Economic Modelling 31 (2013) 804–816

Contents lists available at SciVerse ScienceDirect

Economic Modelling

journal homepage: www.elsevier.com/locate/ecmod

Business cycles and economic crisis in Greece (1960–2011): A long run equilibrium analysis in the Eurozone ☆

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A R T I C L E I N F O

Article history:
Accepted 10 January 2013

Keywords:
Economic crisis
Greece
EU
Business cycles
Eurozone

A B S T R A C T

Empirical studies find that fluctuations in output and other macroeconomic aggregates are positively related across countries. Economic theory focuses on two main explanations: common shocks and common transmission mechanisms. In this paper, we conduct an empirical analysis of the international influences, specifically from the U.S. and E.U. on the Greek business-cycle. First, we provide an in-depth analysis of the Greek economy, summarizing crucial aspects and trends by means of relevant econometric techniques such as business cycles extraction and periodization based on filtering, spectral analysis and causality tests. Next, we assess the long-run equilibriums of the Greek economy with the rest of the E.U. countries and the U.S. economy by means of a Vector Error Correction model. Our results imply a significant shift in the long-run equilibriums of the Greek economy towards increasing convergence rates with the U.S. economy after the implementation of the common monetary policy and increasing convergence rates towards the peripheral countries of the E.M.U. Also, the Greek GDP fluctuations are found to be caused, to a certain extent, by the EMU and US fluctuations, implying a transmission mechanism of business cycles from the EMU and the US to the Greek economy.

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1. Introduction

Empirical studies find that cyclical variations in output and other macroeconomic aggregates are positively related across countries (Schmitt–Grohe, 1998). Attempts to explain this situation in a dynamic equilibrium-business-cycle framework have been made by a number of authors (e.g. Backus et al., 1992; Stockman and Tesar, 1995). In this context, economic theory focuses on two main explanations, the common shocks and the common transmission mechanisms. In fact, while a common shock is necessary in order to affect both the domestic and foreign economies, the propagation of the shock may lead to common macroeconomic fluctuations only if similar transmission mechanisms are at work (Bagliano and Morana, 2010).

The attention of economists has shifted away from business cycles determinants to the transmission channels. The ongoing processes such as trade liberalization, foreign investment and globalization create complex economic linkages between the various countries' business cycles. The decreasing global business cycle fluctuations, which seemed to characterize the period up until the subprime crisis, were mainly attributed to the decreasing importance of global shocks (Stock and Watson, 2003). However, the literature usually finds that global shocks play a dominant role in explaining output fluctuations in the country under examination (Schneider and Fenz, 2011). According to Bagliano and Morana (2010) while for the 1960s and 1970s the global shocks could be related to US monetary policy, the oil price and the price of industrial materials (Stock and Watson, 2003), in more recent periods they could be linked to productivity changes and monetary policy disturbances (Kose et al., 2008). In this vein, Bagliano and Morana (2006) found a key role for global demand and productivity shocks since the 1980s for the G-7 countries, while global stock market and oil price shocks have been less important in shaping macroeconomic fluctuations.

The economic fragility of the PIIGS (Portugal Italy, Ireland, Greece and Spain) and the so-called "debt crisis" poses questions about the nature of the crisis and its transmission mechanisms. For instance, the origins of the Greek financial crisis are manifested in the growing imbalances, primarily fiscal and current-account deficits, since euro-area entry in 2001 (Gibson et al., 2012). The current economic crisis started, at least partly, in the US and is now behaving as an autonomous European crisis. However the transmission mechanisms and the role of Greece are of particular importance. Also, the surge of financial flows and the increase of international trade are believed

☆ We would like to thank two anonymous referees of this *Journal* for their constructive comments.

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0264-9993/$ – see front matter © 2013 Elsevier B.V. All rights reserved.
http://dx.doi.org/10.1016/j.econmod.2013.01.013

to have increased the transmission of shocks across countries, such as Greece (Imbs, 2004, 2006; Kose, 2004).

This paper makes an attempt to assess the long-run equilibriums of the Greek economy with the rest of the E.U. and the U.S. economy by means of a relevant VAR model. After the outburst of the crisis, the Euro-area, and especially Greece, seems rather split and possible linkages to the U.S. business cycle may be relevant. In addition, this paper focuses on the question of causality of the Greek crisis. The proposed model is used to check the various interconnections of the Greek economy and as such it checks the long run equilibriums towards the EMU counterparts, as well as the US and the UK, making use of relevant macroeconomic variables. Also, the study presents an analysis of crucial moments of the Greek economy through an extensive review of the literature, unraveling trends, turning points and facts concerning the Greek economy and binds them up with the econometric results giving a deep insight of the past, present and future of the Greek economy. The review goes through issues of synchronization as well as issues of fluctuations and turning points over the last six (6) decades. Thus, the analysis of the Greek crisis is based on econometric and historical perspectives.

The paper is structured as follows: Section 2 presents the background literature; Section 3 sets out the methodology; Section 4 discusses the empirical findings; finally, Section 5 concludes.

2. Background literature

2.1. Studies on the Greek business cycle

There is a scarcity of works which attempt to assess the performance of the Greek economy from the post-World War II period until recently. In an early study, Mouzelis (1977) argued that the 1960s coincided with a period when investment expanded for the first time to a considerable extent. This was an important step towards the 'industrialization' of the Greek economy (Mouzelis, 1977, p. 91, pp. 276–7). Ioakimoglou and Milios (1993) offered a periodization for Greece's economic performance. Alogoskoufis et al. (1995) separated the performance of the Greek economy of the post-1960 period into two distinct phases, and considered the year 1974 (i.e. the end of the military dictatorship) as the turning point. Tsakalotos (1998) focused on the internal and external constraints facing social-democratic parties in power which aimed at extending democracy and "promote coordination and cooperation between economic agents and groups". His main argument was that "the Greek context was not propitious for introducing measures for extending democracy to the economic sphere" (Tsakalotos, 1998, p. 115). Bosworth and Kollintzas (2001) perceived two distinct phases in the growth patterns of the Greek economy and placed the year 1973 as their demarcation date. This periodization is consistent, in general terms, with Christodoulakis et al. (1993) who reached the same conclusion focusing on the reduction in industry protection following Greece's entry in the E.U. and the impact of uncertainties about the future political situation on investment as the underlying cause for their choice of the inflection point.

Relatively recently, Bosworth and Kollintzas (2001) attempted to trace the causes for the fall-off in TFP growth. They argued that this was the result of a large number of negative developments such as "the worsening macroeconomic situation and a highly inefficient structure of the labor market" alongside the unsuccessful trade policy after E.U. accession. Furthermore, Bosworth and Kollintzas (2001) did not attribute the deteriorating performance to the EC accession, a thesis which is consistent with Alogoskoufis et al. (1995) and opposed to the conclusions reached by Giannitsis (1993). However, in relation to EC accession, they emphasized the lack of any sectors for a clear comparative advantage in industry that could be utilized in the integrated economic environment.

Tavlas and Zonzilos (2001) used econometric tests, to locate the point of structural break. They pinpointed the early 1980s as the inflection year which led to the low-growth regime (Tavlas and Zonzilos, 2001, p. 205). An important conclusion of their analysis is that a second structural break seems to have taken place in the Greek economy in 1994. The authors attributed this change to the stable macroeconomic environment created thereafter and the implementation of structural reforms (Tavlas and Zonzilos, 2001, p. 209). Skouras (2001) commented on the institutional reforms planned or implemented until 1985 and in a similar vein with Tsakalotos (1998), he noted that "the management of their implementation was dismal" (Skouras, 2001, pp. 174–5).[1] Other authors focus on the macroeconomic policies followed in the 1980s after the government change which took place in 1981. For instance, Giannitsis (2005, p. 73 ff.) noted that it is difficult to find reliable economic analyses supporting the economic policies of that period but argued that the criteria for its evaluation should not be strictly economic.

OECD (2002) characterized the performance of the Greek economy since the early 1990s as 'remarkable', stressing the prevalence of high growth rates. The effective macroeconomic policies along with the liberalization of product and financial markets were regarded as the main drivers behind this growth pattern. Finally, a more recent OECD survey (2007) reported that Greece's growth rate since 1997 has exceeded 4.5%, ranking second after Ireland among OECD countries. The reasons for this impressive performance are: (a) financial market liberalization, (b) EMU membership, (c) growing activity in export markets in south-eastern Europe and (d) the stimulus given by the Olympic Games in 2004 (Belegri-Roboli and Michaelides, 2007).

It seems that there is an agreement, in general terms, among the various authors that the recent economic history of Greece since 1960 can be divided into three distinct periods: (i) the period extending from 1960 until some point in the middle 1970s where the Greek economy experienced rapid growth; (ii) a "halt" lasting until about the early or middle 1990s when most economic indexes showed a marked deceleration; and (iii) from that point on until the present crisis the Greek economy experienced a period of steady growth.

So far, empirical research focusing on *business cycles* in Greece has been relatively limited. Apergis and Panethimitakis (2007) examined the stylized facts of the Greek economy over the period 1960–2003. The authors investigated the behavior of basic macroeconomic variables in respect to the business cycle. The authors' conclusion was that real shocks drive the economy, implying that demand policies are ineffective. Kollintzas and Vassilatos (1996) built a RBC model for Greece and investigated its ability to account for the stylized facts of post-war Greece. The authors came to the conclusion that an increase in government consumption has an adverse effect on output and the productivity of factors of production although it is likely to increase foreign asset-holdings. Christodoulakis et al. (1993) compared the cyclical behavior of the Greek economy to that of other EC economies.

Conclusively, all authors agree that the Greek economy entered a protracted period of a recession in the mid-1970s which interrupted the steady growth initiated by the wave of industrialization in the 1960s. The macroeconomic policies of the 1980s are related to this slowdown and most authors stress the absence of long-term planning. A common point of the analyses is the concentration of macroeconomic policies on the demand side and more specifically on consumption, neglecting both investments and the supply side of the economy. Also, they noted an important change in the policy

[1] Kollintzas and Vassilatos (1996) argued that increases in the shares of government consumption have led to the worsening of the performance of the Greek economy.

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