

Commentary: Is There a Role for Discretionary Fiscal Policy?

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It's a great honor to be part of this prestigious conference. I am pleased to serve as a discussant for the paper by Alan Auerbach, who is my former colleague and respected friend. I would like to thank the Research Department of the Federal Reserve Bank of Kansas City for the occasion.

Auerbach's paper is a comprehensive review of U.S. fiscal policy of recent decades, covering four major topics: (1) whether the fiscal policy has been countercyclical, (2) transmission channels through which fiscal policy could affect the economy, (3) a quantitative evaluation of the effect of fiscal policy, and (4) the size of implicit liability of the OASDI system. I really liked Auerbach's style of interweaving economic analysis with references to specific legislations.

In my comments on the paper, I will focus on the first three topics, because the fourth topic, despite its obvious importance in policy discourse, seems only tangentially related to the rest of the paper. I will then present some Japanese evidence corroborating the main points of the paper.

Has U.S. fiscal policy been countercyclical?

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To address the first topic, Auerbach looks at various fiscal variables, including tax revenue, spending, and their difference (namely, the

budget surplus). For the change in the fiscal variable in question, he identifies two components and sees how they are related to the GDP gap. Those two components are the “discretionary” component and “non-discretionary” component (namely, the so-called automatic stabilizer). He entertains several alternative definitions of those two components, including the cyclical adjustment used to calculate the full-employment surplus. Auerbach’s preferred definition, I take, is to define the discretionary component as the change due to legislative action when macroeconomic variables are held constant, and the non-discretionary component as the change due to macroeconomic sources with the spending rule and tax laws held constant. I agree that this definition should be preferred for two reasons. First, unlike the cyclically-adjusted measures, it obviously does not require the notion of the output gap. Second, as I will argue below, it may be useful in econometrically identifying the output effect of fiscal policy.

Here is my own formal illustration of this definition of discretionary and non-discretionary policies. Consider, for example, the tax revenue for period t , R_t . It can be written as a known function, f_t , of aggregate income Y_t , and a vector of parameters describing income distribution Θ_t :

$$R_t = f_t(Y_t, \Theta_t). \quad (1)$$

The tax law that is in place for period t determines the function f_t . (This relationship can be derived by first writing down tax payment as a function of income for each individual and then aggregating over individuals.) The change in revenue from $t - 1$ to t , $R_t - R_{t-1}$, can be decomposed into three parts:

$$\begin{aligned} R_t - R_{t-1} &= f_t(Y_t, \Theta_t) - f_{t-1}(Y_{t-1}, \Theta_{t-1}) \\ &= [f_t(Y_{t-1}, \Theta_{t-1}) - f_{t-1}(Y_{t-1}, \Theta_{t-1})] \\ &\quad + [f_t(Y_t, \Theta_t) - f_t(Y_{t-1}, \Theta_t)] \\ &\quad + [f_t(Y_{t-1}, \Theta_t) - f_t(Y_{t-1}, \Theta_{t-1})]. \end{aligned} \quad (2)$$

The first component, $f_t(Y_{t-1}, \Theta_{t-1}) - f_{t-1}(Y_{t-1}, \Theta_{t-1})$, is the change due to a tax law change taking place in period t holding (Y, Θ) constant. It is, therefore, the discretionary component. The second component, the change due solely to a change in aggregate income, is the

automatic stabilizer or the non-discretionary component. According to the paper, the Congressional Budget Office (CBO) publishes this breakdown (or something close to it) for federal tax revenue and spending. For individual tax payments, Auerbach provides his own estimate of the second component and also calculates the sensitivity of this component to aggregate income.

The empirical evidence included in tables 1-3 and charts 1 and 2 of the paper is clear: No matter which definition of the discretionary and non-discretionary components one uses, the U.S. fiscal policy has been countercyclical. More specifically, the regression analysis reported in tables 1-3 shows that the discretionary component of the fiscal variable in question (tax revenue, spending, and the surplus) is systematically related to the lagged value of GDP gap in a countercyclical way (so, for example, tax revenue is positively related to the GDP gap of the previous period), while charts 1 and 2 show the sensitivity of the non-discretionary components of the surplus and taxes to aggregate income. I think that Auerbach's decision not to focus on a single measure of fiscal policy (such as the budget surplus) is a wise one, because if there is a single measure summarizing the stance of fiscal policy, it depends on the model. For example, in the Ricardian world, where timing of taxes doesn't matter, the deficit is irrelevant.

The paper's finding that discretionary policy is countercyclical is somewhat surprising, given the general perception that the United States no longer practices Keynesian stabilization fiscal policy. For example, Romer and Romer (1994) conclude that the response of discretionary fiscal policy is small, if any. Alan's finding is largely consistent with this perception because his sample period includes the Clinton years and the beginning of the current Bush Administration, the period when the sensitivity to the output gap increased markedly (see, e.g., column 5 of table 1).

Transmission channels of fiscal policy

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The second part of Auerbach's paper examines channels through which fiscal policy could affect output, besides its direct effect on aggregate demand through government spending. Those indirect channels

include consumption, investment, and aggregate supply. Auerbach provides a brief survey of the literature on how consumption responds to the timing of taxes and a quite extensive discussion about corporate taxes and investment, the latter drawing on the wealth of research done by Auerbach and his collaborators.

I find it curious that the discussion of consumption occurs at two places in the paper, one under the unlikely heading of automatic stabilizers and the other in the context of the long-run budget constraint. The issues discussed at those two places are essentially the same: whether the timing of taxes matters for consumption. What I take away from the paper's discussion for consumption is that there is little agreement about the effect of a debt-financed tax cut on aggregate consumption.

In passing, it may be worth pointing out that the paper has no discussion of the output effect of government expenditure. Besides its direct impact on aggregate demand, government expenditure can have indirect impacts on output. If private consumption and government consumption are substitutes, as is the case with the school lunch program, an increase in government spending will be at least partially offset by a decline in private consumption. Also, government spending will influence aggregate supply if government capital is an argument in the aggregate production function.

Quantitative evaluation of the effect of fiscal policy **3**

Taking into account all those channels of fiscal policy, what is the output effect of fiscal policy? I thought the third part of Auerbach's paper, with the section heading of measuring fiscal policy's quantitative effects, would be the centerpiece of the paper. But the paper's discussion is very brief, not much longer than a page. The only credible evidence Auerbach cites is Blanchard and Perotti (1999), which studies the output effect of government spending and taxes using the structural vector autoregression (SVAR) technique.

It is difficult to estimate the output effect of fiscal policy, and the reason is well known. As the first part of the paper amply demon-

strates, fiscal variables, being systematically related to current output and other macroeconomic variables, are endogenous variables. This systematic response is the *policy rule*. For later reference, it is useful to state this point formally. Let x_t be the value in period t of the fiscal policy variable in question, Ω_t be the information set to which the fiscal authority responds according to the policy rule $g(\Omega_t)$, and ε_t be the non-systematic component of x_t (usually referred to as the *policy shock* or *policy innovation*). Thus, we can write:

$$x_t = g(\Omega_t) + \varepsilon_t. \quad (3)$$

The government's information set Ω_t includes the current and lagged value of output. Because the government responds to output according to the policy rule, the existence of the correlation between output and x_t (or more generally, the significance of the x_t coefficient in the regression of output on the current and lagged value of x and lagged output) cannot be taken as evidence in favor of the output effect of fiscal policy. A very forceful exposition of this point can be found in Cochrane (1994).

Recent literature provides two approaches to resolving this difficulty. The first is the "narrative approach" of Ramey and Shapiro (1997). It examines the response of output to the three large increases in military spending (taking place in 1950, 1965, and 1980) that are arguably exogenous. The second is the SVAR approach. It identifies the policy shock by estimating the policy rule $g(\cdot)$, under a plausible set of assumptions. If output responds to the policy shock ε_t , we can conclude that the policy variable x_t has an output effect because ε_t is part of x_t . The available evidence is that fiscal policy affects GDP. Recall that in any SVAR, a one-unit increase in the innovation for the policy variable in question brings about subsequent changes in all variables of the system, including the policy variables. Blanchard and Perotti (1999) estimate that the tax multiplier (defined as the maximum value of the subsequent GDP changes triggered by a (negative) one-dollar tax shock) is about 0.8 in one specification (see their table 3) and the spending multiplier similarly defined is about 1.3 (see their table 4).

It should be noted that the distinction between discretionary policy and the automatic stabilizer, although of paramount importance to legislatures, is not useful in addressing the output effect of fiscal policy. By definition, the nondiscretionary component (the automatic stabilizer) of the fiscal variable in question is systematically related to output and other macro variables. So, it is part of $g(\Omega_t)$. The discretionary component, on the other hand, includes the policy innovation as well as the systematic component. Put differently, $g(\Omega_t)$ consists of the automatic stabilizer and the systematic component of discretionary policy. What matters for economic analysis is the decomposition of x_t between $g(\Omega_t)$ and ε_t .

It is my conjecture that the particular definition of discretionary policy as the change in the fiscal variable due to a legislative action, as formalized in equation 2, is useful in the identification of the policy shock. Assume, quite realistically, that the legislation takes one period so that discretionary policy cannot respond to current economic conditions. Then the error term in the regression of discretionary policy on *lagged* macroeconomic variables (shown in table 2 of the paper) is the policy shock.

A separate question, which is more closely related to the title of the paper, is whether fiscal policy has been stabilizing. Would GDP have been more volatile if fiscal variables were less sensitive to GDP? This question is about the mapping from the policy rule to the variance of output. Again, the discretionary/nondiscretionary distinction is not useful.

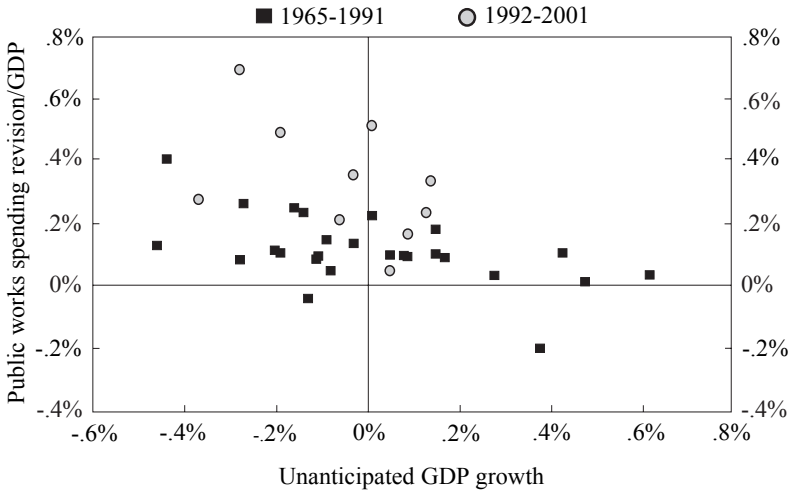
Evidence from Japan

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Having flown all the way from the other side of the world, I feel compelled to bring some news from the originating country. I now turn to some evidence from Japan that corroborates the main points of Auerbach's paper.

Chart 1 here is meant to address the issue dealt with in table 3 of Auerbach's paper. In that table, Auerbach examines whether discretionary spending (in the sense of non-entitlement spending in the fed-

Chart 1
How Pork Responds to GDP News



eral budget) responds to the output gap. Almost every year since 1965 in Japan, the initial central government budget approved by the Diet at the beginning of the fiscal year (which is April) was revised in the fall, to respond to unforeseen economic conditions. A good measure of those unforeseen developments is the government’s GDP forecast error. An official forecast of GDP growth from fiscal year $t-1$ (April of year $t-1$ through March of year t) to fiscal year t is published by the government in January of year t . Actual GDP growth from fiscal year $t-1$ to t is not known until several months after the end of fiscal year t (March of year $t+1$). Thus, the unexpected growth from fiscal year $t-2$ to $t-1$ represents news about GDP that becomes available during fiscal year t . Public works expenditure in the central government budget is the common tool for fiscal stimulus by the Japanese government. (Incidentally, as we all know, much of this is pork-barrel spending.) Almost every year, this budget item was increased in the revised budget in the fall. This is the important component of the “stimulus package” obligatory put together by the Japanese government over the last couple of decades, often under the United States’ pressure.

Chart 2
Primary Surplus against Debt Outstanding,
Central Government

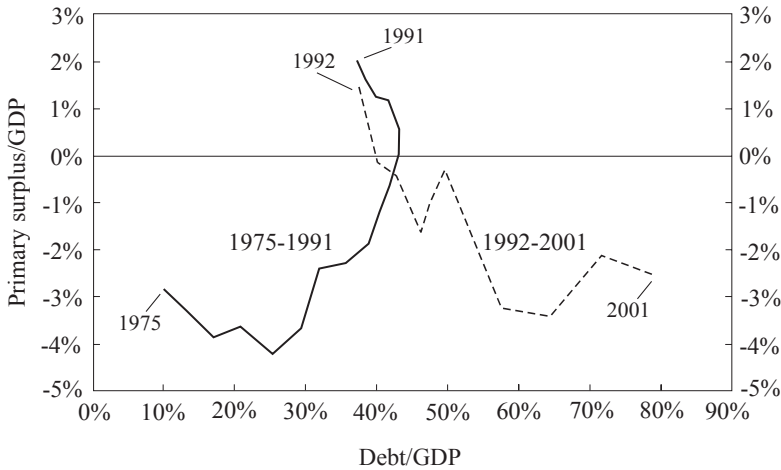


Chart 1 plots the GDP fraction of this revision of public works budget for fiscal year t against the unanticipated GDP growth for fiscal year $t-1$. (The idea of relating budget revisions to unanticipated GDP growth can be found in Asako, Ito, and Sakamoto (1991)). Consistent with the evidence of Auerbach's table 3, there is an inverse relation between the two, meaning that discretionary spending in Japan is countercyclical. Contrary to Auerbach's table 3, the inverse relationship is statistically significant. The observations for the 1990s in chart 1 shows that the cyclical sensitivity increased in the 1990s.

Auerbach's table 1 reports results from the regression of the change in full employment federal budget surplus on the lagged GDP gap and the lagged budget surplus. As Auerbach notes, the negative regression coefficient on the lagged budget surplus means that increased national debt leads to higher subsequent budget surpluses. As shown by Bohn (1998), the positive relationship between the (primary) surplus-to-output ratio and the ratio of the stock of national debt to output ensures

the long-run government budget constraint to be satisfied. Chart 2 here checks whether there is such a positive relationship for the Japanese central government budget. The budgetary deterioration in the 1970s was followed by the rapid improvement in the 1980s. The positive relationship established in the 1980s, however, broke down in the 1990s with a sharp deterioration of the budget and the resulting ballooning of the national debt. To my surprise, the yield on the Japanese government bond remained quite low, at nearly 1 percent during this episode of rapid budgetary deterioration. Perhaps the market participants, with the memory of the 1980s still fresh in their minds, believe that a similarly decisive consolidation is just around the corner.

There are several SVAR studies on the effect of monetary policy in Japan, but the only SVAR study of Japanese fiscal policy I am aware of is Kuttner and Posen (2001). They apply the same methodology used in Blanchard and Perotti (1999) to the Japanese economy and find that the SVAR tax multiplier is much larger for Japan than that estimated for the United States by Blanchard and Perotti. The estimated tax multiplier is about 1.7 (with a cumulative effect of about 4.9), while the spending multiplier is about 1.1 (with a cumulative effect of 3.5). Based on this evidence, Kuttner and Posen prescribe a large tax cut as a cure for the prolonged Japanese recession.

Conclusion

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Auerbach's paper provides a wealth of information useful for thinking about the output effect of fiscal policy. The title of his paper, however, should be changed: The word "discretionary" should be changed to "stabilization." The corroborating Japanese evidence shows that, if anything, Japan is a more eager practitioner of stabilization policy.

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