An empirical analysis of the nexus between investment, fiscal balances and current account balances in Greece, Portugal and Spain

Ioannis Litsios[a], Keith Pilbeam[b],*

[a] Department of Economics, University of Bradford, UK
[b] Department of Economics, Northampton Square City, University of London, UK

ABSTRACT

We provide new evidence that current account balances in Greece, Portugal and Spain have become non-stationary after the adoption of the euro implying that there is no long-run stable relationship between savings and investment contrary to the Feldstein-Horioka puzzle. This can be taken as evidence of unsustainable current account balances and loss of solvency for the underlying economies. Using the ARDL methodology we also report a statistical association between fiscal balances and current account balances, which implies that fiscal austerity can help these economies to reduce their current account deficits and restore their competitiveness. Our empirical evidence also suggests a particularly strong significant negative association between domestic investment and current account deficits in all three economies. The magnitude of this latter effect may have important policy implications concerning the ways in which investment is financed in order to alleviate current account deficits and improve the external competitiveness of these economies.

1. Introduction

The twin deficit hypothesis, that is the association of increased fiscal deficits with rising current account deficits, has received much empirical scrutiny in the literature producing a mix of results for different countries. In light of the Eurozone crisis and the apparent current account imbalances between the 'core' and 'periphery' countries, it is important to investigate empirically the nexus between fiscal balances and current account balances and draw conclusions on whether fiscal austerity measures in the form of tougher controls on government expenditure and/or increases in taxation can affect external imbalances in highly indebted economies of the south Eurozone periphery.

The Eurozone crisis has many causes ranging from structural flaws within the Eurozone to the financial crisis post 2007 and resulting global recession. There is a clear division between core Eurozone economies (mainly represented by Germany) and the periphery typified by Greece, Spain and Portugal. After joining the Eurozone the periphery started losing its competitiveness through poorer perfor-

mance in labour markets and their relatively higher rates of inflation compared to Germany. High levels of consumption, especially in Greece and Portugal, accompanied by low rates of private saving generated a private sector deficit financed by borrowing from abroad. Public debt started to accumulate both pre and post the global financial crisis. At the same time, the three economies experienced large current account deficits with subsequent high external debt creation. In this paper we aim to shed light on the statistical association between fiscal balances and current account balances and investigate the extent to which investment is associated with large current account deficits in Greece, Spain and Portugal.[1]

Our research aims to contribute to the existing literature in a number of ways. First, we employ a time series approach to explore the extent to which the current account balances of Greece, Spain and Portugal contain a unit root. Such evidence is informative about these countries' solvency and the sustainability of their external debt. By employing unit root tests we provide empirical evidence that after adopting the euro, the current account balances of the three economies

---

* Corresponding author.
  E-mail addresses: I.Litsios@bradford.ac.uk (I. Litsios), K.S.Pilbeam@city.ac.uk (K. Pilbeam).

[1] We do not incorporate Italy in our analysis since Italy can be considered to be a periphery country with several distinct macroeconomic characteristics. More specifically, unlike Greece, Spain and Portugal, Italy did not report a substantial fiscal deficit in 2009 (greater than 10% of GDP), when the financial crisis emerged. In addition, since the adoption of the euro Italy had a better inflation differential with Germany with the ultimate result of suffering a less severe loss in competitiveness as compared with the other three peripheral economies. This later fact is also empirically confirmed by Busetti et al. (2006) who argue that Italy can be considered to be a separate case.

have become non-stationary implying that savings and investment react differently to shocks. Second, we investigate both the occurrence and the intensity of the twin deficit hypothesis. Third we provide empirical evidence on the Feldstein-Horioka puzzle for the selected economies. The empirical evidence concerning the relationship between government fiscal balances, investment and current account balances is undertaken using the ARDL co-integration methodology, which has a distinct advantage compared with other co-integration approaches like Engle and Granger (1987), Johansen (1988), and Johansen and Juselius (1990) that have been employed in previous studies.[2] Finally, to check the robustness of our results from the ARDL co-integration approach, as previously applied to the individual countries, we also perform the FM-OLS panel co-integration test for the three economies.

The paper is organised as follows: Section 2 provides a brief review of the literature on the twin deficit hypothesis and the Feldstein Horioka puzzle for the economies under consideration. Section 3 presents the Twin Deficit Hypothesis and the Feldstein Horioka puzzle. Section 4 presents the unit root tests on current account balances both for the pre and the post euro era for Greece, Spain and Portugal. Section 5 presents the ARDL co-integration methodology for each economy and interprets the results. Section 6 presents the results from the panel co-integration test and Section 7 concludes.

2. Literature review

Empirical studies focusing on the relationship between fiscal and current account deficits in the southern Eurozone periphery often provide inconclusive results. The lack of consensus has to do not only with the particular countries examined but also with the various underlying structural forces that may give rise to different correlations and the different empirical techniques that have been used.

Algieri (2013) examines the euro area's Mezzogiorno focusing on Greece, Ireland, Italy, Portugal and Spain (GIIPS group) after employing the traditional Granger (1969) causality test and the alternative Toda-Yamamoto (1995) methodology for each individual country. Evidence is found in favour of the Ricardian theory according to which there is no clear relationship between the fiscal balances and the current account balances. Bitzis et al. (2008) apply the Johansen (1996) and the Johansen and Juselius (1990) co-integration methodology along with the Error Correction Model and find little evidence that fiscal expansion worsens the Greek current account deficit. On the other hand, Kalou and Paleologou (2010) using a multivariate Vector Error Correction Model (VECM), allowing for endogenous determination of structural breaks, report evidence in favour of the twin deficit hypothesis for Greece. Trachanas and Katrakilidis (2013) provide empirical evidence in favour of the twin deficit hypothesis for Portugal, Ireland, Greece and Spain after allowing for the presence of structural breaks and asymmetric responses to shocks. Vamvoukas (1999) and Pantelidis et al. (2009) confirm the twin deficit hypothesis for Greece for the period 1960–2007, whereas evidence in favour of Ricardian equivalence for European Union member states is found by Papadogonas and Stournaras (2006).

Kosteletou (2013) provides some empirical support for the idea that fiscal policy can be used to eliminate external disequilibrium in the southern Eurozone countries after employing a panel data methodology for the period 1991- 2011. According to Kosteletou (2013) a deterioration in the government fiscal balance following an expansionary fiscal policy, and the opportunity to finance the increased expenditure requirements through international borrowing, increases the supply and stock of domestic bonds and deteriorates the current account.

Schmitz and Hagen (2009) investigate current account imbalances

and financial integration in the euro area focussing on net capital flows among the euro-area countries (including Greece, Spain and Portugal). They report that the elasticity with respect to per-capita incomes of net capital flows between euro area countries has increased implying greater financial integration since the introduction of the euro. The idea that Eurozone imbalances have been financed by movements of capital from surplus to deficit Eurozone countries is given further empirical support in the study of Chen et al. (2013) who also find that China has displaced exports from the Southern European economies, which combined with an appreciation of the Euro, has contributed to a deterioration of their current account deficits. Schmitz (2014) finds that countries that are close to a financial centre such as London and also part of a currency union are able to raise external finance more easily, his sample includes Greece, Spain and Portugal.

Turning to the current account sustainability of the Eurozone economies the literature is quite scarce. Chen (2011) has examined whether or not the current account deficits for several OECD economies can be characterized by a unit root process with regime switching, indicating that the current account of Portugal and Spain do not follow a sustainable path. In addition, after testing for the importance of nonlinearities to current account sustainability in European Economies, Chen (2014) reported that with the exception of Finland, Portugal and Spain the current account-GDP ratios of the European countries exhibit structural break nonlinearity and that Greece and Portugal (among other economies) do exhibit size nonlinearity.

3. The twin deficit hypothesis and the Feldstein Horioka puzzle

The starting point for understanding the twin deficit hypothesis is the national income identity for a small open economy, which depicts that national income is the sum of domestic and foreign expenditure on the goods and services produced in the domestic economy. The national income identity is given by:

$$Y = C + I + G + X - M \tag{1}$$

where Y stands for national income, C for private consumption, I for national investment, G for government expenditure, X for exports and M for imports.

The difference between exports of goods and services and imports of goods and services gives the current account balance (CA)

$$CA = X - M \tag{2}$$

Eq. (1) implies that the current account is also equal to the difference between national income and domestic residents' spending, that is:

$$Y - (C + I + G) = CA \tag{3}$$

A country will have a current account deficit if it is consuming more than it is producing and it will need to finance this by net capital inflows from abroad.

Let S stand for national savings defined as $S = Y - C - G$. Eq. (3) can be written as:

$$S - I = CA \tag{4}$$

The above equation highlights the fact that the current account is equal to the difference between national savings and national investment.

Following Feldstein and Horioka (1980) the relationship between national savings and national investment has been widely explored based on the following regression equation[3]:

---

[2] For more information about the advantages of the ARDL methodology for testing co-integration see Section 5.

[3] Feldstein and Horioka report evidence against world capital mobility on OECD economies and in favour of a strong correlation between savings and investment for the countries under investigation. For an interpretation of the Feldstein and Horioka puzzle for EU member states see Aristovnik and Djurić (2010).