



# Business cycle determinants and fiscal policy: A Panel ARDL approach for EMU<sup>☆</sup>



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## ABSTRACT

In a monetary union, fiscal policy is probably the most important tool in dealing with country-specific fluctuations. This paper addresses some fundamental economic questions regarding the determinants of business cycles in the EMU in the time period 1995–2012. More precisely, it acknowledges the significant role of fiscal policy and estimates relevant models for EMU countries where trade openness and other crucial variables are investigated. Various relevant econometric techniques have been employed, such as Panel ARDL. Social benefits are found to be the most important variable, whereas capital expenditures and indirect taxes are the major pro-cyclical variables. Furthermore, the formation of the EMU, along with the increasing trade openness, suggests a clear cut countercyclical effect. In other words, the common monetary policy and the deeper financial integration constitute reasons for the decrease in the magnitude of the fluctuations.

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## 1. Introduction

According to the IMF (2005), the determinants of output volatility may be broadly grouped in the following categories: the stability of macroeconomic policies (Fatás & Mihov, 2003), trade and financial integration, financial sector development (Easterly, Islam & Stiglitz, 2001; Kose, Prasad & Terrones, 2003; Raddatz, 2003), and the quality of institutions (Acemoglu, Robinson & Thatcharoen, 2003).

Also, business cycles fluctuations are often related to trade openness, despite the fact that the pro(counter)cyclical character of trade openness remains open (see Rodrik (1998) Easterly et al. (2001), Kose et al. (2003), Bejan (2006), Bekaert, Harvey and Lundblad (2006) and Cavallo, Powell and Rigobon (2008)). Furthermore, business cycle volatility is often related to financial integration, and to trade shocks (Kose, 2001) through foreign demand shocks (Senhadji, 1998). Furceri and Karras (2007) attribute business cycle volatility to the size of the population of a country and thus

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to economies of scale, whereas [Kose et al. \(2003\)](#) argue that business cycles volatility differs from emerging markets to developed ones.

Of course, business cycle fluctuations are often attributed to the impact of fiscal policy variables (see, for example, [Lane \(2003\)](#), [Galli and Perotti \(2003\)](#) and [Alesina, Campante and Tabellini \(2008\)](#)). In this framework, a question of great importance is whether fiscal variables are related to business cycle volatility and to business cycle synchronization in the context of the European Monetary Union (EMU), given that business cycle synchronization draws heavily upon comparable business cycle volatility, especially in monetary unions.

This paper contributes to the literature in the following ways: Firstly, it studies business cycle determinants for the EMU, in the time period 1995–2012 which captures the recent crisis, answering at least partly, the question of the origins of the crisis and the reasons for the divergence among EMU countries' business cycles, with respect to fiscal policy variables. Secondly, it examines the impact of EMU formation on the volatility of business cycles and, thirdly, it relates elections with business cycle volatility and synchronization. Of course, answering these questions is not devoid of policy implications.

The remainder of this paper is structured as follows: [Section 2](#) provides a review of the literature; [Section 3](#) sets out the methodological framework; [Section 4](#) discusses the data and variables; [Section 5](#) presents and analyses the empirical results; finally, [Section 6](#) concludes.

## 2. Previous work

According to [Blanchard and Simon \(2001\)](#), the most recent expansions of the US economy have lasted more because of the underlying decline of output volatility. The first, from 1982 to 1990, lasted 31 quarters. The second started in 1991 and, although showing signs of faltering, is already the longest U.S. expansion on record. Furthermore, they contend that this decline is not a recent development. Rather it has been a steady decline over several decades, which started in the 1950s (or earlier, but lack of consistent data makes this difficult to establish), was interrupted in the 1970s and early 1980s, and returned to trend in the late 1980s and the 1990s. The magnitude of the decline is substantial: the standard deviation of quarterly output growth has declined by a factor of three over the period.

[Acemoglu et al. \(2003\)](#) instead of the relationship between output volatility and distortionary macroeconomic policies (including high inflation, large budget deficits and misaligned exchange rates), focus on the relationship between output volatility and institutions. They find that weak institutions cause volatility through a number of microeconomic, as well as macroeconomic, channels. [Kose et al. \(2003\)](#) mention that financial openness measured as the ratio of gross capital flows to GDP is associated non-linearly with an increase in the ratio of consumption volatility to income volatility. Also, they report that business cycle volatility differs from emerging markets to developed ones. [Easterly et al. \(2001\)](#) report that openness reduces volatility through the enhancement of growth. Also, excessive private credit can increase volatility, in the sense that financial institutions have a central role in economic volatility.

Meanwhile, [Galli and Perotti \(2003\)](#) do not find supporting evidence for the view that the Stability Growth Pact impaired the ability of EU governments to conduct effective discretionary countercyclical fiscal policy. Also, discretionary fiscal policy in the EMU countries has become more countercyclical over time, following what appears to be a trend that affects other industrialized countries, as well. Furthermore, the decline in public investment cannot be attributed to the constraints implied by the Maastricht treaty and the Stability and Growth Pact. [Fatás and Mihov \(2003\)](#) aimed at studying the effects of discretionary fiscal policy on output volatility and economic growth. They found that governments who use fiscal policy as an instrument induce macroeconomic instability. Also, prudent use of fiscal policy is explained, to a large extent, by the presence of political constraints and other political and institutional variables. As a result, they support institutional restrictions as a way to reduce output volatility. [Castro \(2011\)](#) showed that the institutional changes that occurred in the European Union after 1992 were not harmful to growth.

[Bejan \(2006\)](#) finds a negative relationship between trade openness and business cycle volatility should government size and some measures of external risk, such as terms of trade volatility and export concentration index, are controlled. [Malik and Temple \(2006\)](#) examine the structural determinants of output volatility in developing countries and especially the roles of geography and institutions. They find that countries with weak institutions are more volatile but also find evidence of geographical characteristics on output volatility. Countries remote from the sea are more volatile and remoteness is associated with lack of export diversification. [Furceri and Karras \(2007\)](#) suggest a strong, statistically significant and negative, relationship between country size and business cycle volatility implying that smaller countries are subject to more volatile business cycles than larger ones.

[Magud \(2008\)](#) argues that the smoothing effects of fiscal policy on business cycles fluctuations depend on the initial conditions at the time of a positive/negative shock, whereas fiscal policy may be expansionary or contractionary in terms of output according to the fiscal fragility of the government. In other words, an expansionary fiscal policy will not always be expansionary in terms of output and could end up being contractionary.

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