Comment on: "Planning to cheat: EU fiscal policy in real time" by Roel Beetsma, Massimo Giuliodori and Peter Wierts

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This paper presents and organizes a number of interesting facts about the process of budget planning in countries in the European union. The purpose of this comment is analyze further the relation between planned and actual fiscal stance and to explain why characterizing and measuring this relation has important policy implications.

Figure 1, using the dataset put together by Beetsma, Giulodori and Wierts (henceforth BGW), plots actual v/s planned expenditure to GDP ratios in a number of EU countries for the period 2001-2010. The figure shows that planned expenditures are only an imperfect predictor of actual expenditures as for many countries there is a considerable distance between the thick solid line line (actual expenditure ratio in a given year) and the thin dashed, dot-dashed and dotted lines (expenditures ratios planned for 1,2 and 3 years in advance). Yet the figure also suggests that planned expenditure ratios do have same predictive power in forecasting actual ratios.

In order to explore this issue more precisely I estimate, on the BGW panel data, the following relation between g_{it}, the realized growth of a fiscal variable in country i in period t, and g_{it}^{t-j} the growth of the same variable as planned j periods in advance

$$g_{it} = \beta g_{it}^{t-j} + \varepsilon_{it}$$

Results of the OLS estimates for government revenues and expenditures (as a fraction of GDP)

*The views expressed herein are those of the author and not necessarily those of the Federal Reserve Bank of Minneapolis or the Federal Reserve System.

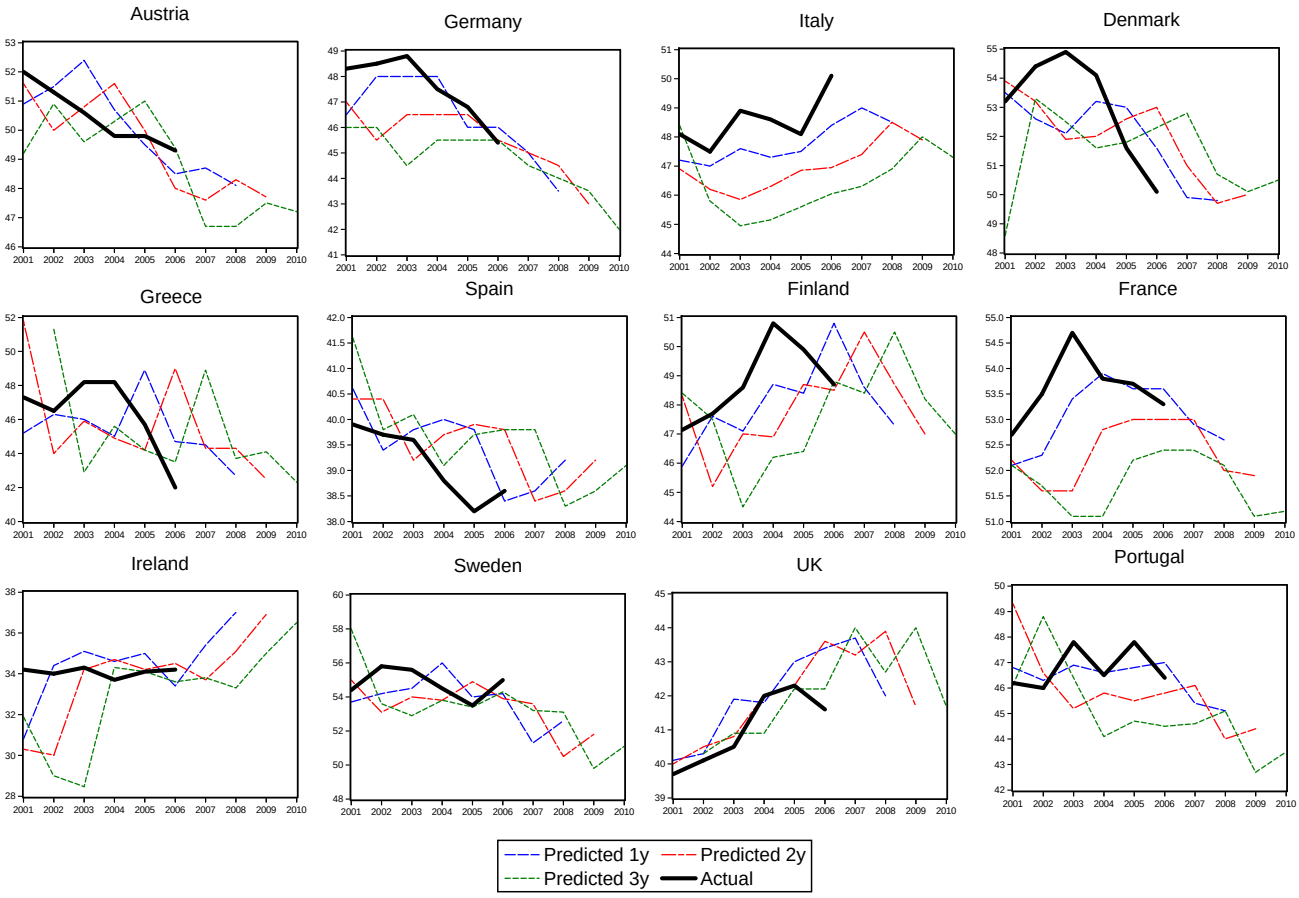

Figure 1: Expenditure ratios: actual v/s planned

are reported in table 1 below

Table 1. Predicting fiscal stance

	β	
	Expenditure	Revenues
j=1	0.69	0.71
	(0.29)	(0.15)
j=2	0.75	0.79
	(0.26)	(0.15)
j=3	0.38	0.78
	(0.16)	(0.13)

Note: Regressions include country and time fixed effects.
Standard errors are in parentheses

These results suggest that planned growth in fiscal variables provides information on realized growth of those fiscal variables. This result is potentially relevant for analyzing the size of the fiscal multipliers (i.e. the impact of fiscal policy on GDP), an issue over which there is considerable debate and uncertainty (see for example the recent survey article by Spilimbergo, Symansky, and Schindler, 2009). The reason is the the so-called fiscal foresight problem (see e.g. Leeper, Walker and Yang, 2009). The problem in a nutshell is that if fiscal shocks are signalled in advance and agents react to the signal (due, for example, to intertemporal budget constraint consideration) then output reacts to the signal and not to the actual shock. In this situation estimating the effect of fiscal shocks on output using standard VAR becomes difficult, as output does not comove with actual fiscal changes but with the signals that are observed by the agent and not by the econometrician.

A simple example

To make things clearer consider the following reduced form model of fiscal shocks and GDP. Let s_t be a signal about future fiscal policy shocks (i.e. the equivalent of the fiscal plans described by BGW) . Realized fiscal policy g_t (described by equation 1) follows an $AR(1)$ process with persistence $\rho_g > 0$ which is affected by foresighted shocks δs_{t-1} and by non foresighted shocks $(1-\delta)\eta_t$ .The key parameter here is δ which captures the extent of fiscal foresight. If $\delta = 0$ the signal s_t carries no information on future fiscal policy stance. If $\delta = 1$ there is perfect foresight and the fiscal stance in period t is fully revealed by the signal in period $t-1$. The final piece of the model is equation (2) that assumes output y_t also is an $AR(1)$ process with persistence $\rho_y > 0$ and normal innovations v_t. Output responds, through

the multiplier γ, to informative signals about fiscal policy δs_t and to unforesighted shocks $(1-\delta)\eta_t$. A model with these features could be easily derived from a full fledged neoclassical model (see for example Ayiagari, Christiano and Eichenbaum, 1992)

$$g_t = \rho_g g_{t-1} + \underbrace{\delta s_{t-1}}_{\text{Foresight}} + (1-\delta)\eta_t \quad (1)$$

$$y_t = \rho_y y_{t-1} + \underbrace{\gamma}_{\text{Multiplier}} (\delta s_t + (1-\delta)\eta_t) + v_t \quad (2)$$

Estimating the multiplier

Suppose now that $\delta = 0$ (i.e. there is no foresight of shocks) then substituting (1) into (2) yields

$$y_t = \rho_y y_{t-1} + \gamma g_t - \gamma \rho_g g_{t-1} + v_t$$

which shows that an unbiased estimate of the fiscal multiplier γ can be obtained using a simple VARs on y and g which are observed by the econometrician. But if $\delta > 0$ (i.e. there is foresight) and signals s_t are not observed by econometrician then substituting (1) into (2) yields

$$y_t = \rho_y y_{t-1} + \gamma g_t - \gamma \rho_g g_{t-1} + \underbrace{\gamma \delta s_t - \gamma \delta s_{t-1} + v_t}_{\text{Error}}$$

Note that in this specification the error term is correlated with regressors and hence VAR estimates of γ are biased. The simple intuition is that when a signal arrives, econometrician sees output change but does not see fiscal policy move, so does not attribute the movement to the fiscal shock. Figure 2 plots the estimates of the multiplier obtained with various degree of fiscal foresight, under the assumption that the true multiplier is 0.8. Note that the presence of fiscal foresight can lead to a large bias in the estimate of the true fiscal multiplier.

A potential solution to this problem is the use of instrumental variables (see for example Blanchard and Perotti, 2002) but it relies on finding the right instrument. The work by BGW suggests that directly observed signals (i.e. fiscal policy plans) are an ideal instrument for the problem. Indeed if signals are part of the observables the fiscal foresight problem disappears and VAR yields unbiased estimates of the multiplier, as equation (3) shows

$$y_t = \rho_y y_{t-1} + \gamma g_t - \gamma \rho_g g_{t-1} + \gamma \delta s_t - \gamma \delta s_{t-1} + \underbrace{v_t}_{\text{Error}} \quad (3)$$

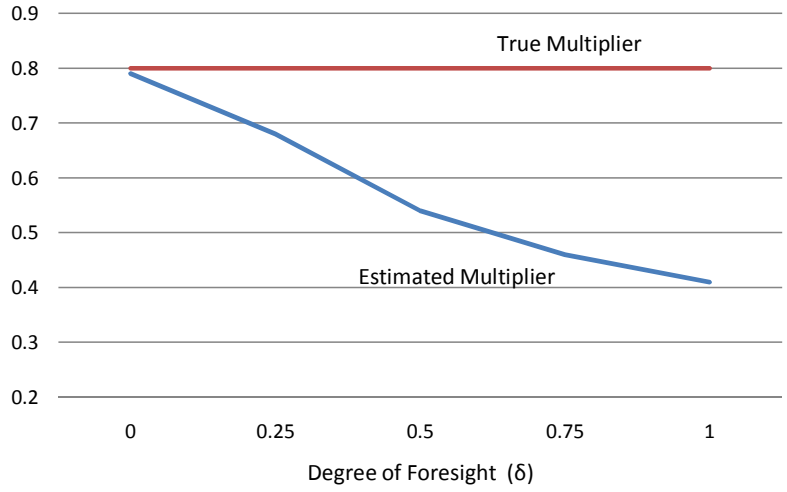

Figure 2: Estimating fiscal multipliers with fiscal foresight

Conclusions

This paper provides and organize interesting data that connects fiscal policy plans/signals to actual fiscal policy stance. The main point of this comment is that signals about fiscal policy stance are potentially very important to better understand the effects of fiscal policy on output. Future work could use measures of fiscal policy signals like the one provided in this paper together with structural models to obtain better measures of fiscal multipliers, a policy question of primary importance, especially in light of current macroeconomic developments.

References

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