Current account imbalances: A new approach to assess external debt sustainability

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**A B S T R A C T**

The aim of this paper is to analyze the external debt of three Euro area economies, Italy, Spain, and Germany. To study the effect of debt on the investment-consumption dynamics in those countries, we first discuss the causes, sources, and adjustment processes of current account deficits in industrialized economies, with a particular focus on the Eurozone member states. We then introduce new empirical measures of sustainability. Instead of using the common measure of external debt over GDP, we use debt over assets. To study the dynamics of external debt sustainability we use an intertemporal model of finite time horizon, which we numerically solve through Non-linear Model Predictive Control (NMPC) method. Using our numerical solution method, we provide a calibration of the external debt sustainability for Italy, Spain, and Germany. In the calibration of our model for those countries we also measure sustainability by the debt to asset ratio and show that the periphery economies moved toward a slow moving debt crisis, whereas Germany moved into a stable environment. Yet, the latter is likely to be affected by the former in the long run.

1. Introduction

During the first phases of the economic recession in Europe after 2007–2008, policymakers focused more on reducing domestic debt through fiscal tightening, while little attention has been given to external debt and current account imbalances\textsuperscript{1}. Yet, much research points out that among the factors leading to the sovereign debt crisis in Europe is the “excessive” external liabilities of some particular countries\textsuperscript{2}. Since the establishment of the European Economic and Monetary Union (EMU hereafter), a number of member countries, particularly the periphery economies, experienced widening deficits in their current accounts. The growing reliance on external financing raised sharply the net external liabilities of some debtor countries, reaching levels close to or above 100 percent of GDP on the onset of the economic recession\textsuperscript{3}.

Faced with significantly rising levels of current account deficits, borrowing countries became increasingly concerned over the sustainability of their external liabilities positions. With increasing defaults risk, highly indebted countries are forced to pay higher interest rates and risk premiums. Italy and Spain are prime examples of European periphery countries which experienced large ‘persistent’ current account deficits (as percentage of GDP), high levels of external debt and rising risk premia and credit spreads. A crisis environment has been developed that has been magnified by the 2007–2008 worldwide melting down. The aim of this paper is to study the sustainability of current account imbalances among Euro-member countries, with a particular focus on Italy and Spain as two important cases.

There is already a well-established empirical literature on current account imbalances, particularly dealing with the Euro area. In this paper, we are trying to put forward a new measure of debt sustainability and a new method will be applied to evaluate the model at hand. Instead of using the debt-to-GDP ratio as a variable for assessing debt sustainability, we will use debt over total wealth of the economy. In some sense, we follow here the corporate finance literature that measures indebtedness as a stock (liability) over another stock (assets), and not a stock (debt) over a flow (GDP). Usually, as to sovereign debt, lenders rely on GDP because it is a measure of the nation’s income and hence a measure of the economies’ ability to service their debt.

Measuring the country’s wealth can be insightful, mostly because of the following reasons: private wealth relative to national income in

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\textsuperscript{1} External imbalances of the Eurozone members had attracted little attention, partly because in the past any structural crisis of balance of payments was solved through readjustments in the Exchange Rate Mechanism of the European Monetary System. It was believed that the current external crisis would be the same as previous ones.

\textsuperscript{2} See Stein (2012).

\textsuperscript{3} See Shin (2011).

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Europe has witnessed quite an increase in recent years. This gave rise to proposals to make capital income and inheritance taxation again central policy tools for reducing inequality and to provide the public spending with resources. Measuring capital (produced assets) is essential to measuring the productive capacity of an economy. From a theoretical standpoint, it makes more sense to have a measure of debt sustainability where both the numerator and the denominator are essential to measuring the productive capacity of an economy. From spending with resources. Measuring capital is central policy tools for reducing inequality and to provide the public

The paper thus analyzes and contrasts the sustainability of external debt both in Italy and Spain, and contrasting it to Germany, by using the above mentioned concept of debt over wealth. We hereby will show how the sovereign debt is related to external debt. In terms of a new methodological approach, we apply an alternative to the standard HJB method which relies on infinite horizon. The alternative method proposed here is known as Non-linear Model Predictive Control (NMPC). It allows one to study and solve intertemporal models for a finite decision horizon, whereas the HJB solution method is typically based on an infinite horizon approach.

2. Sources, adjustment process and sustainability of current account imbalances

Current account imbalances may be driven by several factors. Those imbalances are not necessarily an undesirable outcome, and may be part of a convergence process (Blanchard and Milesi-Ferretti, 2011). Current account imbalances can naturally emerge from differences in the saving behavior, in the rate of return on capital, or in the degree of risk or liquidity of different assets. Other factors, however, such as the lack of appropriate financial regulation or low domestic income growth might create imbalances with adverse consequences on the macroeconomy.

Most of the literature analyzing the growing external imbalances of Euro debtor countries focused on two principal explanations. The first one is the financial integration and the expectations of convergence within the Euro area. Indeed, the establishment of the EMU along with policy coordination in the financial sector and the integration of goods market helped both stimulate capital flows and reduced transaction costs as well as led to the integration of the European bond markets and banking system (Kalemli-Ozcan, Papaioannoub and Peydró, 2010).

The alleviation of transaction costs on international financial operations should in principle result in net capital inflows from richer economies to countries at a less advanced stage of development. The latter will eventually incur higher current account deficits. Stronger growth prospects and declining borrowing constraints for households and firms would increase domestic investment and/or decrease savings and consequently add to more deficits. As income or productivity in tradable sectors increase, higher consumption of non-tradable goods would result in an equilibrium appreciation of the real exchange rate.

Spain was experiencing these dynamics before the eruption of the financial crisis. Driven by growth and low interest rates, the housing market in Spain experienced a noticeable expansion. As a result, private investment exceeded private saving, the relative price of non-tradables rose, which in turn appreciated the real exchange rate, and thereby accelerated the current account deficit and external debt of the Spanish economy. It is interesting to note, however, that although the debtor countries are all members of a single union, they have not all exhibited the expected evolution in their saving-investment balances, as is the case with Spain, Greece and also Portugal.

The second explanation is related to wage/price rigidities and over-confidence in the borrowing countries. Periphery countries, like Portugal, Greece and Spain have not experienced a marked growth in productivity. Absorption exceeded production, and the real effective exchange rate appreciated. However, fixed nominal exchange rates among EMU countries, along with the mentioned monetary arrangements, negatively affected the adjustment of relative prices and real wages. As domestic prices and unit labor costs rose relative to the core economies in the Eurozone, Portugal, Greece, and Spain lost competitiveness. Their current account deficits worsened in consequence. In the case of Spain, the availability of cheap credits in international financial markets had facilitated the unsustainable growth of the non-tradable construction sector. When housing prices fell, the banks – which financed the housing sector and experienced heavy loan losses – were unable to repay their loans to international lenders (Blanchard, 2006; Giavazzi and Spaventa, 2010; IMF, 2011).

More recent research suggests however that the increase in current account deficit in peripheral economies is driven more by the surge in domestic demand, led by the credit boom and the financial cycle, than by the loss of price competitiveness. Unit labor costs increase is not seen as a major cause but rather as a byproduct of domestic demand growth (Wyplosz, 2013; Diaz Sanchez and Varoudakis, 2013; Comunale and Hessel 2014). Others stress on the differences in structural factors as the leading cause to current account imbalances; namely production, employment, and trade structures. For instance, Germany’s manufacturing sector is of high-value-added, higher-tech type; while peripheral European economies’ production process is lower-tech, lower value-added type, and often focus on non-tradable activities (Storm and Naastepad 2015). Such difference is believed to have created an unequal relationship between the core and the periphery economies. The introduction of the common currency as well as the single interest rate policy enacted by the ECB did only exacerbate this already imbalanced relationship.

As both Italy and Spain are regarded to be highly indebted countries, what would then be the likely effects of a current account adjustment process? The features of current account reversals in industrial countries are common; they usually tend to occur around 5% to GDP, they implicate currency depreciation and a decrease in GDP growth (Freund and Warnock, 2007). The larger the deficits the longer it takes to rebalance them, and during recovery the growth of income is fairly sluggish. The size of the deficit might represent certain risks in the short-term, particularly if there is a sudden stop in the funding markets. Large and sudden capital flow reversals have serious consequences on output, asset prices and unemployment (Freund and Warnock, 2007). If the size of the deficit is strongly related to the severity of adjustment, this relationship is less evident with regards the persistence of the deficits. In general, persistent-deficit countries are characterized by a low saving rate, where often consumption is financed through a credit boom.

Given that Italy and Spain are both members of a monetary union, and have no own monetary and exchange rate policies to help adjustments, is there a difference to stand-alone countries vis-à-vis the adjustment process? The nature of exchange rate regimes and their own monetary policy is believed to play a significant role in determining the degree current account balances revert to their mean values. Stand-alone countries with floating exchange rates regimes may have been found to experience faster adjustment in their current account, mainly because they have the highest level of exchange rate flexibility – possibly aided by monetary policy actions – while economies that are members of a monetary union (e.g. the Eurozone) have more persistent

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4 See for instance Piketty et al. (2011) their study shows a significant increase in private wealth in contrast to public wealth in many EU states as well as in the US.
5 This refers to the Hamiltonian–Jacoby–Bellman Method
6 The creation of a single currency switched off the option for national currency devaluations, and by that a traditional adjustment mechanism between national economies was eliminated.
7 This is at least the view adopted by the standard literature.
8 The standard Balassa–Samuelson effect.
9 See Stein (2012).
10 See Chen et al. (2012).
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