



# Fiscal policy in Europe: The importance of making it predictable



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## ABSTRACT

This paper provides evidence in support of the hypothesis that fiscal policy is largely anticipated and its effects depend on the extent to which policy is able to affect expectations. Based on a set of 2-country Bayesian VAR models between major European economies, we find that a surprise stimulus triggers expectations of deficit reversals that may crowd out private expenditure. An anticipated stimulus, on the contrary, is found to boost domestic activity in all samples. Moreover, it has positive cross-border effects in 50 percent of the cases. Overall, our findings suggest that fiscal policy is effective when it is not “crowded out” by expectations of reversals. We document such crowding out effects in Italy and France. Finally, we argue that predictability has important consequences for the design of discretionary policy.

## 1. Introduction

The empirical evidence about the macroeconomic effects of fiscal policy is abundant yet controversial. A one dollar increase in government expenditure is found to stimulate an increase in real output over time ranging from 0.5 up to 2.5 dollars in the United States. A similar variability characterizes other developed countries while the uncertainty about the size of the fiscal multipliers is even greater in emerging economies.<sup>1,2</sup> A size of the multiplier below unity implies that increased government absorption is at least partially crowded out by the other components of aggregate demand (consumption, investments or net exports), in accord with Ricardian theories stressing the forward-looking behavior of consumers. In the Ricardian world, consumers realize that a fiscal expansion today, say an increase in expenditure or a tax cut, will lead to a fiscal retrenchment in the future. Insofar as the retrenchment implies higher taxes, consumers may

reduce their current consumption in anticipation of reduced permanent income. Multipliers above unity, on the other hand, support the Keynesian view, in which consumption responds mainly to current income.

The evidence is even more controversial as regards the international repercussions of a country's fiscal policy. Estimated cross-border output spillovers span from negative to positive values, and a bulk of studies questions the empirical relevance of these spillovers.<sup>3</sup> The question is particularly relevant in the context of a monetary union, where a central element in assessing the need for closer fiscal coordination and the forms such coordination should take is to understand the nature of international fiscal policy spillovers.<sup>4</sup>

The recent empirical research has identified a number of critical factors that may help explain the variability of the fiscal multipliers. It is by now well-understood that the effectiveness of a fiscal stimulus depends on such a large set of circumstances that the notion of

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<sup>1</sup> Ilizetzi et al. (2013) document an output multiplier of government expenditure in advanced economies equal to 0.66 on average. Corsetti et al. (2012) find larger values, especially in times of financial crisis. In the euro area, Hondroyannis and Papaioannou (2015) estimate output multipliers in the region of 0.5, although there is considerable variation depending on the fiscal mix, the degree of openness and cyclical conditions. In the euro area see also Gadatsch et al. (2016) and Forni et al. (2009). Detailed surveys include, among others, Reichling and Whalen (2012) and Ramey (2011b).

<sup>2</sup> Ilizetzi et al. (2013) find multipliers not significantly different from zero in developing countries. In developing Asia, Jha et al. (2014) document ample variability in the size of fiscal multipliers and show that tax cuts have in general higher multipliers than government spending.

<sup>3</sup> In the euro area, positive output spillovers are documented by Beetsma and Giuliadori (2005), Beetsma et al. (2006), Cimadomo and Benassy-Quere (2012), Hebous and Zimmermann (2013), in 't Veld (2013) and Canova et al. (2013). Caporale and Girardi (2013) find negative spillovers arising from higher borrowing costs. For small and even negative spillovers see also Gadatsch et al. (2016), Cwik and Wieland (2011) and Kilponen et al. (2015). Outside the euro area, see, among others, Auerbach and Gorodnichenko (2013), OECD (2009) and Carmignani (2015).

<sup>4</sup> It is worth stressing that although significant spillovers are necessary to make a case for fiscal coordination, they are not sufficient to establish that such coordination is welfare-improving. Examples of counter-productive fiscal policy coordination in monetary unions abound.

multiplier itself is put into question.<sup>5</sup> The estimated multipliers vary substantially over the business cycle and are higher in recessions, as pointed out by [Auerbach and Gorodnichenko \(2012\)](#). Moreover, their size and even their sign are affected by the timing and composition of the fiscal package as well as by key country characteristics, such as the level of development, the exchange rate regime, the degree of trade openness, financial development, financial health and the state of public finances.

This paper takes a different route. We want to explore the role of foresight for the impact of fiscal policy on domestic and foreign activity. The notion that fiscal policy can be largely anticipated and its predictability can affect the way fiscal shocks are transmitted in the real economy is by no means new. On the theoretical ground it goes back at least to the Ricardian equivalence between debt and taxes. In empirical studies, various approaches have been proposed to deal with predictability. [Fatas and Mihov \(2001\)](#) popularized the use of a recursive identification to capture the long lags that characterize the implementation of fiscal policy. [Blanchard and Perotti \(2002\)](#) include institutional information about the tax and transfer system together with information about their timing for identifying fiscal shocks. The *narrative approach* of [Romer and Romer \(2010\)](#) suggests considering only fiscal episodes that are known to be genuinely exogenous and not correlated with the business cycle, as military expenditure in times of war and political crises. More recently, [Forni and Gambetti \(2016\)](#) propose to disentangle surprise and what they call news shocks. The former are unpredictable changes in a realized fiscal variable, public spending in their study, and the latter are changes in policy forecasts, i.e. the forecast of public spending from the Survey of Professional Forecasters. We draw on [Forni and Gambetti \(2016\)](#) and study the impact of unpredictable (or surprise) fiscal expansions in Europe as compared to the impact of predictable (or forecasted) expansions. The kind of questions we want to answer are: What is the impact of a fiscal stimulus that is completely unexpected? What are the consequences of expanding policy today for the expectations about the future policy actions? In which conditions can the fiscal stimulus be effective? What is the impact of a change in the policy forecasts?

For this purpose, we consider a set of two-country Bayesian SVAR models among major European economies that include measures of realized and predicted policy together with macroeconomic and financial variables. We then trace the macroeconomic dynamics in response to both surprise and foresight shocks. The measures of fiscal policy we use are the realized and the predicted government balance (ratio to GDP), both from the European Commission Forecasts. Data refer to Italy, France and Germany over the period 1971–2011. Fiscal shocks are identified through a recursive ordering in which the realized policy does not react within the year to innovations in any other variable in the system, including the predicted policy. The assumption reflects the long lags that characterize the fiscal decision process. Forecasts, on the contrary, are allowed to react to innovations in the realized policy, so as to capture the incentive to revise the forecasts when news about the deficit become available.

On the methodological ground, the fact that fiscal policy can be anticipated to a large extent poses a non-trivial identification problem in VAR models. Fiscal variables are the result of a complex decision process, entailing long lags between the moment when the decision is taken and when it is effectively implemented. They are inherently predictable and may not convey sufficient information for identifying the structural shocks, a problem known as “non-fundamentalness”. The responses estimated in non-fundamental VAR models may be misleading and very far from the true ones. In the words of [Ramey \(2011a\)](#), identifying fiscal shocks is all in the timing.

<sup>5</sup> Empirical explorations into the determinants of fiscal multipliers include, among those already cited, [Auerbach and Gorodnichenko \(2012\)](#), [Christiano et al. \(2011\)](#), [Caldara and Kamps \(2012\)](#), [Erceg and Linde \(2012\)](#), [Leeper et al. \(2012\)](#), and [Woodford \(2011\)](#). See also [Caggiano et al. \(2015\)](#) and [Guajardo et al. \(2014\)](#).

We provide evidence in support of the hypothesis that fiscal policy is largely anticipated and its effects depend on expectations about future policy actions. We first document the forecasting accuracy of the European Commission Forecasts and show that they help address the problem of non-fundamentalness in the identification of fiscal shocks. Then, we estimate the macroeconomic impact of the surprise and foresight shocks.

A surprise expansion has negligible effects on economic activity over the medium term, and the dynamics exhibit ample variability across countries. A shock originated in Germany has no significant impact on output. The shock has contractionary effects when it originates in Italy or in France. Interestingly, in all samples the surprise stimulus has only a limited impact on forecasts: a one percent increase in the deficit triggers a revision of forecasts between  $-0.12$  and  $0.88$  percent over the entire horizon, depending on the forecast indicator and the country considered. A less than proportional response reflects expectations that the deficit increase will be at least partially reversed in the future. Deficit reversals, by crowding out private expenditure, can help explain why the stimulus is ineffective or even counter-productive. We document a substantial crowding out of private investments in Italy and France.

A different picture emerges when the fiscal stimulus is fully anticipated. The predicted expansion (the foresight shock) leads to an increase in domestic activity. International output spillovers are positive as well, although they are significant in 50 percent of the cases.

The paper is organized as follows. [Section 2](#) verifies the forecast accuracy of the European Commission Forecasts and assesses their implications for the identification of fiscal shocks. [Section 3](#) presents the econometric approach and [Section 4](#) discusses the results. [Section 5](#) concludes.

## 2. Fiscal foresight

It is amply recognized that fiscal policy can be anticipated to a large extent. Yet, empirical evidence documenting fiscal foresight with time series data is scarce. Most contributions focus on government expenditure in the United States, including [Ramey \(2011a\)](#), [Perotti \(2011\)](#) and [Forni and Gambetti \(2016\)](#) among others. Using the Survey of Professional Forecasters, these studies suggest that the forecasts of government spending provide useful information about the prospective developments of government spending, private consumption and output growth. Ignoring this information can cause serious estimation bias.

In this section, we will assess the extent to which publicly available forecasts of the government balance in Italy, France and Germany provide information about future policy developments and their role for the identification of structural shocks. For this purpose, we use the European Commission Forecasts, ECF henceforth. The ECF report, for each year over the period 1971–2011, the forecast of the government balance (ratio to GDP),  $d_t$ , made at the beginning of the period for the current and the subsequent period,  $f_t(d_t)$  and  $f_t(d_{t+1})$ , respectively. Forecasts are released in the spring and autumn of each year. From the original data, we derive the cumulated forecast:

$$F_t = f_t(d_t) + f_t(d_{t+1}) \quad (1)$$

the forecast error:

$$Fe_t = d_t - f_t(d_t) \quad (2)$$

and the forecast news:

$$Fn_t = f_t(d_t) - f_{t-1}(d_t) \quad (3)$$

Each of the indicators above reflects a distinct aspect of the forecasting process. The cumulated forecast captures the expected fiscal stance over a two-year horizon. A long forecast horizon may be appropriate to orientate decisions, as investments, that involve the distant future. The forecast error provides information about the

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