



Do institutional changes affect business cycles? Evidence from Europe

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ABSTRACT

We study the effects that the Maastricht Treaty, the creation of the ECB, and the Euro changeover had on the dynamics of European business cycles using a panel VAR and data from 10 European countries—seven from the Euro area and three outside of it. There are changes in the features of European business cycles and in the transmission of shocks. They precede the three events of interest and are more linked to a general process of European convergence and synchronization.

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1. Introduction

Many studies have shown that real activity in developed countries displays common characteristics, see [Del Negro and Otrok \(2008\)](#), [Giannone and Reichlin \(2006\)](#), and [Canova et al. \(2007\)](#) among others. There is also mounting evidence that the characteristics of real cyclical fluctuations are changing over time. For example, [Bayoumi and Helbling \(2003\)](#) find that synchronization of OECD cycles increased after 2000; [Stock and Watson \(2003\)](#) highlight changes in the volatility of G-7 cycles in the 1990s, and [Canova et al. \(2007\)](#) document variations in the correlation structure of G-7 fluctuations since the late 1980s.

Why are the cyclical features of industrialized economies changing? Three possibilities come to mind. It could be that variations in structural features have altered the transmission of shocks within and across countries. For instance, changes in the preferences of the monetary authority have been often invoked to explain the “Great inflation” of the 1970s and the subsequent period of a more stable and predictable macroeconomic environment in the US and other countries (see e.g. [Lubik and Schorfheide, 2004](#), or [Cogley and Sargent, 2005](#)). An alternative possibility is that the characteristics and the frequency of the shocks hitting developed economies have dramatically changed. [Sims and Zha \(2006\)](#) and [Canova and](#)

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Gambetti (2009) among others, argued that changes in the volatility of macroeconomic shocks could be responsible for changes in the volatility and in the persistence of output and inflation in the US; Stock and Watson (2003) suggested that changes in the shock volatility affected the magnitude of the international correlation of macroeconomic variables; and Bayoumi and Helbling (2003) claimed that common shocks are now more frequent than used to be. Finally, institutional changes may have altered the nature of cyclical fluctuations. Thus, the same type of shocks and the same policies could have had different repercussions because the environment in which they took place has changed. To the best of our knowledge, this last option has received little attention in the literature. This seems an important shortcoming since, at least in Europe, the institutional setting has dramatically changed over the last 20 years—the Maastricht Treaty implemented, the European Central Bank created, the Euro introduced. The recent sovereign debt crisis has created expectations of further institutional changes which may alter the transmission of shocks in Euro area countries, the propagation between Euro area and non-Euro area countries, and in general, the way business cycles shape.

Several reasons may explain why the literature has largely neglected the topic. Institutions typically change slowly making it difficult to select subsamples over which to compare cyclical fluctuations; variations of this type may affect cycles with much longer periodicity than the ones typically associated with business fluctuations (see e.g. earlier work by Alesina, 1988, or Ball, 2010); externalities and threshold effects may matter and long delays make their quantitative importance difficult to measure in small samples. Finally, institutional changes hardly come in a vacuum and this makes it particularly difficult to attribute observed variations to these factors.

This paper sheds some light on the issue by focusing on the consequences that the Maastricht Treaty, the creation of the ECB and the Euro changeover had for European *real* cyclical fluctuations. The investigation is relevant from, at least, three different perspectives. First, since these changes were brought about by politicians and were, to a large extent, exogenous with respect to the dynamics of the European economies, the experience is unique to verify some well-known implications of the common currency area literature. For example, does real convergence precede the establishment of common monetary institutions or the reverse holds true? Second, two of the events are monetary in nature. The ability of monetary factors to affect real variables at business cycle frequencies has been extensively studied and limited effects typically found. However, the events we consider are different from those typically examined in the literature and their consequences a priori comparable to the establishment of the Fed or the breakdown of the gold standard, which did affect cyclical fluctuations (see e.g. Bergman et al., 1998). Third, in macroeconomic analyses it is common to separate business cycles from other types of fluctuations claiming that the mechanism generating the two types of movements is different. If institutional changes, besides affecting medium-long run tendencies, also exercise an impact on the business cycle, such a practice should be reconsidered.

Since the subject is largely unexplored, we focus attention to two somewhat narrow questions. Has there been any tendency for European and national cycles to vary when these institutional changes took place? Is there any difference in the relative impact that the institutional reforms had on the cyclical characteristics of the data?

To study these questions we employ a panel VAR model of the type developed in Canova and Ciccarelli (2009). The setup is useful because (i) it handles large scale models displaying unit specific dynamics and cross-country lagged interdependencies; (ii) it flexibly allows for time variations in the correlation structure across variables and units; and (iii) it features an index structure, where the distribution of European, Euro area and national specific cyclical indicators can recursively be constructed. Since our sample of countries includes both Euro area and non-Euro countries, we have a natural control group which helps us to strengthen our conclusions about the relevance of the creation of the ECB and the Euro changeover for European cyclical fluctuations.

The features of European and national cycles have changed over time. For instance, we detect volatility changes, variations in the persistence of the fluctuations of both European and national cycles, and a higher conformity between national and European fluctuations since 1990. Furthermore, there has been an intensification of the links, both within Europe, and between Europe and the US, and shocks are now 'more' common than in the past. However, these variations either predate or are disconnected with the events of interest, and are shared by Euro area and non-Euro area countries. In addition, our model predicts the pattern of output growth fluctuations well after the creation of the ECB and the Euro changeover, suggesting that these two events did not produce clean breaks in the dynamics of real variables. Thus, time variations in the features and the transmission of cyclical fluctuations appear to be linked more to the general process of European convergence taking place since the mid-1980s than to the institutional changes we consider.

While the evidence is not very supportive, one should be careful in drawing the conclusion that the institutional events have no effects on the real fluctuations. Our study examines only demeaned, standardized business cycles fluctuations; thus, effects on the level or the volatility could be present. Medium term (say, 8 and 12 years) cycles could also be influenced. Moreover, while not directly linked to business cycle variations, institutional changes could have indirectly contributed to solidify on-going tendencies, for example, by making the environment more predictable or better insulating the real economy from undesirable nominal shocks. These issues are interesting but, to quantify their importance, a more structural model needs to be employed.

The rest of the paper is organized as follows: the next section presents the model, the technique used to construct the indicators and interesting statistics. Section 3 presents the data and some specification analysis. Section 4 contains the results. Section 5 concludes.

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