

FISCAL POLICY IN RECESSION

US FISCAL POLICY IN RECESSION: WHAT'S NEXT?

ALAN J. AUERBACH*

The US recession that began in December 2007 is likely to be the longest recession since the Great Depression. It is clearly the most severe in decades. In response, the US government has actively applied the tools of monetary and fiscal policy. On the monetary side, the Fed lowered its target for the Federal Funds rate ten times between September 2007 and December 2008, starting at 5.25 percent and finally reaching an effective minimum range of 0 to 0.25 percent. To augment this standard monetary policy tool based on the purchase of government bonds, the Fed has also engaged in purchases of a range of other financial assets on an unprecedented scale. All told, the Fed provided more than 1 trillion US dollars in financial support to banks, corporations, money market funds, and other institutions through the end of 2008, with outstanding reserves rising accordingly.

Fiscal policy, too, has been very active. In February 2008, Congress passed the “Economic Stimulus Act of 2008” containing one-time tax rebates for households and temporary accelerated depreciation for businesses, producing a one-year increase in the deficit of just over 1 percent (CBO 2008). Almost exactly one year later, under a new president and with the severity of the recession much more apparent, Congress attempted to provide additional fiscal stimulus through the “American Recovery and Reinvestment Act of 2009”, which was estimated to increase the deficit by a cumulative amount of nearly 5 percent through its first two full budget years (CBO 2009a). The 2009 legislation was not only bigger than the previous year’s, but also provided for increases in government spending, including expanded unemployment compensation and aid to state and local governments.

* University of California, Berkeley.

In this essay, I consider whether the fiscal stimulus made sense, whether it was of the right magnitude, and the special problems facing fiscal policy in the United States at the present time, given the severity of the recession, the fiscal agenda of the Obama Administration, and the long-run fiscal imbalances that the United States faces as it confronts its rapidly growing expenditures on its major old-age entitlement programs.

The 2009 stimulus package

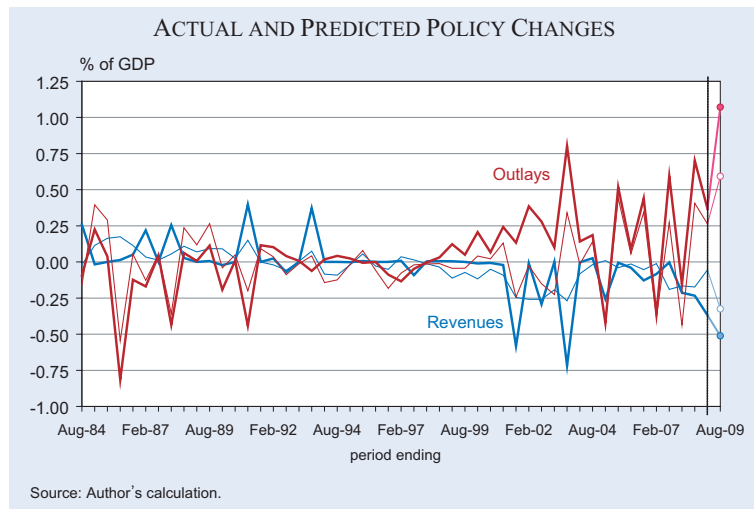
After the 2008 fiscal stimulus was introduced, there were many calls for additional fiscal actions. These calls increased as the financial market collapse accelerated in the fall of 2008, and by the time President Obama took office it was a virtual certainty that some action would occur quickly. But the size and composition of the fiscal package remained undetermined. Some argued for an even larger package than was adopted. Others expressed concern that the timing might have too much of the stimulus hit the economy after the greatest time of need and contribute to inflationary pressure, while others worried about the potential contribution to the long-run fiscal problem. Finally, there was skepticism about the ability of the likely fiscal package to stimulate the economy very much, particularly given the state of financial markets at the time and the general uncertainty about the size of fiscal multipliers.

The size of the 2009 fiscal stimulus

One way to determine whether the size of the 2009 fiscal stimulus made sense is to compare it with recent US practice. This is difficult given the unusual current circumstances, but it is nevertheless interesting to consider whether policy today is in line with fiscal policy responses in other episodes. Figure 1 provides a simple overview of the evolution of US fiscal policy in recent decades. The series in the figure are the actual and predicted values of legislated changes in federal revenues



Figure 1



and non-interest expenditures as a percentage of potential GDP at roughly semiannual intervals spanning the period from summer 2004 (represented as August 1984 or Aug-84) through winter 2009 (Feb-09). The series for actual revenue and expenditure changes are compiled from Congressional Budget Office (CBO) publications, and are weighted averages of the legislated changes during the period covering the fiscal year in which the changes were enacted plus the following four fiscal years. The predicted series (represented as thin lines) come from simple linear models based on the same specification I have used in previous papers, most recently Auerbach (2009), explaining the actual series with the beginning of period average (using the same weights) CBO forecast of the current and subsequent four years' projected budget surpluses and the most recent quarter's output gap.¹ To the right of the dotted vertical line in the figure are out-of-sample predicted values of revenue and expenditure changes for summer 2009 (Aug-09), the current period as of this writing, for which the explanatory variables are already available. The actual values of the dependent variables for this period are not yet available because further legislation is still possible before the end of the period, but we do have the values through the passage of the recent fiscal stimulus package, as computed by CBO. These are the values

¹ Auerbach (2002) provides a detailed discussion of the variables used in the estimation.

shown in the figure for the current period.

The estimates themselves, given in Table 1, show that both revenue and expenditure policies have been countercyclical and budget-stabilizing, with larger responses on the expenditure side. But, as the figure shows, policy volatility has varied over time, with a very quiet period during the mid-1990s sandwiched in between more active periods before and after.

As discussed in Auerbach (2009), the general consensus in support of a large fiscal stimulus in 2009 represents a marked change from the recessions of 1982 and 1990, when no fiscal stimulus was adopted and indeed contractionary fiscal measures were undertaken in response to growing budget deficits. But the move toward more active countercyclical fiscal policy predates the policy discussions of the past few months. Late in the 2001 recession, for example, Congress considered and eventually passed legislation introducing "bonus depreciation" investment incentives, the same bonus depreciation that reappeared in the 2008, along with income tax rebates, and that were extended by the 2009 legislation. However, even based on the full sample period, the estimates in Table 1 predict a large fiscal intervention during the current period – larger increases in spending and tax cuts than are predicted for any date during the estimation period. Still, as seen in Figure 1, the predicted changes in revenues and expenditures are not as large (64 percent and 55 percent, respectively) as the ones actually adopted.

Table 1
Estimated policy functions (August 1984 – February 2009)

Dependent variable	Revenues	Expenditures
Constant	- 0.002 (0.0004)	0.003 (0.001)
Output gap (- 1)	- 0.091 (0.024)	0.158 (0.035)
Projected surpluses (- 1)	- 0.103 (0.021)	0.168 (0.031)
R ²	0.315	0.361
Observations	50	50

Note: Standard errors in parentheses.

Source: Author's calculation.

Was the stimulus large enough?

Given the severity of the current recession, was this most recent fiscal intervention enough? Estimates of the fiscal package's macroeconomic effects are subject to considerable uncertainty. One careful analysis (CBO 2009b) that uses a range of assumed multipliers for the different components of the legislation and takes account of the timing of the spending and revenue provisions yields the predicted range of effects on GDP shown in Figure 2. As can be seen from the figure, the forecast of the GDP gap as of the end of 2009, without any fiscal intervention, was over 7 percent of potential GDP. The estimated impact of the legislation was highest in this first year, between 1.4 percent and 3.8 percent of potential GDP, with effects nearly as large in 2010 and then much smaller thereafter.

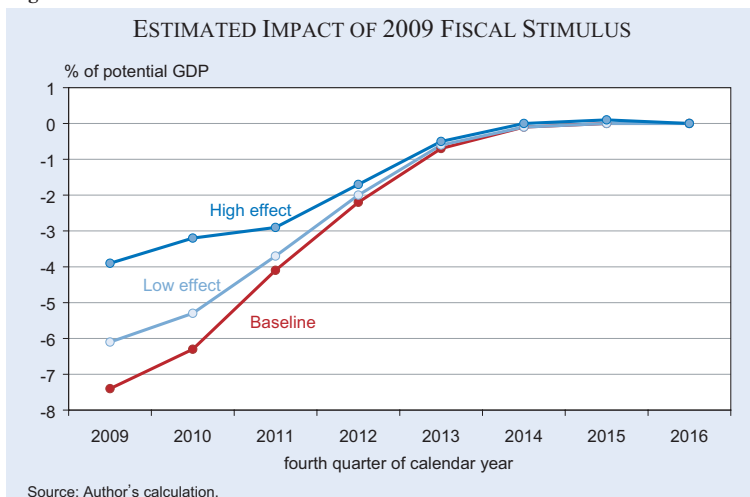
Based on these estimates, at least, there is little cause for concern that the stimulus package was too big, in terms of leading to excess aggregate demand. And, though there was concern that much of the impact of the fiscal stimulus would be delayed due to the time required to implement and respond to the various provisions, the estimates are for 40–43 percent, 76–77 percent, and 90 percent of the economic impact to occur by the ends of 2009, 2010, and 2011, respectively. These percentages are accelerated relative to the percentages (as a fraction of GDP) of the tax cuts and spending increases occurring in the different fiscal years (which end after the third quarter of the calendar year). These shares for 2009, 2010, and 2011 are, respectively, 24 percent, 73 percent, and 88 percent of GDP. Thus, ignoring differences in multipliers over time, the assumed response is even more rapid than if each fiscal

year's tax cuts and spending increases had all of their effects by the end of the corresponding calendar year.

Even though these estimates provide for a large range of multipliers between the “high” and “low” effects, there are estimates in the literature that fall outside these bands. For example, the multiplier range assumed for government purchases is between 1 and 2.5, meaning at worst no net crowding out of other economic activity. Yet estimates using different methods, including structural vector autoregression (SVAR) models (Blanchard and Perotti 2002) and alternative structural models (Taylor 2009), imply multipliers less than 1. While larger multipliers may make sense in an environment in which interest rates are unlikely to rise in response to the fiscal activity, there are also reasons why private activity might respond less now than in other periods, given the current dislocations in credit markets. A similar uncertainty exists on the tax side, where the assumed range of multiplier effects of temporary tax rebates for low- and middle-income individuals (0.5, 1.7) seems large, given the apparent weakness of the response to the rebate that was implemented in 2008 (Taylor 2009). On the other hand, this assumed range is in line with those from the SVAR literature.

In summary, there seems little chance that the fiscal stimulus legislation adopted in February 2009 will prove to have been excessive, given the severity of the recession. Its effectiveness is another issue, as the debate about the size of multipliers indicates. There is more one can say on this issue by considering the components of the legislation in greater detail.

Figure 2



Was the stimulus well-designed?

The 2009 fiscal stimulus package consisted of both tax cuts and spending increases, although spending accounted for a much larger share of the total. Excluding associated interest, the estimated cost of tax cuts (calculated as a simple sum over 11 years) was 76 billion US dollars, while the estimated cost of expenditure increases (computed in the same manner) was 456 billion US dollars. The pri-

many tax-cut provisions, as mentioned above, were a temporary tax rebate to households and a temporary extension of accelerated depreciation deductions for business investment. The spending provisions covered a range of activities including aid to the states, health and unemployment benefits, and infrastructure spending.

These provisions all have precedents in past countercyclical policy practice. Indeed, although large in magnitude, the 2009 legislation is quite conventional in terms of its content. This is somewhat unfortunate, in that one might have hoped for some innovation in the design of provisions, informed by economic theory and evidence. For example, the impact of tax rebates is undercut by their temporary nature for households that are neither myopic nor liquidity constrained. Given that a small consumption response would be anticipated for such groups, a much more targeted tax rebate could have provided a much more efficient use of funds. Also, while being temporary undercuts the income effect on consumption, it would *increase* the substitution effect. Thus, had the tax rebates been provided in a form that offered temporary price reductions, as for example through a rebate for consumption taxes, especially on durable goods,² the short-lived nature of the provision would have worked in favor of increasing the demand response of taxpayers. The lack of such innovation is all the more surprising because it would have paralleled the approach to business taxation of providing investment incentives on a temporary basis, and because a similar provision had already been instituted by the United Kingdom, which temporarily lowered its VAT rate from 17.5 percent to 15 percent at the end of December 2008.

As to the business tax provisions, their temporary nature would, as just discussed, tend to strengthen the investment response. However, another element of the current economic environment works strongly against a strong investment response. Bonus depreciation increases the incentive to invest by increasing the present value of depreciation deductions. It might have an advantage over other investment incentives that do not affect the timing of tax payments if private discount rates substantially exceed the government's discount rate, as might be especially true at the moment. But the key to any

² There are no broad-based consumption taxes at the US federal level, but most states have broad-based sales taxes that could be reduced either through federal transfers to the states or federal rebates to individuals for state taxes paid.

scheme of accelerated depreciation is the acceleration, since there is no net increase in the nominal deductions taken over time. Thus, for firms without taxable income that may become taxable only years later, bonus depreciation is of little value. This is likely to be a very important issue now, given the sharp and as yet not fully understood surge in losses observed earlier in this decade (Altshuler et al. 2009) and the huge drop in corporate tax revenues observed in recent months.

One approach to dealing with this situation is to adapt corporate tax rules to make them more symmetric with respect to the treatment of tax losses, such as through refundability, which also would make the corporate tax function better as an automatic stabilizer. A partial solution to this problem would be to extend the number of years that a loss can be "carried back", that is, offset against income taxed in a prior year to produce a rebate. The current US carry-back period is two years, and the original stimulus proposal was to extend this period temporarily to five years. This extension was ultimately pared back in the final legislation so that it applied only to very small firms, thus weakening the likely investment response to the legislation.

Two criticisms of the extended carry-back period were that (1) it would still leave some firms with net losses and therefore unable to benefit from the bonus depreciation scheme; and (2) that it would provide large windfalls to firms in the form of tax refunds, regardless of the extent to which they undertook new investment. Both of these criticisms could have been addressed through an alternative mechanism of allowing the transfer of the investment tax benefits among firms, so that firms with losses could effectively sell their tax benefits to taxable firms. One such scheme, based on the formal structure of leasing, was actually attempted by the United States in 1981 in conjunction with an earlier scheme of accelerated depreciation. This scheme had problems of its own,³ but no further mechanism of addressing the issue has been attempted in the many years since.

As to the spending provisions contained in the 2009 legislation, a main concern was with their timing. Although the word of the day was that funded projects should be "shovel ready", the pace of infrastructure spending was projected to lag the appro-

³ See Warren and Auerbach (1982) for further discussion of this scheme, known as "safe-harbor leasing".

priation of funds considerably (CBO 2009b), and the rush among the states to identify suitable projects also raised concerns about the quality of the projects to be funded. This experience has led to suggestions that a more orderly system of flexible project funding be established, under which states maintain an ordered list of desired projects that can then be drawn upon as funding becomes available. But this practice would presume a more systematic practice of countercyclical fiscal policy than has existed or is likely to exist in the future in the United States.

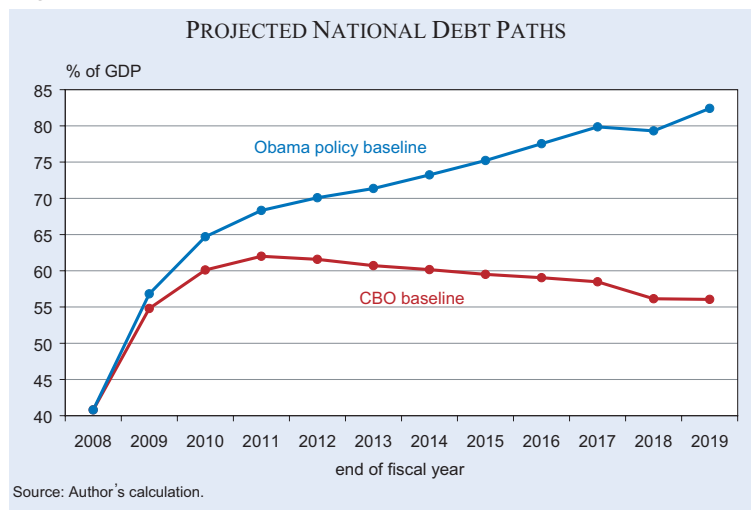
In summary, the 2009 US fiscal stimulus package was large in scale, but its approach was quite conventional and could have been improved through a variety of fairly straightforward changes.

The short-run stimulus and the long-run fiscal imbalance

All of the recent countercyclical activity occurs in the presence of a US federal budget deficit currently projected to be 11.9 percent of GDP for fiscal year 2009 (CBO 2009c), a share unprecedented except during World War II. Little of this is due to the stimulus package directly, and it is customary to ignore issues of long-term fiscal balance when confronting the need for countercyclical policy. Not all governments have the luxury of ignoring such long-run considerations even temporarily, if capital markets reveal skepticism about their abilities to service accumulating liabilities, but this has not been an issue in the United States, at least in the past. The current situation, however, may bring the United States into a new era with respect to its ability to ignore long-run fiscal considerations, given not just the current-year deficit, but also the projected path of national debt and the looming unfunded liabilities for old-age entitlement programs.

Figure 3 plots two projected paths for the US federal debt-GDP ratio, both taken from CBO (2009c). The lower path is for the CBO baseline of current policy, which includes many unrealistic assumptions, such as that the 2001 and 2003 tax

Figure 3



cuts adopted during the Bush Administration will fully expire at the end of 2010, as called for under current law, and that discretionary spending will stay nearly constant in nominal terms. The higher path is for the budget as proposed this year by President Obama, incorporating not only a more realistic policy with respect to tax cuts and discretionary spending but also some new tax and spending initiatives. This higher path is probably the more relevant of the two, and it projects a sobering rise in the debt-GDP ratio, which would reach 82 percent by the end of 2019, representing a doubling of the debt-GDP ratio in the 11-year period shown in the figure.

While the United States experienced even higher debt-GDP ratios at the end of World War II, the situation now is quite different. First, the massive debt accumulation of the 1940s stopped with the war's end and was followed immediately by a rapid decline in the debt-GDP ratio. There is no similar expectation now for the years after 2019. Further, the spending-revenue imbalance is even more considerable as one looks further into the future, given the projected growth of the major US entitlement programs, Medicare (health care for the elderly), Medicaid (health care for the poor, including many elderly), and Social Security (old age and disability pensions).

Using this year's long-term government forecasts for Medicare and Social Security and extending CBO's projections for most other items beyond 2019 by assuming constant shares relative to GDP, Auerbach and Gale (2009) estimate an infinite-horizon fiscal gap – the share of GDP by which the primary surplus

needs to be increased on a permanent basis for policy to satisfy the government's intertemporal budget constraint – of 6.25 percent under the CBO baseline projections and 8.71 percent of GDP under the Obama policy projections.

Given how stable the federal revenue share of GDP has been for the United States over many decades – it ranged between 16.3 percent and 20.9 percent of GDP during every year of the forty-year period 1969–2008 and is projected to fall well within this range for each year between 2011 and 2019 under both of the projections in Figure 3 – it is hard to imagine how tax policy can suffice to close this fiscal gap, and spending cuts are likely to prove equally difficult to accomplish. How the United States will solve this fiscal imbalance is not at all clear, and the recent rise in the probability of default implied by the credit default swap market (Auerbach and Gale 2009), while probably due primarily to the financial market disruptions of recent months, may also be a sign of more durable unrest in the market for US debt. While the long-term imbalance has been seen as a potential problem for some time, the date at which it will become an immediate problem has likely been brought much closer to the present by the recession.

Conclusions

The recent recession has been a severe one in the United States, and it prompted a strong fiscal policy response that exceeded in magnitude what would have been predicted from recent history. This response is not surprising, given the increasing tendency to adopt countercyclical policy and the special circumstances for monetary policy. Whether this response was large enough is unclear, particularly given the uncertainty about the policy's multiplier effects. These effects could have been enhanced had policy relied less on conventional approaches. But the legacy of the recession, and the policy responses to it, is an even more immediate need to deal with a long-term fiscal balance that defies straightforward policy solution.

References

- Altshuler, R., A. J. Auerbach, M. Cooper and M. Knittel (2009), "Understanding U.S. Corporate Tax Losses", in: Brown, J. and J. Poterba (eds.), *Tax Policy and the Economy* 23, forthcoming.
- Auerbach, A. J. (2002), *Is There a Role for Discretionary Fiscal Policy?*, NBER Working Paper 9306.
- Auerbach, A. J. (2009), "Implementing the New Fiscal Policy Activism," *American Economic Review*, forthcoming.
- Auerbach, A. J. and W. G. Gale (2009), *The Economic Crisis and the Fiscal Crisis: 2009 and Beyond*, mimeo.
- Blanchard, O. and R. Perotti (2002), "An Empirical Characterization of the Dynamic Effects of Changes in Government Spending and Taxes on Output", *Quarterly Journal of Economics* 117, 1329–1368.
- Congressional Budget Office (CBO 2008), *Cost Estimate: H.R. 5140, Economic Stimulus Act of 2008*, 11 February.
- Congressional Budget Office (CBO 2009a), *Cost Estimate: H.R. 1, American Recovery and Reinvestment Act of 2009*, 13 February.
- Congressional Budget Office (CBO 2009b), *Estimated Macroeconomic Impacts of the American Recovery and Reinvestment Act of 2009*, 2 March.
- Congressional Budget Office (2009c), *A Preliminary Analysis of the President's Budget and an Update of CBO's Budget and Economic Outlook*, March.
- Taylor, J. B. (2009), "The Lack of an Empirical Rationale for a Revival of Discretionary Fiscal Policy", *American Economic Review* 99, 550–555.
- Warren, A. C. Jr. and A. J. Auerbach (1982), "Transferability of Tax Losses and the Fiction of Safe-Harbor Leasing", *Harvard Law Review* 95, 1752–1786.