Is the European debt crisis a mere balance of payments crisis?

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ABSTRACT

This paper is interested in linking formally external disequilibrium to the sovereign debt crisis which the EMU is experiencing since 2009. Relying on the CHEER approach that connects the goods market to the capital market, we show that when a country belonging to a monetary union faces external disequilibrium relative to its main partner, the corresponding interest rate differential increases. Moreover, when these imbalances are persistent, it may trigger a balance of payments crisis. Our findings indicate that this phenomenon seems to be at play for the European countries under international assistance.

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1. Introduction

Despite the vast literature on Optimum Currency Areas (OCA) that emerged in the line of Mundell's (1961) seminal paper, there is still a long way to go in order to fully understand all the mechanisms, and apprehend all the stakes, raised by the formation of a currency union. The current European debt crisis constitutes an example of such complexity. What was seen at the very beginning as a mere slippage in public finances due to the lack of stringency from peripheral countries accounting for less than 10% of the Eurozone GDP, is turning now into a severe sovereign crisis challenging the grounds of a political and economical constructions that took more than half a century to build.

Since it is always difficult to analyze a crisis on the spot, the likely roots of interest rate differentials in EMU are still an open question. On the one hand, structural economic factors, such as the high debt ratios relative to GDP, the large deficits and the low growth expectations, have triggered the mistrust of markets. On the other hand, political factors, like the fuzzy management of EMU, have strengthen this mistrust. One may however wonder to which extent these former economic factors are not second round effects traducing more global structural imbalances in the specific context of currency areas. In other words, the sovereign crisis may actually be a typical form of balance of payments crisis when parities are irrevocably fixed.

Much before the general model developed by Krugman (1979) that defines the balance of payments crisis as the inability for a government to defend a fixed parity due to the constrains of its actions, the

pioneering theorists of OCA (Fleming, 1971; Kenen, 1969; McKinnon, 1963; Mundell, 1961) have widely discussed the problem inside the single currency framework. According to them, money is an economic tool that plays a central part in the absorption of economic disequilibria (such as loss of competitiveness, unemployment) for an independent nation. However, when several countries decide to relinquish their own currency in order to form a monetary union, they also drop the chance to carry discretionary monetary policies to solve possible internal but also external imbalances. This strand of literature highlights that there is a "trade-off" between the homogeneity of the participating countries and the existence of real adjustment mechanisms inside the zone. Whether or not the union is made of highly similar members so that asymmetric shocks (such as imbalances between members) are avoided, either there are enough real adjustments mechanisms between members that allow to cope with asymmetric shocks or not.

When there is a lack of homogeneity and real adjustments, monetary union is non-optimal: the fixed exchange rate regime that also implies a "one-size-fits-all" monetary policy is not the adequate regime to ensure both internal and external equilibrium. EMU seems to suffer from these two shortcomings. First, there is a strong heterogeneity in terms of income per capita, specialization patterns, or economic institutions (Carlin, 2011). Second, labor mobility between participants, that constitutes the principal mechanism of real adjustment, is very low, lower than in long-lived currency unions such the United States (OECD, 1999). Hence EMU members may be subject to the occurrence of external disequilibrium relative to their currency partners (*i.e.* EMU may experience internal disequilibrium).

While there exists a wide literature dealing with external imbalances, especially concerning the US (Cline, 2005, 2009), very few studies pay a special attention to the phenomenon inside EMU. Relying on the approach introduced by Chinn and Prasad (2003), that consists

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in estimating current accounts through a set of economic fundamentals, Barnes et al. (2010) evidence that the surpluses as well as the deficits respectively exhibited by Germany and the Netherlands on one hand, and Greece, Portugal and Spain on the other hand, are greater than those suggested by their models during the period 2004–2008. This supports the existence of external imbalances relative to the fundamental equilibrium. Based on the same methodology, Jaumotte and Sodsriwiboon (2010) reach similar results for Southern periphery in 2008.

In the context of price convergence inside EMU, Guerreiro and Mignon (2011), and Guerreiro et al. (2014) adopt a different approach: they apprehend the issue of external equilibrium by testing the PPP (Purchasing Power Parity) hypothesis for EMU countries with Germany as numeraire. As stated by Juselius (2003), a violation of PPP "*signals an imbalance in the goods market, which in the absence of trade barriers is likely to results in trade deficits*". Hence in a monetary union framework, a non respect of PPP can be assimilated to an external imbalance. Relying on the estimation of nonlinear threshold models, Guerreiro and Mignon (2011) find evidences of price convergence (PPP validation) for each member, except Finland, during the period 1970–2011. The convergence speeds, when controlled for a set of competitiveness indicators, appear however too high for Greece and Portugal, suggesting a loss of competitiveness for these two countries relative to Germany. Guerreiro et al. (2014) tackle the problem by using panels. They constitute four groups – EMU as a whole, its core, its Northern periphery, its Southern periphery – and test the PPP hypothesis on three sub-periods (1970–1987, 1987–1998, 1999–2011). If PPP is validated for the whole EMU and for the core countries for each period, it is violated for Northern periphery regardless the period, and for Southern periphery during the last period. Here again some asymmetries concerning external imbalances are pointed out.

The aim of this paper is to go further than the previous literature by linking the external disequilibrium to the surge of the interest rate differentials, demonstrating that i) the sovereign debt crisis finds its deep roots in real imbalances, and ii) this debt crisis is the special form taken by a balance of payments crisis when parities are irrevocably fixed. To this end, we rely on the CHEER (Capital enHanced Equilibrium Exchange Rate) approach introduced by Juselius (1991, 1995), Johansen and Juselius (1992), Camarero and Tamarit (1996), and MacDonald and Marsh (1997, 2004), that allows to test jointly the international parities, PPP and UIP (Uncovered Interest Parity), through a cointegrated VAR.

The remainder of the paper is organized as follows: Section 2 presents the theoretical framework. Section 3, describes the economic methodology and the data. Section 4 is dedicated to results and their corresponding comments. Finally, Section 5 concludes the article.

2. Theoretical backgrounds

2.1. Identifying external imbalances and linking them to interest rate differentials

To emphasize how external disequilibrium may induce a raise in the interest rate differentials, we adopt the CHEER approach that links the goods market, modeled by PPP, to the capital market, modeled by UIP. This method has been introduced by Juselius (1991, 1995) in order to face the poor empirical support for PPP as well as for UIP. According to her, supplementing PPP by UIP extends the analysis because statistically, it improves the specification of the sampling distribution of the data, and theoretically, it takes into account the eventual interactions between the goods and the capital markets. MacDonald and Marsh (1997) reinforce the theoretical background by showing that such a framework captures the Casselian view of PPP.

Following Guerreiro and Mignon (2011), and Guerreiro et al. (2014), we consider that PPP theory is a fair concept to identify external imbalances. For Breuer (1994), the PPP concept developed by Cassel (1922) implies that there are some restoring forces driving the nominal exchange rate between two countries to a ratio that ensures the equalization of their real exchange rates. This ratio warrants the same purchasing power of the two currencies when these last are converted into the same measure unit. Formally we get (in the absolute form of PPP):

$$e_t = p_t - p_t^* \tag{1}$$

where e_t is the log of the spot exchange rate, and p_t and p_t^* respectively denote the log of the domestic and foreign price levels. However, and excluding the assumptions relative to the similarity of tastes and technologies, strong restrictions are required for PPP to hold. The most important are surely the absence of trade barriers preventing international market clearing, and also the external balance of economies.[1] Indeed when there are trade deficits or fiscal imbalances, deviations to PPP occur. Reversing the reasoning, a violation of PPP indicates that one or both these conditions are not fulfilled.

UIP is the interplay of PPP on the capital market. This theory is often used by monetary models to determine the exchange rates, but, unlike PPP, it is a forward rather than a backward market clearing mechanism, and adjustments are thought to be much faster than in goods market (Camarero and Tamarit, 1996). UIP states that the interest differential between two countries is equal to the change in parities expected between two countries as described in Eq. (2):

$$E_t(\Delta e_{t+1}) = i_t - i_t^* \tag{2}$$

where $E_t(\Delta e_{t+1})$ is the expected exchange-rate change for $t+1$, i_t and i_t^* are respectively the domestic and foreign interest rates. According to Juselius (1995), PPP and UIP can be linked through the expected exchange rate. Turning back to PPP, when the forecast horizon grows, the principal determinant of exchange rates expectation is the PPP deviation:

$$E_t(e_{t+1}) = p_t - p_t^* \tag{3}$$

with $E_t(e_{t+1})$ the expected exchange rate. Then, plugging Eq. (3) into Eq. (2) it comes:

$$p_t - p_t^* - e_t = i_t - i_t^*. \tag{4}$$

Eq. (4), which links the capital market to the goods market, is an enhanced version of PPP and UIP because it allows disequilibrium on goods market to be balanced by disequilibrium on capital market and *vise versa*.

2.2. The special case of monetary unions

If we assume now that the two countries under study form a monetary union, two new aspects affecting the form and the interpretation of our relations have to be highlighted. The first one is the absence of trade barriers. As theorized by Balassa (1961), a monetary union is the final stage of an economic integration. As such it intervenes when trade barriers are removed. It is important when interpreting PPP: inside a currency area, a violation of PPP traduces in fact the presence of external imbalances between two participating members. The second feature is the fixity of parities. It implies that the nominal exchange rate (in log) e_t is equal to 0, which will modify both PPP and UIP relations.

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[1] Note that Cassel advances other conditions as the absence of speculation or the non intervention of Central Banks.