiscal policy in low-interest-rate environment; and
4. Coordination and distinction between monetary and fiscal policies.

A brief conclusion follows this discussion.

II. Fiscal Rules

The debate between rules and discretion may have originated in the monetary policy sphere, but it has become central to fiscal policy as well. Fiscal rules are everywhere, and yet so is discretionary fiscal policy.

There is little doubt that some fiscal rules make more sense than others. For example, it is hard to see much value in having the national debt limit that has caused so much political distress in recent years in the United States; since Congress decides on spending and taxes, why

require it to decide separately on the difference between the two, given that it lacks the power to violate an identity? (And, in addition, why base the limit, as the U.S. rule does, on a gross measure that includes debt held by government agencies?) Limits on certain classes of expenditures invite substitution by spending in other categories, and overall expenditure limits can be circumvented through the use of tax expenditures (i.e., expenditure programs carried out through the tax code). But even logical and well-written fiscal rules require justification, given that constraining a government's ability to practice fiscal policy has obvious disadvantages as well.

The standard arguments favoring rules for monetary policy, such as avoiding destabilizing actions or dynamic inconsistency on the part of government, also apply here, but there are others as well, given the many dimensions of choice and effect that fiscal policy can have. Most notably, fiscal policies can have important distributional effects within and across generations, and fiscal sustainability and the avoidance of fiscal crises is a paramount concern. Yet, there are also significant arguments against fiscal rules that haven't been central in the monetary policy context, including the difficulty of measuring fiscal policy's stance, an issue discussed below.

Another key difference between fiscal and monetary rules is that fiscal rules can and often do apply at subnational levels of government. Nearly all U.S. states have some version of a simple, easily described balanced-budget rule, which typically specifies an adjustment process for dealing (possibly immediately) with general-fund deficits and permits borrowing on a regular basis only for smoothing very short-run (e.g., seasonal) revenue fluctuations or funding capital spending. At the other extreme, perhaps the most elaborate fiscal rules in existence are

those that apply to member countries in the European Union, the culmination of a process dating to the original Stability and Growth Pact in the '90s and now enshrined in a 224-page volume (European Commission 2017) specifying the rules and the enforcement process in great detail. This framework has undergone substantial revision over the years, with new features added as the actions of member countries were seen to reveal weaknesses in the existing structure. But rule complexity does not guarantee success, as it invites subjective interpretation and reduces transparency. The problems are particularly severe when the underlying objectives are unclear.

In a single jurisdiction, such as at the U.S. federal level, a potential objective for fiscal rules may be to counteract the myopia that is built into the political process by the short tenure of office-holders, which encourages excessive transfers of resources from future generations to current ones, or from future governments with different objectives than the current one. Clearly, limits on spending and/or deficits that the United States has attempted over the years were at least partly motivated by such concerns. Also, while not a major issue for the United States, more practical concerns might play a role, motivating governments that seek to maintain access to capital markets to use self-imposed restrictions to establish a more credible commitment to fiscal sustainability.

In a federal system, such as the European Union, other possible reasons for fiscal rules arise, including limiting the transmission of fiscal shocks among member countries and avoiding pressure for bailouts, either through direct fiscal assistance or through support from the central bank. The fact that the E.U. fiscal rules are centrally imposed suggests motivations of this kind, although one might also justify centralized imposition of budget rules as providing help to the

governments of individual countries in resisting political pressure from local interest groups, in much the way that international trade agreements can. While it is hard to judge the design of fiscal rules without knowing their motivation, the E.U. rules make little sense with regard to some of these possible objectives.

For example, the cross-border linkages within the European Union are far weaker than those among states within the United States¹ (for which the fiscal rules are not centrally imposed, but rather were adopted voluntarily for reasons relating to capital market access²), and limiting the transmission of shocks could well require fiscal policy action rather than inaction. As for other objectives, the successive failure at getting countries to abide by deficit targets, culminating in the ongoing Greek bailout, has resulted in a series of refinements, especially in 2005 and 2011, aimed at making the rules more effective. But modification has not proven very helpful, in the European Union or in the United States, where a succession of budget rules, from the Gramm-Rudman-Hollings legislation of the 1980s to the Budget Enforcement Act of the 1990s seem to have had little lasting impact.

Indeed, a very basic question is whether fiscal rules can have any effect at all, good or bad, given these experiences. Empirical analysis is quite difficult in the E.U. or U.S. context, because there are no clear natural experiments that would allow us to separate the effects of rules from those of other factors, such as a change in a government's commitment to budget discipline; one cannot treat budget rule adoption or modification as a random event if it results

¹ See the discussion in Auerbach (2011).

² See Eichengreen and von Hagen (1996).

from a change in the policy environment.³ Perhaps the clearest evidence comes from analyses of U.S. states, for which budget rule characteristics typically date to the 19th century. This variation is arguably unrelated to current unobservable differences among states. The evidence finds that budget rule stringency does affect the speed and nature of fiscal responses (Poterba 1994), with the consequence that state-level economic fluctuations are more severe where rules are more stringent (Clemens and Miran 2012).

These findings provide support for greater rule flexibility, especially during recessions. The case is made stronger (as discussed below) by recent fiscal consolidation outcomes following the Great Recession. But the very existence of stringent fiscal rules is a reminder of the challenge of providing such flexibility without compromising the rules' enforceability, given the disagreements that arise in real time about the severity of economic conditions and the need for countercyclical policy.

As rules become more complex and lose transparency, they may effectively become guidelines, especially in a setting where, as in Europe, there is no credible enforcement mechanism; it is implausible that cash-strapped countries will actually be hit with large fines or expulsion, because it is not in the interest of the organization to take such actions, even if they are threatened *ex ante*. This is unlike in the context of U.S. states, where states can be held to account because of a strong central government that performs important fiscal functions, including stabilization policy, and provides most of the safety net for the residents of individual

³ Auerbach (2008) considers patterns of government responses to fiscal conditions across different U.S. federal budget regimes, rather than trying to assess their overall impact on debt and deficits, and finds some differences that are consistent with the form of the budget rules. For example, there were stronger policy responses to lagged budget deficits and weaker responses to economic conditions during the Gramm-Rudman-Hollings period in the 1980s, when specific deficit targets applied.

states, and because of the ease with which state residents can “vote with their feet” by moving elsewhere. Though many have argued for an E.U. fiscal union, for this and other reasons, that outcome seems quite unlikely at this point.

One of the most challenging issues for budget rules to deal with involves control and monitoring of long-term commitments, particularly for age-based programs like public pensions and health care.⁴ Unfunded commitments for future expenditures represent a rapidly growing implicit liability for virtually all developed countries, because of rising health care costs and old-age dependency ratios. They swamp explicit government liabilities, in present value.

For example, as of the beginning of 2017, the official government-estimated (infinite-horizon) unfunded liability of the U.S. Social Security old-age pension and disability system was \$34.2 trillion (Board of Trustees, OASDI Trust Funds 2017, Table VI.F2) and that of the Medicare old-age health-care system was \$56.4 trillion (Board of Trustees, HI and SMI Trust Funds 2017, Tables V.G2, V.G4, and V.G6)⁵. By comparison, national debt held by the public at that time was \$14.4 trillion.⁶ Controlling what amounts to less than 1/7 of total liabilities seems like a bad start for a fiscal rule, and particularly ill-suited to a setting in which entitlement reform is an important policy issue. Indeed, this omission is currently a major fiscal problem for the U.S. states, for which balanced-budget rules exclude the large public-employee pension obligations

⁴ Even in countries that (unlike the United States) provide public health-care funding for all or most residents, health-care spending is to a considerable extent an old-age program because of the much higher level of spending per capita among the elderly.

⁵ The unfunded liabilities for Medicare Parts B and D equal the present values of projected general revenue funding for these two programs, which, unlike Social Security and Medicare Part A, do not have dedicated funding sources.

⁶ Although infinite-horizon projections are not available for other countries, even calculations over a much shorter horizon (which reduces their size, given the worsening cash-flow imbalances over time) shows that health and pension liabilities, based on IMF projections through 2050, are large relative to publicly held debt for the other G-7 countries as well. See Auerbach and Gorodnichenko (2017).

that have been incurred over the years and left many states with unfunded liabilities that are quite large in comparison to their explicit debt (Novy-Marx and Rauh 2011).

But, for several reasons, simply adding implicit and explicit liabilities together to form some overall measure of indebtedness is not a solution, either. First, such liabilities do not have the same legal status as explicit debt, even though they may be difficult to reduce, politically. Second, the corresponding claims are not marketable, and so are essentially an internal component of a country's national debt, denominated in the country's own currency. Third, also because these claims are not tradeable, their market value can only be estimated, and estimates typically vary considerably depending on assumptions about economic growth, future interest rates, and demographic factors, making them more subject to political pressure and also more volatile from year to year, as forecasting assumptions are updated based on new information.

Recognizing the importance of addressing implicit liabilities, the current E.U. budget rules now include a specific "pension reform clause" (European Commission 2017, p. 41) that is intended to provide flexibility by ignoring additions to a country's deficit and debt that would be produced by a pension reform that substitutes explicit debt for implicit debt. Such increases in measured debt would result, for example, if a country substituted individual retirement accounts, funded with current workers' pension contributions, for these workers' future public pension benefits, while using public borrowing during transition to cover the legacy costs of the existing public system no longer financed by the ongoing pension contributions. Current workers would have assets in place of claims against the government, the government would

have more debt outstanding but be liable for smaller future pension claims, and current retirees would be unaffected.⁷

While, perhaps, a step in the right direction, the pension reform clause clearly increases the complexity and subjectivity of the budget rules. Yet, at the same time, it deals only partially with the implicit-liability problem. First, pension reform can reduce implicit liabilities without having any consequences for explicit debt. An example would be a permanent, equal-size reduction in a public pension program's annual benefits and dedicated taxes, starting from a position of annual cash-flow balance.⁸ Second, the provision applies only to pension reform, even though, for many countries, old-age health commitments may be a bigger fiscal problem. Third, while old-age spending may account for the most important "off-budget" component of a government's balance sheet, a country's tax structure matters as well.

An example to illustrate this last point is the taxation of private pensions, which, even if no tax is applied to the inside build-up during the middle, accumulation phase, can occur either at the initial, contribution stage (by taxing pension contributions along with other employee compensation, following the so-called T(axed)E(xempt)E(xempt) approach) or at the final, withdrawal stage (by allowing tax-free pension contributions but taxing all withdrawals, following the EET approach).

⁷ Even with no change in the sum of explicit and implicit liabilities, one might push for such a reform to provide greater capital market access to current workers. This was an argument used during the G.W. Bush administration in support of a U.S. proposal along these lines, and was not without its critics. However, the reform could also be coupled with a reduction in overall liabilities, and that is presumably a motivation for the E.U. pension reform clause, given the need for countries to improve long-run fiscal sustainability.

⁸ In the limit, with annual contributions and benefits being reduced all the way to zero, there would be no implicit liability at all, and yet no change in the annual cash-flow balance.

Under certain assumptions,⁹ the two approaches yield the same economic outcomes for individuals and government, in terms of incentives for saving and the present value of tax revenues. If these assumptions do not hold, there may be policy reasons to prefer one approach to the other, or to wish to utilize some combination of the two. But, unrelated to these policy reasons is the fact that, in relation to the TEE approach, the EET approach provides lower short-term tax revenues and offsets these with a deferred tax asset associated with future withdrawals. Budget rules that ignore this relationship provide governments with a simple way of dealing with deficit limits, by replacing deferred taxes with current ones.¹⁰ Rather than this being a unique or unusual case, the issue is quite pervasive within tax systems¹¹ and can distort tax policy in favor of measures that accelerate the government's receipt of tax revenues.

Finally, achievement of a sustainable fiscal policy does not guarantee that the policy is equitable on a generational basis. Two policies can have the same trajectory of revenues and spending and impose quite different patterns of fiscal burden on different generations. This is the primary rationale for the development of generational accounting (Auerbach et al. 1991), which goes beyond the assessment of sustainability by allocating components of the government's intertemporal budget constraint among current and future age cohorts.

⁹ These are that individual savers face the same tax rate when saving and withdrawing funds and may contribute the same after-tax amounts under the two systems.

¹⁰ Indeed, the U.S. government has utilized this strategy in moving from traditional (EET) IRA and 401(k) arrangements to so-called Roth (TEE) arrangements, going so far as to offer additional tax incentives for account holders to speed up tax payments by withdrawing funds from traditional accounts and depositing them in Roth accounts.

¹¹ See Auerbach (2009).

Though some advocates have suggested incorporating generational accounts within budget rules, this has not occurred. Such a step would be even more challenging than a comprehensive inclusion of implicit assets and liabilities, given the necessary breakdown among cohorts, which in turn requires much more detailed projections as well as a series of tax incidence assumptions. Generational accounts have been constructed not only by individual academic researchers but also by many governments over the years. Their main use has been and is likely to remain to provide information about existing burdens and how prospective policies could influence generational burdens. In this practice, one may see the provision of information as an alternative to budget rules. But the same alternative is available more generally, even in cases where the budget rules are far less ambitious and more easily specified.

In light of the conflict between flexibility and credibility, a logical step to consider seriously is whether to jettison the rule-based approach altogether and to strive to achieve some of the same ends through the provision of information, to make markets, voters, and indeed governments themselves aware of the possible pitfalls and benefits of policies being proposed or undertaken. In a sense, this is already the approach being taken through the detailed information provided by documents such as the E.U.'s triennial *Ageing Report*, which projects pension payments of member countries and highlights the successes that several have achieved in recent years in reducing their long-term liabilities through pension reforms.¹² Yet this approach can be strengthened by ensuring that evaluations of this kind are independent of government pressure, and can go further by incorporating assessments of the likelihood that enacted policy reforms will succeed, rather than simply taking current policy as given, and by

¹² See, e.g., European Commission (2015), pp. 54-112.

evaluating policy changes in other dimensions, for example with regard to distributional consequences.

Regarding this objective, there has been an important trend toward the creation of independent entities for fiscal evaluation, dating at least to the creation of the U.S. Congressional Budget Office in 1974, and more recently including entities with greater autonomy and ability to evaluate government proposals, including the Swedish Economic Policy Council, established in 2008, and the U.K.'s Office of Budget Responsibility, established in 2010. Such entities can confront complicated situations in a way that fiscal rules simply cannot. As is the case in the United Kingdom, the fiscal entity can also be given the power to lay out the economic and fiscal projections on which the government's policy evaluations must be based. Although there are many potentially relevant characteristics of such councils, there is some preliminary evidence that having a fiscal council that is legally independent and with a broad responsibility for monitoring fiscal policy may enhance economic performance as well as the quality of fiscal forecasts (Debrun and Kinda, 2014).

Fiscal councils should be viewed as having the potential to serve an important auditing role, rather than to directly constrain or determine fiscal policy in the manner intended for fiscal rules. Given the political determination of fiscal policy, no such delegation of the kind now provided to independent monetary authorities is really conceivable for these fiscal entities. But this is not really a limitation, relative to the power of budget rules, given what budget rules actually can do. Further, more than simple budget rules, independent fiscal bodies can expose gaps in logic and provide additional support and pressure for needed changes in fiscal policy that may require implementation over a period of years.

Although the fiscal council is still a relatively new and evolving mechanism, it may well play a much more important role than explicit fiscal rules in helping countries undertake large and long-term fiscal adjustments. For the future, coming up with the right combination of independence, scope and authority for such entities probably deserves more attention than the continuing refinement of formal budget rules. This is especially so in light of two factors, the increasing relative importance of a long-term perspective in assessing fiscal policy adjustments and the difficulty of designing rules that are transparent and credible while at the same time allowing sufficient flexibility.

III. Stabilization Policy

The perceived role that fiscal policy should play in promoting economic stabilization has undergone a considerable change in the last decade, as a consequence of economic conditions and advances in economic research. We have gone from perhaps a consensus that automatic stabilizers should be the primary fiscal tool for countercyclical policy, because discretionary fiscal policy is difficult to time and/or relatively ineffective when implemented, to a much stronger sense of the potential value of discretionary fiscal policy to address recessions.

Part of the support for this view comes from results showing that, anecdotal evidence notwithstanding, discretionary fiscal policy actually has been reasonably well-timed, at least for the United States since the early 1980s. For example, measuring discretionary policy changes either by changes in the full-employment surplus or by CBO estimates of legislated changes in revenues and spending, expansionary (contractionary) policy changes have been implemented during periods of economic weakness (strength), as measured by the gap between actual and potential GDP (Auerbach 2003).

But more central to the evolving view of discretionary fiscal policy has been a series of empirical studies that has shifted the weight of evidence, if not resulting in a complete consensus, regarding policy effectiveness. Using a variety of estimation strategies for different countries and different time periods, research has suggested that multipliers can be large for both tax and spending changes, and that the effects may be enhanced during periods of economic slack. Much of the research has been time-series based, building on the contribution by the SVAR analysis of Blanchard and Perotti (2002) by using approaches to identifying fiscal shocks that went beyond the original method of assuming no within-period discretionary policy feedbacks. Only a selection of the results from this substantial literature can be cited here, to illustrate key findings.

Relying on a narrative approach to identify tax policy changes unrelated to short-run economic factors, Romer and Romer (2010) found a peak impact multiplier of around 3 for legislated U.S. federal tax changes for the postwar period ending in 2007, just before the Great Recession. Based on a regime-switching smooth-transition VAR (STVAR) approach, Auerbach and Gorodnichenko (2012) found that the Blanchard-Perotti multiplier estimates for government spending represented an average of multipliers that were much larger in recessions than expansions, in the range of 1 to 1.5 in recessions but falling below 0.5 in expansions, and that the difference across regimes became stronger when one sharpened identification of fiscal shocks by adding real-time professional forecasts to the information set. Using as an alternative to the STVAR methodology a direct-projections approach to estimate multipliers over different horizons directly using single equations, but again controlling for professional forecasts and allowing for state dependence, Auerbach and Gorodnichenko (2013)

found the same state-dependent multiplier pattern based on semiannual data for a sample of OECD countries, for GDP as well as other macroeconomic aggregates, suggesting that their original findings were not attributable to factors specific to the United States.

Finally, a large number of papers have utilized cross-state variation in spending and transfer programs within the United States to estimate multipliers, often finding very large effects (e.g., Nakamura and Steinsson 2014), including specifically for policies adopted during the Great Recession (e.g., Chodorow-Reich et al. 2012). Translating these multipliers, often in the range of 1.5 – 2 for GDP or some related output measure, into national-level multipliers is difficult, because some factors (e.g., cross-state leakage) imply lower cross-section multipliers, while others (e.g., little offsetting tax liability to pay for federally-financed state-level spending or tax changes) imply larger ones, but under reasonable assumptions the cross-state results are consistent with large national multipliers, perhaps larger than those found by Auerbach and Gorodnichenko (2012), especially for countries facing the ZLB, for which offsetting monetary responses would not be expected (Chodorow-Reich 2017).

One final piece of evidence suggesting large multipliers during the Great Recession is the finding by Blanchard and Leigh (2013) that, especially early in the crisis period, output forecast errors of the IMF and other organizations were correlated with the size of fiscal consolidations undertaken by different countries, which indicates (under certain assumptions) that the multipliers used in constructing the forecasts understated the true multipliers. This is particularly of note because the question of whether fiscal consolidations can make sense, even during periods of economic slack, has been debated for many years.

In theory, a fiscal consolidation can be expansionary, depending on what the alternative policy path would have been and what other reforms (e.g., to labor markets) might accompany the consolidation. Empirically, there have been conflicting results, with differences relating to sample identification and subtle methodological differences, such as how one controls for monetary policy responses, although earlier findings in favor of expansionary effects of fiscal consolidations have given way to a range of estimates falling between mild contractionary effects (e.g., Alesina et al., 2015) and stronger ones (IMF 2010). One fairly persistent result is that tax-based consolidations tend to have been more damaging than spending-based consolidations. IMF (2010) traces much of this difference to looser monetary policy responses to tax-based consolidations, although given the nature of identification of consolidations it is difficult to explain the reason for this difference in monetary policy reactions. More generally, it is hard to know whether these results would hold for a particular country choosing between the two approaches, as opposed to the choices made in the past by different countries in different circumstances.

One condition that might affect the desirability of fiscal consolidation is a country's initial fiscal position. By their nature, consolidation plans are undertaken when countries perceive the need for greater fiscal responsibility, but initial debt levels and other fiscal indicators can still vary. The literature has found mixed results regarding whether fiscal multipliers vary according to initial indebtedness, as measured by a country's debt-GDP ratio. Among relatively recent studies, some (e.g. Ilzetzki et al. 2013) find a lower fiscal multiplier in high-debt countries and some (e.g., Corsetti et al. 2012) show little difference across low- and high-debt countries.

A question that has received relatively little attention in the empirical literature is the extent to which the dependence of multipliers on levels of indebtedness interacts with their dependence on the state of the economy. For example, might having a high debt level influence the effectiveness of fiscal policy less in an expansion than in a recession, when there may be greater concern among market participants about a fiscal expansion generating a financial crisis? Or, alternatively, might the greater strength of fiscal multipliers during periods of economic slack cause markets to have a more benign response to fiscal expansion, even for high-debt countries? The latter might hold particularly if multipliers are so large in recession that the fiscal expansion actually reduces a country's debt-GDP ratio, as a consequence of stronger output and revenue growth. The likelihood of fiscal expansions being self-financing in such circumstances has been suggested recently by DeLong and Summers (2012).

Auerbach and Gorodnichenko (2017) address this question directly by estimating the relationship between debt-GDP ratios and fiscal shocks, using the same OECD data set and the same direct-projections methodology as in Auerbach and Gorodnichenko (2013). Their point estimates suggest that debt-GDP ratios actually fall in response to fiscal expansions when economies are in recession. This result is consistent with their finding that the perceived risk of fiscal crisis, as measured using credit default swap spreads on government debt, falls at the

same time.¹³ These results do not hold for positive fiscal shocks adopted during economic expansions.¹⁴

As to the question of how these results depend on initial debt levels, Auerbach and Gorodnichenko (2017, Table 5) do find some differences in the patterns of results in booms versus slumps for high- versus low-debt environments; for example, there is a significant reduction in a country's debt-GDP ratio when a fiscal expansion is undertaken in a slump when the debt-GDP ratio is low, but an insignificantly positive impact when a fiscal expansion is undertaken in a slump when the debt-GDP ratio is high. They also find that fiscal stimulus during a slump significantly reduces long-term interest rates only when the debt-GDP ratio is low. But other results, for example with respect to GDP and the CDS spread, are not more favorable in a slump when the debt-GDP ratio is low rather than high, so it is hard to draw strong conclusions from the available data regarding the pattern of results in this two-way (debt-GDP ratio and economic strength) comparison.

Note that the findings in Auerbach and Gorodnichenko (2017) are not based just on the period surrounding the Great Recession, and therefore apply more broadly, even in periods when interest rates and debt service were not so low. On the other hand, they are based on an historical period when debt-GDP ratios and implicit liabilities were generally considerably lower than they are now, and so should not be seen as a prescription for countries to ignore their

¹³ The latter result is especially useful in ascertaining whether expansionary fiscal policy improves or worsens the market's perception of the government's fiscal position, to the extent that government debt fails to measure a government's fiscal stress accurately, for example because of large looming future deficits or implicit liabilities of the kind discussed earlier.

¹⁴ The paper also provides estimates at an annual (rather than semiannual) frequency based on the IMF fiscal consolidations data set discussed earlier, with similar findings regarding the effects on debt-GDP ratios and CDS spreads.

fiscal positions when contemplating countercyclical fiscal policies or to pursue “bridges to nowhere” when doing so.

In contrast to the resurgence of confidence in the use of discretionary fiscal policy, there has been relatively little recent attention to the role that automatic stabilizers can play as a complementary policy tool. One exception is the paper by McKay and Reis (2016), who evaluate the impact of automatic stabilizers on the U.S. economy in a calibrated DSGE model with heterogeneous agents, estimating the impact of tax and transfer systems on the smoothing of output and consumption in response to economic shocks. Their findings are largely negative, in that the existing tax and transfer system is relatively ineffective at stabilizing output or improving welfare, while emphasizing the potential importance of channels other than the one usually cited, of cushioning disposable income fluctuations. These channels include the social insurance mechanism (which, by reducing the need for precautionary saving, can lead to a lower ability to engage in consumption smoothing) and redistribution among households with different current spending propensities. Given that automatic stabilizers are chosen with a longer-run focus than discretionary policy, more research on the performance of alternative types of tax and transfer programs in response to economic shocks would be quite useful for policy design, which typically proceeds without paying much attention to cyclical consequences.

Even though discretionary fiscal policy is normally undertaken with a limited horizon for its effects, it still might benefit from longer-range planning, to make discretionary policy actions more effective when they are undertaken. For example, during the process of adopting the American Recovery and Reinvestment Act of 2009 (ARRA) in the United States, there was

concern that planned infrastructure spending would confront a lack of “shovel-ready” public works projects that were socially beneficial and could be undertaken rapidly and efficiently. Reflecting the likelihood of implementation delays, the ARRA legislation permitted funds provided to be spent several years afterward,¹⁵ presumably well after any countercyclical benefit could be realized.

To shorten such delays in the future, some have proposed maintaining a bank of ready-to-go infrastructure projects that can be undertaken quickly (e.g., Transportation Research Board 2014). But the desirability of this approach is questionable, given that the projects involved might be delayed for several years, depending on the timing of the next recession. This potential delay would make critically needed projects unsuitable for the program and require continual updates to the project list to reflect changes in priorities and technology. Nevertheless, infrastructure spending remains potentially attractive as a component of fiscal stimulus packages, given the large short- and medium-run multipliers that have been estimated for it relative to other components of government spending (Leduc and Wilson 2012). More evidence on the types of government spending that might be effective tools for countercyclical policy would be useful. For the United States, an alternative channel likely to suffer from shorter lags is direct transfers to state and local governments, to lessen their need to engage in the kind of sharp tax increases and spending cuts adopted during the last recession to comply with balanced-budget rules.

¹⁵ The spending deadline – September 30, 2017, the end of the 2017 fiscal year – has only now just passed, more than eight years after the official end of the Great Recession in the United States.

IV. Fiscal Policy in a Low-Interest Rate Environment

How should fiscal policy change in response to low government borrowing costs?

Leaving aside the circumstance of monetary policy actually being constrained by the ZLB, which would have its own implications for fiscal policy (discussed below), low borrowing costs present the prospect of a lower cost of capital for government projects and a reduction in the burden of debt service. This has led to suggestions that an appropriate response would be a more expansive undertaking of government investment and a delay in undertaking the fiscal consolidations needed to respond to high debt-GDP ratios (e.g., Elmendorf and Sheiner 2017). Several notes of caution apply to this conclusion.

First, as noted above, debt-GDP ratios provide an incomplete measure of fiscal sustainability, especially for countries undergoing population aging with large implicit liabilities associated with unfunded or underfunded old-age pension and health care commitments. Because such commitments involve future cash-flow deficits under current policy projections, lower interest rates increase their present value, in the same way that they would for an underfunded private pension plan – it will take higher contribution levels to meet the cost of such obligations. This means that a country's overall fiscal gap – measured as the permanent annual adjustment of primary surpluses relative to GDP needed to make the fiscal policy path sustainable – need not fall much, or at all, as interest rates fall.¹⁶

Second, a low government interest rate may reduce the expected rate of short-term government debt accumulation, but expected debt accumulation is likely not the right measure

¹⁶ For example, Auerbach and Gale (2009) estimated that, over the infinite horizon, the U.S. fiscal gap was actually increased by assuming that the government would face a zero interest rate for the next 20 years, rather than the interest rates being projected at the time by CBO.

to target in an uncertain environment, given that higher debt accumulation – and the need for more fiscal consolidation – is likely to coincide with weaker economic growth and a higher value of resources to the private and public sectors; that is, government planning should reflect risk aversion of the individuals it represents by attributing a higher cost of debt service than that implied by using the safe government interest rate.¹⁷

This argument for using a higher interest rate in evaluating potential government investment projects grows stronger once one also takes account of the fact that government revenues must be raised in a distortionary manner. The tax increases in future states of the world in which a stronger fiscal consolidation is needed will be especially distortionary, given the high tax rates required and the nonlinear relationship between tax rates and deadweight loss. Such future tax rates may be especially high if the sharp increase in inequality that has occurred in the United States and to some extent in most other developed countries compels increases in the use of tax policy for redistribution in addition to paying for government purchases and debt service; and the deadweight loss associated with any given tax rates also may be higher in the future as a consequence of increased international labor and capital mobility.¹⁸

¹⁷ This is essentially the point made by Ball et al. (1998) in arguing that having a safe rate of return below the rate of economic growth can still leave future generations worse off as a consequence of additional borrowing. One may also see this argument as related to the one rejecting the notion that a low safe rate of interest, below the economy's growth rate, is evidence of dynamic inefficiency (Abel et al. 1989). The point could be strengthened by the presence of implicit liabilities, which are associated with future cash-flow deficits that must be met with additional resources, if the revenues associated with entitlement programs are more sensitive to the business cycle than program costs. This would be true, for example, if, as is the case for the U.S. Social Security system, pension benefits of those already in retirement are price-level indexed while dedicated tax revenues depend on real wages.

¹⁸ These issues are discussed further in Auerbach (2014). Note that this argument applies to some extent even if borrowing is used for capital expenditures, given that most government investment projects do not yield a direct government revenue stream, although one would want to take into account any revenues generated indirectly by enhanced private productivity.

Third, to the extent that government borrowing crowds out private investment or increases the government's own interest rate, the low rate of return on government debt may not fully reflect its opportunity cost. Finally, as concerns borrowing for the specific purpose of undertaking public investment, the irreversibility of that investment should be included as a factor in evaluating benefits. Irreversibility is a standard argument for higher required rates of return for private investment (e.g., Dixit and Pindyck 1994), but it would seem that it is a much bigger concern for many types of government investment projects – there is no secondary market for bridges and highways.

One interesting and relatively recent argument in favor of additional government borrowing based on low interest rates is the scarcity of safe assets, particularly those issued by the U.S. government and held around the world. While much of the literature on the question has focused on the positive macroeconomic effects of an increase in safe-asset supply, the U.S. government should already have its own incentive to respond; as a supplier of safe assets with considerable market power, it should be in a position to earn rents from other countries by doing so.

A need for more safe assets is certainly plausible, but the solution of supplying more government debt brings with it the question of what to do with the debt. Borrowing to cut taxes is an extremely counterintuitive policy prescription, given that this combination may increase the likelihood that the government will experience fiscal stress, which has led some to suggest the alternative strategy of increasing investment in public infrastructure (Caballero et al. 2017).

But why not use the additional government funds to finance private investment? Presumably, the choice between private and public investment should depend on where potential social returns are higher, taking into account the actual uses to which public investment funds would be put, the deadweight cost of private tax revenues foregone as a consequence of public rather than private investment, differences in the distribution of benefits, and so forth. A recent history of underinvestment in the public sector, for which a compelling case exists in the United States, would be a strong argument for focusing on public investment. But that case for public investment is different from the one made simply by ruling out private investment as a potential outlet for funds generated by additional government borrowing.

The possibility of government-funded private investment does raise additional issues, as it did in the 1990s when there was a serious policy discussion of whether the U.S. Social Security trust fund should be invested in private securities. Perhaps the most concerning, and the source of much opposition at the time, is whether this investment, particularly if undertaken on a large scale, could result in serious government interference in the private sector, going well beyond the government's current involvement through tax and regulatory policies.

Whether sufficient safeguards could be provided to make this new financial intermediation channel feasible deserves further thought, given the potential drawbacks of other uses of funds that would be raised with the purpose of making more safe assets available to investors.

V. Fiscal and Monetary Policies: Distinction and Coordination

The borderline between monetary and fiscal policy has never been as precise as textbooks suggest. Monetary policy as traditionally practiced (through open market operations rather than the textbook helicopter injections) generates government revenue directly through seigniorage and indirectly through inflation-induced erosion in the value of nominal government liabilities, which can be a particularly important policy tool in case of “financial repression” that keeps nominal interest rates low (Reinhart and Sbrancia 2015). Fiscal policy affects inflation and the price level, the main purview of monetary policy, in a very fundamental manner if one subscribes to the fiscal theory of the price level (e.g., Woodford 1995), but also under more standard modeling assumptions.

However, recent expansions in the scope of central bank actions, spurred first by the global financial crisis and then by the constraints on traditional monetary policy imposed by the ZLB constraint, have further blurred the line. Some critics (e.g., Goodfriend 2011, Sinn 2014) have suggested that central banks have moved well beyond the acceptable division of responsibilities between monetary and fiscal authorities, especially by expanding the class of assets they have purchased to include those of lower quality and higher risk, while at the same time not making a full adjustment for such risk. In a mechanical sense, at the very least, one can view these practices as constituting fiscal policy. For example, in the United States, the Fed’s purchase of non-governmental assets instead of Treasury bills could be replicated through a fiscal policy operation by having the U.S. government issue Treasury bills in order to buy the non-governmental assets.

As a practical matter, political limits on the implementation of effective fiscal policy broaden the scope for monetary policy, whether this occurs during a financial crisis when support for private credit markets is quickly needed, or essentially at any time when a currency union with no central fiscal authority seeks to support failing economies. On the other hand, limits on the effectiveness of monetary policy, in particular when a country faces the ZLB, invite the more active use of fiscal policy.

Theory and DSGE model simulations (e.g., Christiano et al. 2011, Eggertsson 2010, and Woodford 2011) suggest that fiscal policy multipliers can be much larger when the ZLB is binding. But most of the empirical analysis finding higher fiscal multipliers in recession comes from data samples from periods when the ZLB did not apply, or applied very little, during recessionary periods.

There is some evidence from Japan, essentially the only country that has faced the ZLB for potentially a long enough period for time series analysis, that fiscal policy multipliers are much larger when the ZLB applies than when it does not, and at least some argument that this difference is not simply attributable to the ZLB applying during recessions (Miyamoto et al. 2017). However, these conclusions are tentative, and without more data and empirical analysis, we cannot conclude as yet that fiscal multipliers are bigger when the ZLB applies, holding constant the state of the business cycle. At the same time, we lack a single, generally accepted theory for why fiscal multipliers are larger in recessions than expansions, when the ZLB does not apply. Coalescing around such a theory would be useful not only in understanding the existing evidence but also in determining what happens to the predicted effects of fiscal policy when the ZLB applies.

VI. Conclusions

Recent events and research have changed our perspectives of fiscal policy. These include a largely negative experience with fiscal rules, the growing challenge of fiscal sustainability in economies with aging populations, a declining excitement based on empirical evidence about the possibility of expansionary fiscal contractions, our experience in dealing with the global financial crisis, and a prolonged period of very low government interest rates.

Our experience, along with contributions to theory and evidence, leave us with many challenges and areas where additional research would be useful. Among them are how to develop a fiscal framework that facilitates the use of fiscal policy for stabilization while at the same time preserving a credible commitment to fiscal sustainability, and how to make attempts at fiscal stabilization more timely and effective, to lessen some of the recent imperative to expand the scope of monetary policy.

These are challenging tasks, and governments must face them in an adverse environment in which increasing inequality within countries pushes toward greater government action through spending and redistribution, and yet while increasing mobility of companies and capital has led to intensified tax competition, particularly with respect to corporate taxation, and downward pressure on tax rates and revenues. Although a discussion would go beyond the scope of this paper, it seems evident that facing these tasks in this environment will require reform of the tax structures on which governments rely, and consideration of the extent to which the path to tax reform and more stable tax systems is through international cooperation or national initiatives.

References

- Abel, Andrew B., N. Gregory Mankiw, Lawrence H. Summers, and Richard J. Zeckhauser. 1989. "Assessing Dynamic Efficiency: Theory and Evidence," *Review of Economic Studies* 56(1), January, pp. 1-19.
- Alesina, Alberto, Carlo Favero, and Francesco Giavazzi. 2015. "The Output Effect of Fiscal Consolidation Plans," *Journal of International Economics* 96(S1), July, pp. S19-S42.
- Auerbach, Alan J. 2003. "Is There a Role for Discretionary Fiscal Policy?" in Federal Reserve Bank of Kansas City, *Rethinking Stabilization Policy*, pp. 109-150.
- Auerbach, Alan J. 2008. "Federal Budget Rules: The U.S. Experience," *Swedish Economic Policy Review* 15, pp. 57-82.
- Auerbach, Alan J. 2009. "Long-Term Objectives for Government Debt," *FinanzArchiv* 65(4), December, pp. 472-501.
- Auerbach, Alan J. 2011. "Fiscal Institutions for a Currency Union," presented at a conference on Fiscal and Monetary Policy Challenges in the Short and Long Run, sponsored by the Deutsche Bundesbank and the Banque de France, Hamburg, May 19-20.
- Auerbach, Alan J. 2014. "Fiscal Uncertainty and How to Deal with It," Hutchins Center Working Paper #6, Brookings Institution, December 15.
- Auerbach, Alan J., and William G. Gale. 2009. "The Economic Crisis and the Fiscal Crisis: 2009 and Beyond. An Update," *Tax Notes* 125(1), October 5, pp. 101-130.
- Auerbach, Alan J., Jagadeesh Gokhale, and Laurence J. Kotlikoff. 1991. "Generational Accounts: A Meaningful Alternative to Deficit Accounting," in D. Bradford, ed., *Tax Policy and the Economy* 5, pp. 55-110.

- Auerbach, Alan J., and Yuriy Gorodnichenko. 2012. "Measuring the Output Responses to Fiscal Policy," *American Economic Journal: Economic Policy* 4(2), May, pp. 1-27.
- Auerbach, Alan J., and Yuriy Gorodnichenko. 2013. "Fiscal Multipliers in Recession and Expansion," in A. Alesina and F. Giavazzi, eds., *Fiscal Policy after the Financial Crisis*, Chicago: University of Chicago Press, pp. 63-98.
- Auerbach, Alan J., and Yuriy Gorodnichenko. 2017. "Fiscal Stimulus and Fiscal Sustainability," in Federal Reserve Bank of Kansas City, *Fostering a Dynamic Global Economy*, forthcoming.
- Ball, Laurence M., Douglas W. Elmendorf, and N. Gregory Mankiw. 1998. "The Deficit Gamble," *Journal of Money, Credit, and Banking* 30(4), November, pp. 699-720.
- Blanchard, Olivier J., and Daniel Leigh. 2013. "Growth Forecast Errors and Fiscal Multipliers," *American Economic Review* 103(3), May, pp. 117-120.
- Blanchard, Olivier J., and Roberto Perotti. 2002. "An Empirical Characterization of the Dynamic Effects of Changes in Government Spending and Taxes on Output," *Quarterly Journal of Economics* 117(4), November, pp. 1329-68.
- Board of Trustees, Federal Old-Age and Survivors Insurance and Disability Insurance Trust Funds. 2017. *Annual Report*, Washington, DC
- Board of Trustees, Federal Hospital Insurance and Federal Supplementary Medical Insurance Trust Funds. 2017. *Annual Report*, Washington, DC.
- Caballero, Ricardo J., Pierre-Olivier Gourinchas, and Emmanuel Farhi. 2017. "The Safe Assets Shortage Conundrum," *Journal of Economic Perspectives* 31(3), Summer, pp. 29-36.
- Chodorow-Reich, Gabriel. 2017. "Geographic Cross-Sectional Fiscal Spending Multipliers: What Have We Learned?" NBER Working Paper No. 23577, July.

Chodorow-Reich, Gabriel, Laura Feiveson, Zachary Liscow, and William Gui Woolston. 2012.

“Does State Fiscal Relief During Recessions Increase Employment? Evidence from the American Recovery and Reinvestment Act,” *American Economic Journal: Economic Policy* 4(3), August, pp. 118-145.

Christiano, Lawrence, Martin Eichenbaum, and Sergio Rebelo. 2011. “When is the Government Spending Multiplier Large?” *Journal of Political Economy* 119(1), February, pp. 78-121.

Clemens, Jeffrey, and Stephen Miran. 2012. “Fiscal Policy Multipliers on Subnational Government Spending,” *American Economic Journal: Economic Policy* 4(2), May, pp. 46-68.

Corsetti, Giancarlo, Andre Meier, and Gernot J. Müller. 2012. “What Determines Government Spending Multipliers?” *Economic Policy* 27: 521–565.

Debrun, Xavier, and Tidiane Kinda. 2014. “Strengthening Post-Crisis Fiscal Credibility: Fiscal Councils on the Rise—A New Dataset,” IMF Working Paper WP/14/58, April.

DeLong, J. Bradford, and Lawrence H. Summers. 2012. “Fiscal Policy in a Depressed Economy,” *Brookings Papers on Economic Activity*, Spring, pp. 233-297.

Dixit, Avinash K., and Robert S. Pindyck. 1994. *Investment under Uncertainty*. Princeton: Princeton University Press.

Eggertsson, Gauti. 2010. “What Fiscal Policy Is Effective at Zero Interest Rates?” In D. Acemoglu and M. Woodford, eds., *NBER Macroeconomics Annual*. Chicago: University of Chicago Press, pp. 59-112.

Eichengreen, Barry, and Jürgen Von Hagen. 1996. “Fiscal Restrictions and Monetary Union: Rationales, Repercussions, Reforms,” *Empirica* 23(1), February, pp. 3-23.

- Elmendorf, Douglas W., and Louise M. Sheiner. 2017. "Federal Budget Policy with an Aging Population and Persistently Low Interest Rates," *Journal of Economic Perspectives* 31(3), Summer, pp. 175-94.
- European Commission. 2015. *The 2015 Ageing Report: Economic and Budgetary Projections for the 28 EU Member States (2013-2060)*, March.
- European Commission. 2017. *Vade Mecum on the Stability and Growth Pact*. Institutional Paper 052, March.
- Goodfriend, Marvin. 2011. "Central Banking in the Credit Turmoil: An Assessment of Federal Reserve Practice," *Journal of Monetary Economics* 58(1), January, pp. 1-12.
- Ilzetzki, Ethan, Enrique Mendoza, and Carlos Végh. 2013. "How Big (Small?) Are Fiscal Multipliers?" *Journal of Monetary Economics* 60(2), March, pp. 239-254.
- International Monetary Fund. 2010. *World Economic Outlook*, Chapter 3 ("Will It Hurt? Macroeconomic Effects of Fiscal Consolidation"), pp. 93-124.
- Leduc, Sylvain, and Daniel J. Wilson. 2012. "Roads to Prosperity or Bridges to Nowhere: Theory and Evidence on the Impact of Public Infrastructure Investment." *NBER Macroeconomic Annual* 27, D. Acemoglu, J. Parker, and M. Woodford, eds., pp. 89-142.
- McKay, Alisdair, and Ricardo Reis. 2016. "The Role of Automatic Stabilizers in the U.S. Business Cycle," *Econometrica* 84(1), January, pp. 141-194.
- Miyamoto, Wataru, Thuy Lan Nguyen, and Dmitriy Sergeyev. 2017. "Government Spending Multipliers under the Zero Lower Bound: Evidence from Japan," Working Paper, April 14.

- Nakamura, Emi, and Jón Steinsson. 2014. "Fiscal Stimulus in a Monetary Union: Evidence from U.S. Regions," *American Economic Review* 104(3), March, pp. 753-792.
- Novy-Marx, Robert, and Joshua Rauh. 2011. "Public Pension Promises: How Big Are They and What Are They Worth?" *Journal of Finance* 66(4), August, pp. 1211-1249.
- Poterba, James M. 1994. "State Responses to Fiscal Crises: The Effects of Budgetary Institutions and Politics," *Journal of Political Economy* 102(4), August, pp. 799-821.
- Reinhart, Carmen M., and M. Belen Sbrancia. 2015. "The Liquidation of Government Debt," *Economic Policy* 30(82), April, pp. 91-333.
- Romer, Christina D., and David H. Romer. 2010. "The Macroeconomic Effects of Tax Changes: Estimates Based on a New Measure of Fiscal Shocks," *American Economic Review* 100(3), June, pp. 763-801.
- Sinn, Hans-Werner. 2014. *The Euro Trap*. Oxford: Oxford University Press.
- Transportation Research Board. 2014. *Transportation Investments in Response to Economic Downturns*. Washington: National Academies Press.
- Woodford, Michael. 1995. "Price Level Determinacy without Control of a Monetary Aggregate," *Carnegie-Rochester Conference Series on Public Policy* 43, December, pp. 1-46.
- Woodford, Michael. 2011. "Simple Analytics of the Government Expenditure Multiplier," *American Economic Journal: Macroeconomics* 3(1), pp. 1-35.