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The Role of Gross Capital Flows in the Great Financial Crisis. The Case of Spain.

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Abstract
What was the influence, if any, of gross international capital flows on credit booms that could be observed in some countries undergoing a real estate boom before the Great Financial Crisis? What was the main driver for external debt over the late 1990s and 2007 in countries that later experienced a protracted recession? Was it current account deficits or, rather, did bank credit cause growing external debt? These are the questions this paper dwells upon and we focus on the recent Spanish experience as it is a representative example of these issues. The distinction between gross and net capital flows plays a pivotal role in the discussion.
JEL-Classification: E44, F41, F45, G15

Keywords: gross capital flows, bank credit, Balance of payments crisis, banks refinancing loans, Spain

Introduction

There is a widespread consensus that the crisis in the Euro Zone (hereafter, EZ) is a balance-of-payments (BoP) problem: the consequence of too much cross-border borrowing and lending since the launch of the euro, driven by current account imbalances.

Against the backdrop of net flows, recently some researchers have shifted their research interest to gross capital flows, arguing that the Great Financial Crisis is another episode of financial instability that cannot be correctly understood in the light of net flows that cancel one another out. Conversely, it is necessary to investigate the financial conditions in troubled countries, greatly affected by gross capital flows.

In this paper, we focus on the Spanish economy and consider the responsibility of banks and their indebtedness to the rest of the world. The justification of our choice is that Spain experienced rocketing private indebtedness between 1999 and 2007, much of it due to a real estate bubble, funded with domestic bank debt that was refinanced abroad. Spain, like Ireland, has shown a really large elasticity of bank credit (Borio and Disyatat, 2011) and none of these countries can be accused of fiscal profligacy in the run to debt.

We study the relationship between bank credit for households and corporations and gross debt inflows going to banks. Next, we investigate how much of gross external debt is explained by banks borrowing in international markets and also the nature of debt in comparison to international assets held by the Spanish economy. Although we agree that the main cause of the crisis in Spain (and in the EZ) is too much debt, we hold that the main source of external indebtedness for the Spanish economy has not been the accumulated current account deficits, although they are fairly relevant, but rather banks' indebtedness to the rest of the world. A logical conclusion from this account, if we are correct, is that the measures adopted to rebalance the Spanish external sector required by creditor countries, whilst over-focused on CA imbalances, are detrimental to economic growth. Moreover, without the supervision and regulation of the banking sector, surveillance of CA balances will not prevent another crisis like the current one from happening again. It should be clear that we do not mean that CA imbalances are not important. What we hold is that they cannot provide sufficient information on how imbalances are financed, or about the risks of financial instability.

From this analysis, we conclude that the BoP crisis view is not correct, as Wray has pointed out (Wray, 2012a, 2012b).[1] Also, the endogenous money view has a strong explanatory power (banks need not collect deposits before they grant credit because they create deposits when they lend), but liability management deserves attention, because in credit booms deposits usually grow at a lower rate than credit.

Crisis caused by current account imbalances

There is a conventional, consensus view (e.g. Baldwin and Giavazzi, 2016) that holds that the current situation in the Euro Zone (hereafter, EZ) resembles a balance-of-payments crisis. The root cause of this mess lies in large amounts of external debt due to the accumulation of current account imbalances between the periphery and the core EZ countries from the onset of the euro to 2008.

In that view, the underlying reasons for accumulated external imbalances were an excessively low real interest rate for peripheral countries (Greece, Ireland, Portugal and Spain: GIPS hereafter) and the removal of barriers to financial capital movements within the EZ. This led to a strong domestic demand funded with foreign capital inflows, making GDP grow at high rates (Portugal is an exception), and a deterioration of the terms of trade because of relatively higher unit labour costs. A debt-led growth pattern in GIPS was matched with an export-led growth pattern in the EZ core, where the effects of the same monetary policy were not so expansive (Uxó *et al.* 2011, Hein, 2012, provide a heterodox account of the crisis using these terms).

[1] Lavoie, 2015 and De Grauwe, 2013, have added other arguments against this BoP view. See Febrero *et al.* 2016 for a review.

Increasing current account imbalances between the introduction of the euro and 2007 made the negative net international investment position (NIIP onwards, a measure of net external debt) to rise, roughly, to 100% GDP in GIPS. That net external debt was mirrored by a surplus position in core countries (for instance, Germany reached 26% GDP in 2007, and 49% in 2015).
With the fall of Lehman Brothers capital inflows ended, turning booms into busts, especially in countries that had experienced a real estate boom (Ireland and Spain). Governments took up the relay baton of spending and indebtedness (the transformation of private into public debt made the latter increase even further), burdening banks' balance sheets in their jurisdictions with public debt. The first Greek sovereign debt crisis gave rise to a sudden stop in the EZ (Merler and Pisani-Ferry, 2012). A sovereign debt crisis combined with a banking crisis followed a balance of payments crisis (Gros, 2015). Financial markets were fragmented, reflecting the solvency problems of national fiscal authorities which, in addition to their own budget imbalances, had to provide support to their respective troubled banking industries. Without a lender of last resort to governments, the risk of return to old currencies became apparent (e.g. Draghi, 2012) and, with it, the lack of access to funding in international financial markets. Without capital flowing from the core to the periphery, peripheral countries could not go on spending beyond their means, or settle debts when they matured and, hence, were forced to adopt painful rebalancing measures –mainly structural reforms, especially in the labour market, and fiscal consolidation– in exchange for some external financial assistance from the so-called Troika (Greece, Ireland and Portugal) or the European Stability Mechanism (Spain). The crisis in export-led countries, with a creditor NIIP, was not so hard, making it clear that foreign debt matters (Gros, *op.cit.*).
The ECB, through the TARGET2 system, combined with refinancing operations, avoided a liquidity crisis in the periphery. However, the doom-loop between sovereign debt and the banking crisis could only be broken once the ECB committed itself to buying unlimited amounts of public debt, through the so-called Outright Monetary Transactions (hereafter, OMT, in September 2012, substituting the former Securities Market Programme), requiring the acceptance of conditionality (structural reforms and fiscal consolidation) in order to avoid moral hazard for governments and banks in troubled countries. Unfortunately, the OMT and asset purchase programmes implemented by the ECB have not brought prosperity to the EZ.
Summing up. The origin of the current situation lies in the accumulation of current account deficits over a long period of time. And the solution requires shifting the driving engine for growth from domestic to external demand, to generate a surplus to fund the payment of external debt.

Current account imbalances or banking glut?

Some authors have set aside current account imbalances, giving more importance to the proactive behaviour of the banking system as the main cause of the crisis (e.g. Borio and Disyatat, 2011, 2015, use the term 'elasticity of credit,' whereas Shin, 2012, uses the term 'banking glut')[2]. Borio and Disyatat, 2011 point out that current account imbalances do not inform us about the role a country plays in international borrowing, lending and financial intermediation, about how investment spending is financed either from abroad or from within the country, or the impact that international financial flows have on domestic financial conditions. And one conclusion that they draw from this is that current account imbalances need not be the main determinant of the crisis.
Conversely, these authors suggest focusing on –or at least paying more attention to– gross capital flows (other authors sharing this view are Brunnermeier *et al*, 2012, Forbes and Warnock,

[2] Shin, 2012, uses the term "banking glut" as opposed to the "saving glut" hypothesis to reject current account imbalances as the source of the Great Financial Crisis in the US. In his view, European banks affected the bank credit conditions in the US by borrowing in wholesale US money markets (gross capital outflows) to fund the purchase of mortgage-backed securities (gross capital inflows) from the US shadow

2012, Johnson, 2009, Obstfeld, 2012, Rey, 2013, and Shin, 2012, amongst others). In essence, the argument in favour of gross flows can be developed in three strands. Firstly, saving and financing should not be confused: on the one hand, saving is simply non-consumed output, a national accounts concept. On the other hand, financing is the provision of means of payments to purchase goods or services. Both are different concepts and in a monetary economy they need not be related (see examples in Borio and Disyatat, 2015). This is even clearer if we assume the endogenous money view, which holds that banks can create means of payments (i.e. bank deposits) when they grant credit.

Secondly, the exposure to a sudden stop lies in gross flows, not current account deficits.[3] To put it simply, we can follow Al-Saffar *et al.*, 2013, p. 5. Assuming away changes in the holding of international reserves, the following expression holds:

$$S - I = CAD = \Delta D + \Delta E$$

That is, when savings (S) are lower than investment (I) there is a current account deficit (CAD) that has to be matched with a surplus in the financial account; this means that the country under consideration has to borrow, increasing its indebtedness (ΔD) or selling equity (ΔE). However, it may be that a country with a current account in equilibrium (CAD = 0) becomes engaged in borrowing from abroad (ΔD) to end up funding equity investment abroad (-ΔE).

In such a situation, this country increases its exposure to a sudden stop as it becomes more and indebted to the rest of the world when there is a mismatch between debt (inflows) and equity (outflows), debtors and equity holders are different agents, assets and liabilities have different maturity or are denominated in different currencies.

And thirdly, there seems to be a high correlation between gross capital (in-)flows, bank credit and asset prices (Borio *et al.* 2011, Advjiev *et al.* 2012, Al-Saffar *et al*, 2013., Brunnermeier *et al.* 2012, Lane and McQuade, 2013, Rey, 2013). Further, credit growth seems to be a good predictor of GDP declines (Taylor and Schularick, 2012, Jordà *et al.* 2012). Current account imbalances seem to be more a consequence of a bank credit boom than a main cause of the crisis.

Expected large profits (because of a real estate boom, a positive shock in new technologies, or some other reason) may unleash a feedback process linking rising asset prices, increasing bank credit, higher GDP growth and larger gross capital inflows (and outflows). As Minsky, 1992, notes, after a protracted period of tranquillity, an economy shifts from a stable to an unstable financial regime. Although banks can still create money *ex nihilo* to meet credit worthy borrowers' demand for credit –as the endogenous money view holds– gross capital flows to some extent condition banks' ability to do so.

As Borio and Disyatat, 2011, conclude, it is convenient to follow the gross flows in order to become familiar with their influence on credit conditions. This, however, does not mean that current account imbalances should be set aside. As Obstfeld, 2012, p. 32 points out: "A current account deficit creates a basic vulnerability to a sudden stop in financial inflows, but […] the

banking system. US capital inflows came from the EZ, which had a roughly balanced current account and the UK, which was a deficit country (see also Borio and Disyatat, 2011).

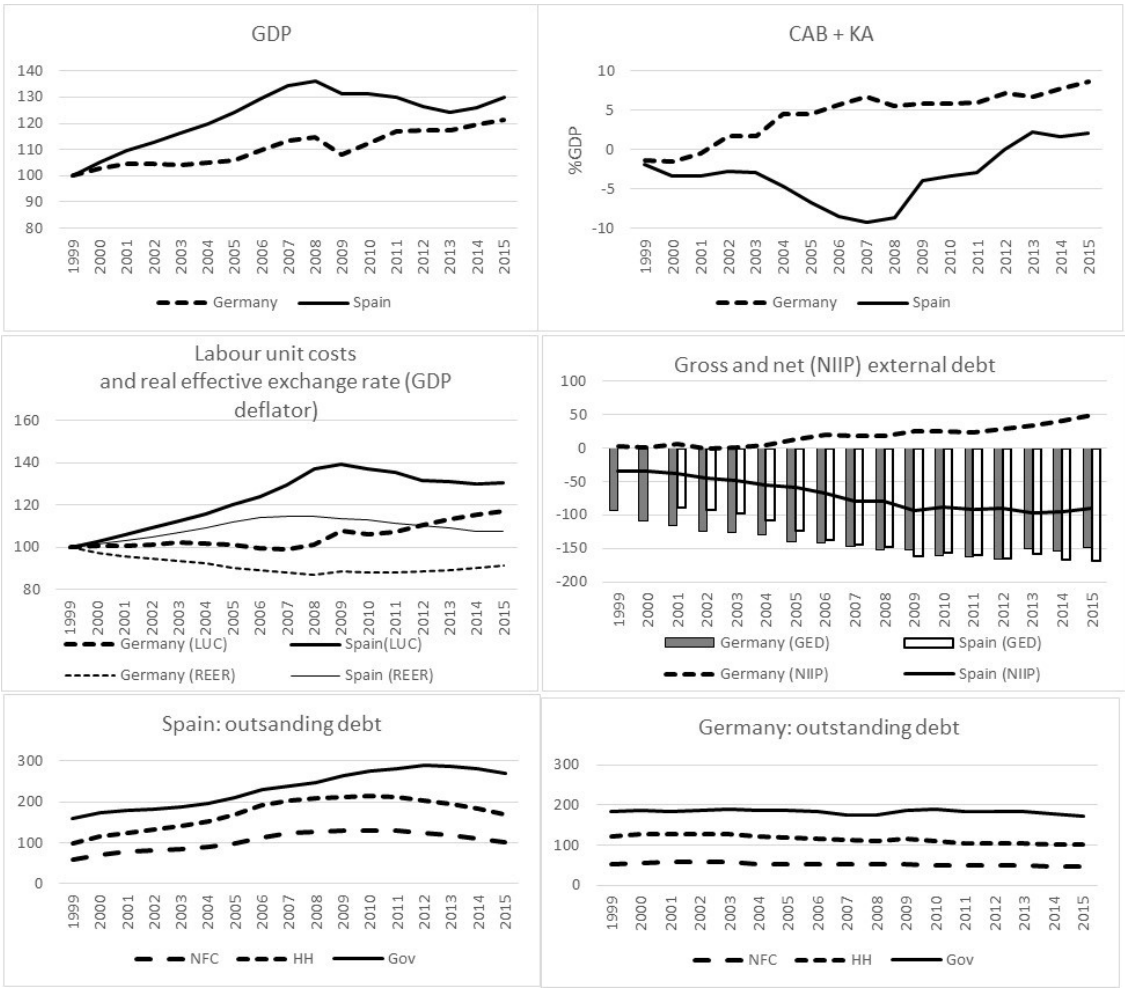
[3] As Obstfeld, *op.cit.*, p. 17 states: "A focus on net positions does not recognize that my fellow citizens' assets are not available to pay off my debts […] It is thus *gross* exposures that would seem to carry the risks of financial instability […] regardless of whether the country has a current account deficit or surplus, or is a net international creditor or debtor". Johnson, *op.cit.*, p. 1 states: "It is not the net external imbalances (or net financial flows) of the surplus countries that move across borders and must be intermediated by the global financial sector; it is the gross financial flows of all countries that require this. Moreover, it is the gross stocks of assets held cross-border (far larger than any one year's gross flows) that must be managed for risk". Shin, 2012, p. 9, uses similar terms: "The current account may not be as informative about overall credit conditions as gross capital flows, especially gross capital flows generated by the banking sector".

nature of gross foreign asset and liability positions will be a critical determinant of the *denouement*".

The crisis in the EZ revisited. Current accounts or wrong bank behaviour?

The following set of figures can help the reader to understand the current situation, taking Spain as a representative for the EZ periphery and Germany for the core.

Figure 1: Spain and Germany since the onset of the euro.



Source 1: ECB, Eurostat, AMECO and authors' calculations.

The bottom-left figure shows that private indebtedness in Spain (mostly to banks) doubled in less than 10 years, leading to rather marked GDP growth (upper-left figure) until 2008, driven by the real estate sector. Besides rocketing unit labour costs (and appreciating real effective exchange rate –REER–, middle-left), the strong GDP growth gave rise to a current account deficit (plus the capital balance) amounting to almost 10% GDP (upper-right) in 2007. Its accumulation led to a NIIP well above 90% GDP starting in 2009 (middle-right) and a gross external debt of around 160% GDP. Conversely, German indebtedness slightly decreased (bottom-right); GDP did not grow much until 2009, and was to a large extent driven by exports. Unit labour costs remained stable for one decade or so, with falling REER; its current account balance (upper-right) was in surplus for the whole period under consideration and, although gross external debt evolved in parallel with the Spanish equivalent, its NIIP was in surplus.

After the Great Recession of 2008, the Spanish GDP declined, and has yet to recover the level of 2007. Public debt increased allowing private debt to fall. Labour unit costs declined and, with the fall of GDP, CAB shifted to surplus. However, external indebtedness still remains high. By

contrast, German GDP recovered faster because of its ability to find new markets for its exports (emerging market economies and US). Its labour costs increased though this is more of a statistical illusion (productivity appeared to fall because of the way of measuring employment).

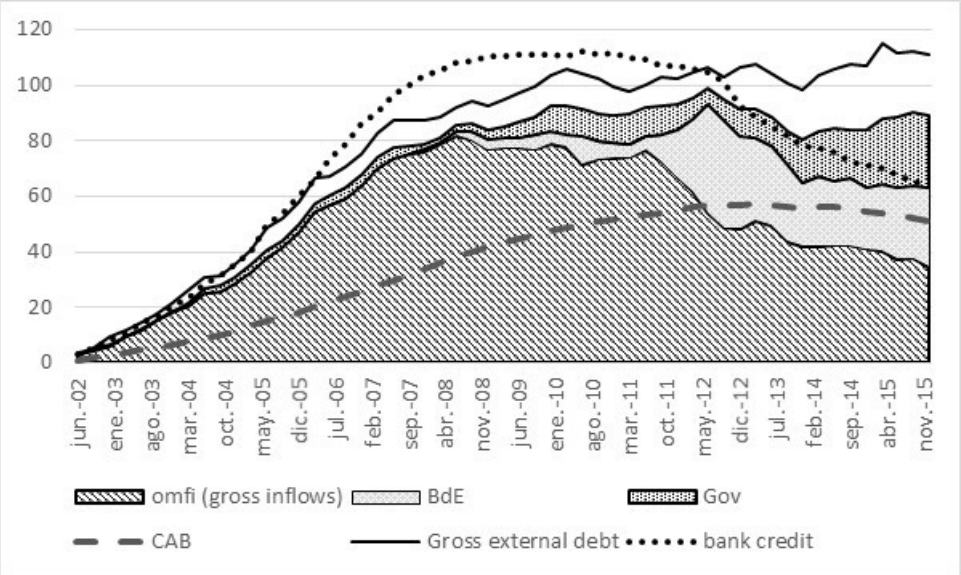
A closer look at the Spanish economy reveals that that there was a deep crisis in two waves, the first in 2008/09 and the second in 2011/13. Regarding the first wave, the crisis can be understood as the consequence of the accumulation of three imbalances: too much private indebtedness to domestic banks, a real estate sector that became too big for its boots, and too much external debt, mostly because of the refinancing of mortgage loans in international markets, and less because of current account deficit (see below). These imbalances led to three consequences: a lack of effective demand because of forced saving to settle the debt servicing, corresponding to a large volume of debt (Turner, 2016, calls it a debt overhang); a falling GDP as the construction sector was returning to *normal* levels; and a lack of credit because of a banking crisis at two levels: on the one hand, the rate of non-performing loans (mostly related to real estate activities) begun to rise as GDP declined and unemployment rose, shrinking bank equity; on the other hand, Spanish banks heavily indebted to the rest of the world experienced increasingly harder access to funding in financial markets, because of an increasing borrower risk. The collapse of American toxic assets worsened the situation further still.

This first wave was shortly lived because an expansive fiscal policy (following IMF and G-20 recommendations) offset the effects of the bursting real estate bubble. However, the first Greek sovereign crisis in May 2010 led to a U-turn in fiscal policy, from expansion to austerity (in 2009, the Spanish public deficit was 11% GDP whilst two years before, the budget had been in surplus), and a commitment was made to adopt structural reforms in the labour market, the pension system and in goods and services markets. This dragged the Spanish economy into a second crisis, from 2011 to 2013.

The root cause of the crisis in Spain lies in the large amount of private debt and how banks refinanced it (i.e. a banking glut) and, to a lesser extent, due to current account imbalances. As we show below, there is indebtedness of resident agents to banks on the one hand, and indebtedness of resident banks to the rest of the world, on the other hand. Once external debt reaches a threshold, there is a sudden stop and a debt-led growth pattern becomes unsustainable. Fiscal austerity-cum-wage devaluation measures were the consequence of creditor nations' pressure to raise the debtor's ability to pay back their banks, in the context of a flawed currency union (Lavoie, 2015). However, the problem was that the elasticity of bank credit was too high, so current account deficits are not so much to blame. Actually, we hold that current account deficits were more the consequence of an excess bank credit than a cause of the crisis.

The following figure illustrates this issue:

Figure 2: Accumulated gross external debt, gross external debt of banks (omfi), Banco de España (BdE), Government. Accumulated CAB deficit. % GDP. Spain. 2002-2015.



Source: BdE, INE and authors' calculations.

The Banco de España provides information on gross external debt from 2002 to the present. Between that year and June 2008 –before the fall of Lehman Brothers–, accumulated bank credit to non-financial corporations and households amounted to 108.1 percentage points of GDP, whilst gross external debt accounted for 91.8 percentage points of GDP. Both series are highly correlated until March 2007, when the real estate market begins to show some weakness; from then onwards, the growth of gross external debt slows down and bank credit follows suit with some delay. Gross external debt of monetary and financial institutions, excluding the Banco de España, reached 81.7% GDP in June 2008. The gap between gross external debt and external debt of monetary and financial institutions other than the Banco de España was covered roughly by external debt of non-financial corporations. Accumulated current account imbalances were 38% GDP in that time.

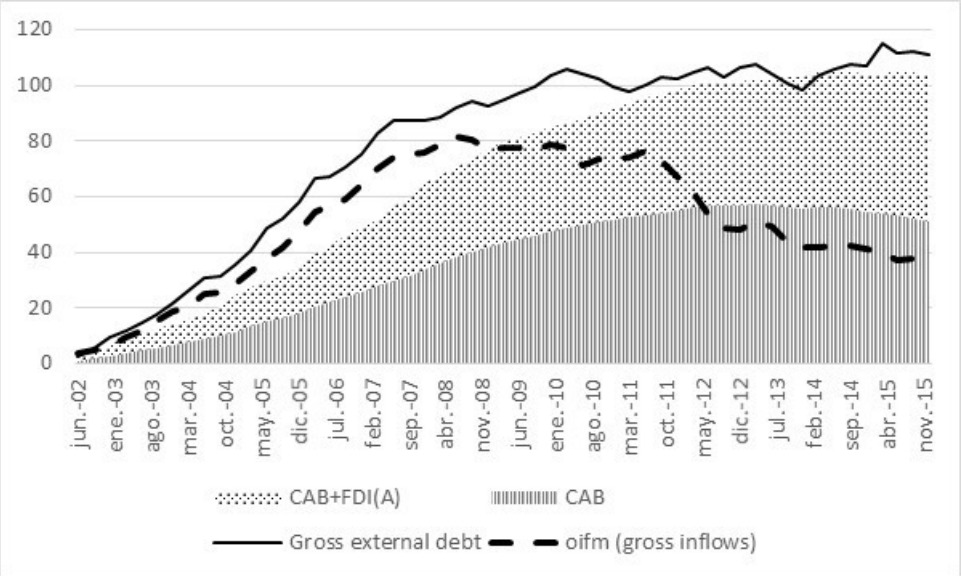
In our view, the figure above makes it clear that bank credit is the main driver of gross external indebtedness in the period 2002-2008 (the real estate bubble in Spain took place between 1997 and 2008). Banks refinanced a great deal of credit granted to private agents in international markets (roughly 90% of bank credit). And less than 45% of gross capital inflows to banks left the country to fund current account deficits.

Between 2008 and 2011 bank credit and banks' external debt remained roughly stable around 108% and 78% GDP, respectively. In the figure above, gross external debt shows a small increase (around 10 percentage points) due to public debt held by the rest of the world. In mid-2011, during the second Greek sovereign debt crisis, banks' gross external debt declines, but such movement is offset by an increasing indebtedness of the Banco de España to the Eurosystem, through the so-called TARGET2 system. And when the Outright Monetary Transactions were announced by Draghi in mid-2012, TARGET2 imbalances declined and the government's external debt rose. With the second wave of the crisis, outstanding bank credit starts to decline, but gross external debt shows a slightly growing trend. Regarding the accumulated current account deficit, it reached 57% GDP in March 2013 and in late 2015 it was 50% GDP. In the whole period it has not explained much more than 50% of external debt, markedly less than the banks' external debt.

And if 50% of gross capital inflows to banks leave through current account deficits, what happens with the remaining amount? Since the late 1990s, some Spanish corporations (especially two banks, a telecommunications corporation and some electric power companies) have expanded overseas, mostly to Latin America, but also to other European countries. This Spanish foreign

direct investment, we believe, explains where the rest of gross capital inflows have gone. The following figure illustrates this fact:

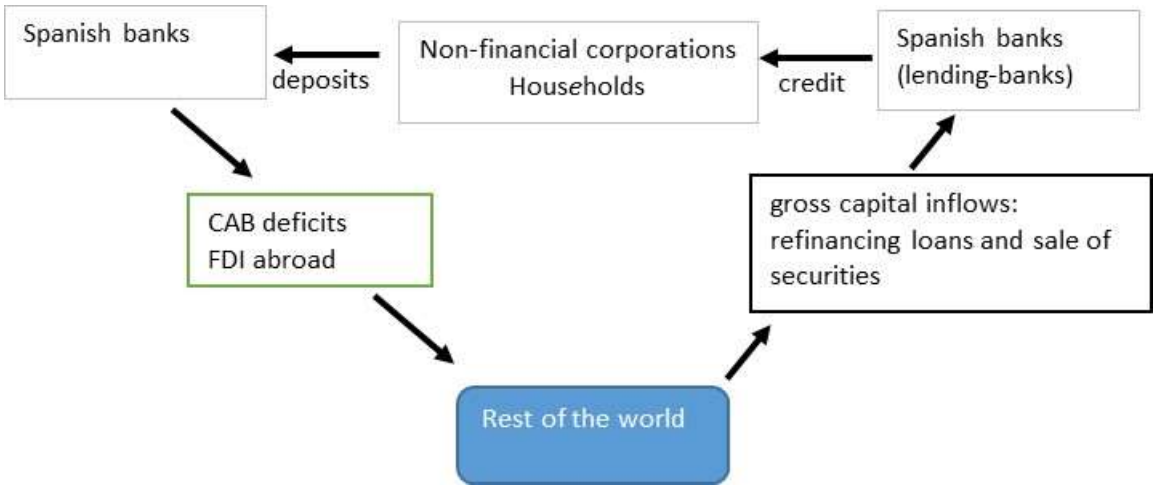
Figure 3: Gross external debt, accumulated CAB deficits, FDI abroad and gross capital inflows to banks. Spain. % GDP. 2002 – 2015.



Source: BdE, INE and authors' calculations.

We explain this situation with the help of the following figure:

Figure 4: International monetary circuit.



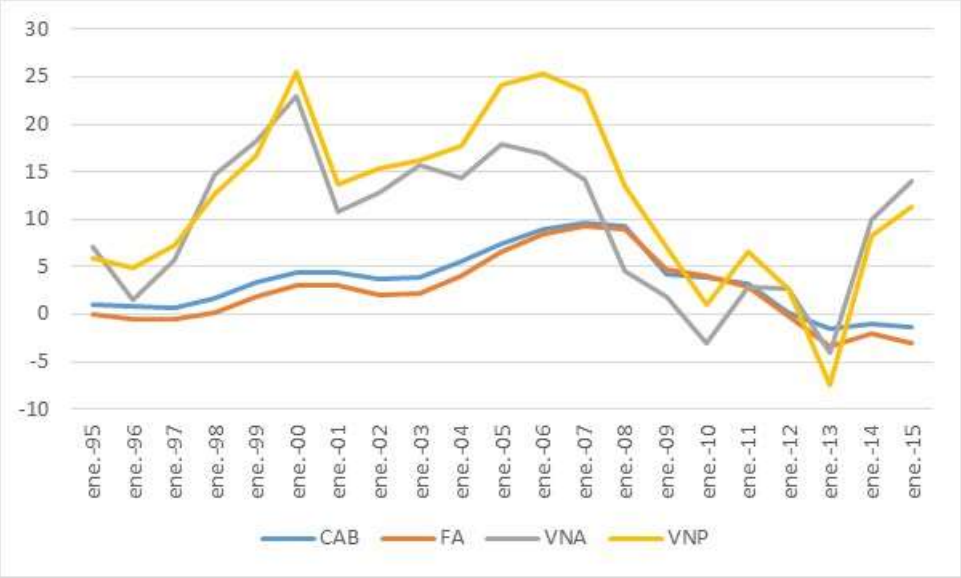
The circuit begins in the upper right hand corner: with the launch of the euro, using very low interest rates, Spanish banks eased credit requirements, increasing the amount of granted credit markedly. This can be understood following the endogenous money view, where credits make deposits. Next, these deposits flowed from "lending banks" to depositor banks, as borrowers made payments after having secured loans, giving rise to a transfer of reserves. Then, those "lending banks" refinanced their granted loans in international markets (the EZ interbank money market or through a securitization process) that were very liquid. And depositor banks lent their excess reserves to fund CAB deficits and also cross-border FDI.

After the Great Financial Crisis, with the collapse of international financial markets, Spanish banks ceased granting credit for two main reasons: firstly, creditworthy borrowers vanish because of the deterioration of the macroeconomic environment, and secondly, with the collapse of the interbank money market, banks prefer to accumulate reserves to avoid the stigma effect of borrowing from the central bank.

Further information from gross capital flows.

The figure below shows the evolution of CAB, FA and gross capital outflows and inflows, as a percentage of GDP, for the Spanish economy over 1995-2015. We call the reader's attention to the following facts: (i) gross capital flows were much higher than net flows between 1996 and 2008 (a growing trend could be observed at the international level since the early 1990s: Broner *et al*., 2013); (ii) until 2008, the volume of financial capital outflows (net change of assets) was much higher than the current account deficit (financing needs) which, in turn, had reached roughly 10% GDP in late 2007; (iii) gross outflows and inflows are procyclical and more volatile than net flows.

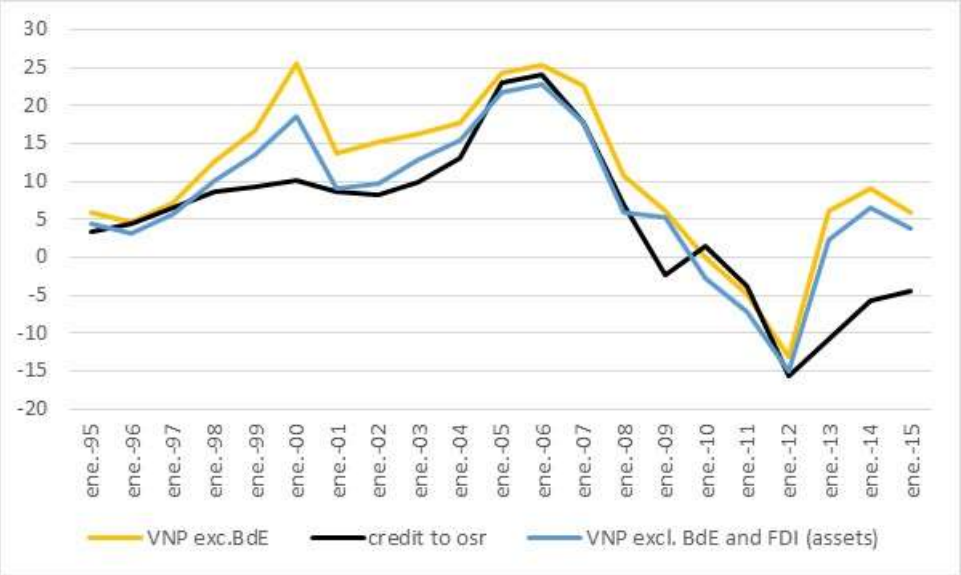
Figure 5: CAB, Financial account and gross financial outflows and inflows. Spain. 1995-2015. %GDP.



Source: BdE, INE and authors' calculations. N.B. VNA is net incurrence of assets (which is taken as gross outflows) and VNP is net incurrence of liabilities (gross inflows), which includes inflows to the Banco de España. FA stands for the financial account. Positive values of CAB mean a deficit.

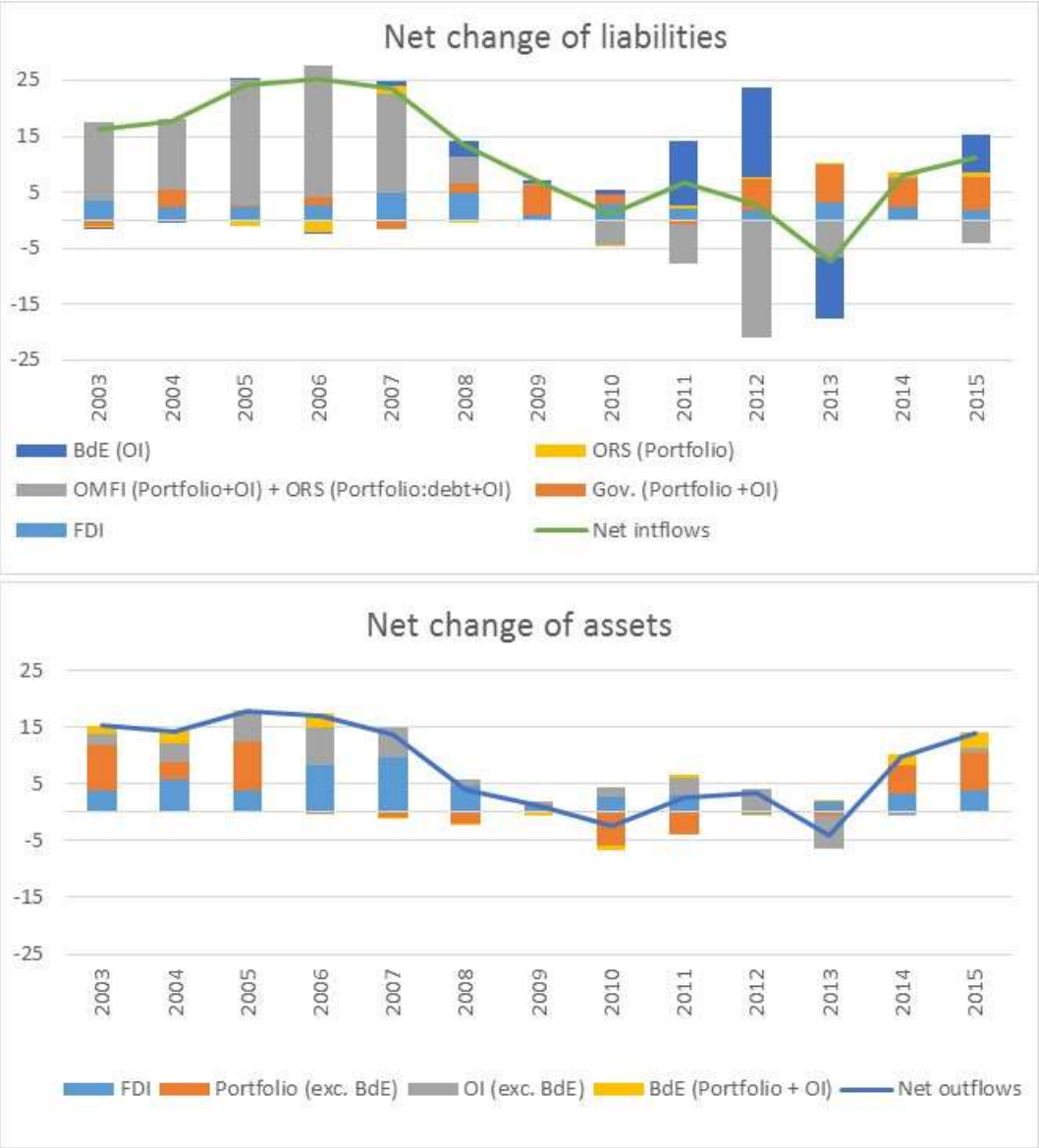
If we exclude the Banco de España from VNP, the correlation between gross capital inflows and bank credit to private non-financial residents is rather high (0.86). If we also subtract foreign direct investment abroad, the correlation coefficient rises to 0.88.

Figure 6: Gross capital inflows (VNP) and bank credit to non-financial corporations and households. Spain. 1995-2015. % GDP.



Source: BdE, INE and authors' calculations. N.B. credit to osr is bank credit to resident private non-financial sectors.

Figure 7: Capital inflows and outflows. Spain. 2003-2015. %GDP.



Source: BdE, INE and authors' calculations. N.B. OI = other investment; OMFI = other monetary and financial institutions; ORS = other resident sectors (corporations and households).

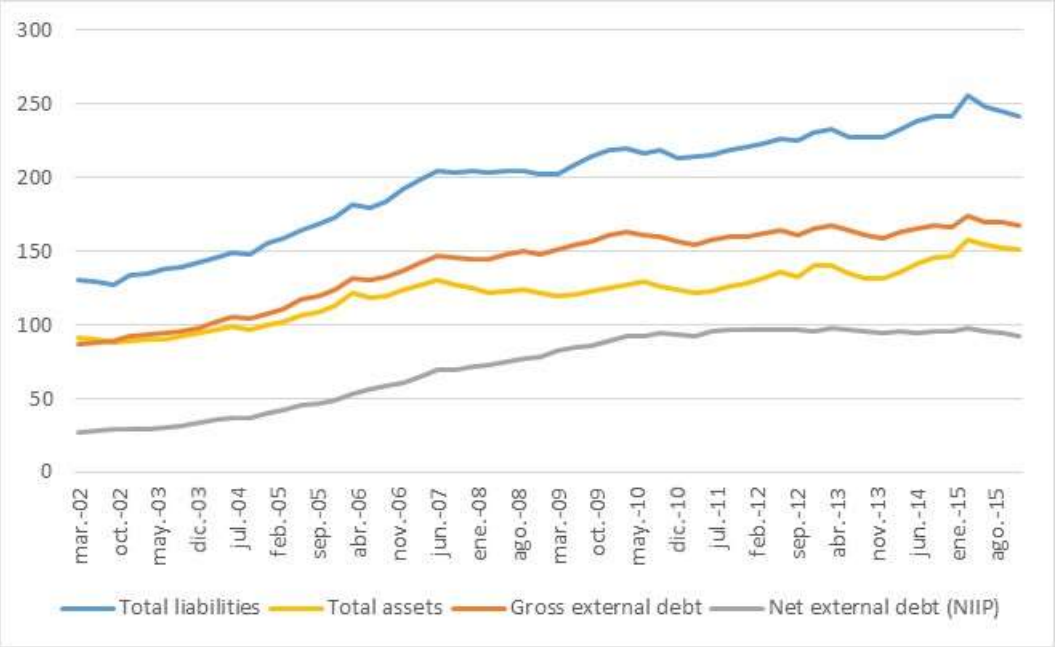
From Figure 7 above, we can highlight the following points: (i) Spanish FDI in the rest of the world (net change of assets), between 2003 and 2008, is higher than FDI made by the rest of the world in Spain (net change of liabilities); this component of the financial account shows remarkable stability; (ii) until 2007, inflows to OMFI (other monetary and financial institutions) is the largest component of all inflows, especially through bond issues (securitization of mortgage loans) and to a lesser extent from the interbank money market;[4] (iii) in 2011 and 2012, the capital withdrawal (negative net increase of liabilities) from OMFI is offset by the accumulation of liabilities by the BdE, particularly liabilities to the TARGET2 system; in 2013, with the announcement of the outright monetary transactions (OMT) TARGET2 liabilities decline, and they are offset by increasing liabilities issued by the government; in 2014 and 2015 gross inflows (a positive net change in liabilities issued by the government and, in 2015, BdE

[4] Spanish banks collected capital inflows through non-monetary financial institutions which, actually, work as the international branch of Spanish banks. These institutions are classified as 'other resident agents'. See Banco de España, 2006, pp. 85-86.

liabilities[5]) are offset by outflows, captured in the net change of assets (OMFI and, to a lesser extent, FDI and BdE assets); (iv) over 2011-13, when there is a strong outflow of capital (a negative change in liabilities) from OMFI –other monetary and financial institutions– in the upper figure, such reversal is not offset by a repatriation of investments (through FDI) made in the past: there is just a relatively small inflow (a negative change of assets) of OMFI in 2010 and 2011.

Capital inflows and outflows usually have different characteristics: short term vs. long term, equity vs. debt, direct investment (which is usually less volatile) vs. portfolio and other investment, etc. One of the implications of this distinction is that the risk associated with large external indebtedness cannot be correctly analysed with the lens of net flows because it is a gross flow phenomenon: holding international assets does not necessarily eliminate the risk of a sudden stop and a capital withdrawal. When this is the case, we should pay more attention to gross capital inflows as the driver of gross external debt than to current account deficits, which cause net debt positions.
Figure 8 shows the evolution of three concepts of external debt for the Spanish economy (we also include total assets) in percentage of GDP: gross liabilities, gross debt and net debt. Gross external debt is well above 160% GDP since 2010, whilst net debt is around 70 percentage points of GDP lower.

Figure 8: External debt, total liabilities and assets. Spain. %GDP.



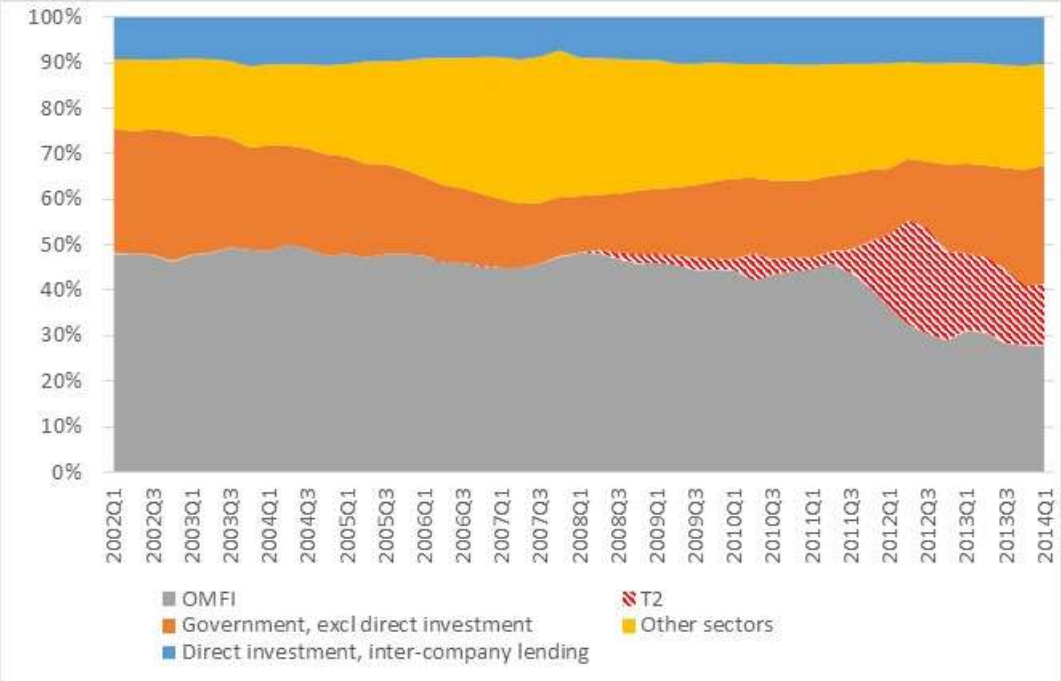
Source: BdE, INE and authors' calculations.

Regarding gross external (outstanding) debt by institutional sectors, foreign direct investment is rather stable, around 10% of outstanding external debt. Banks' external debt (OMFI) has also been stable, around 50% until mid-2011, but it has declined since then, due to the second wave of the sovereign debt crisis. This decline has been offset by increasing Banco de España's liabilities to the TARGET2 system which, in turn, fall after the announcement of the outright monetary transactions programme (OMT) by the ECB in mid-2012. Government debt to the rest of the world has been declining to roughly 15% of total outstanding external debt in 2007, as fiscal deficit was falling as well, and then it increases, especially since the introduction of the

[5] In 2015, liabilities to T2 are the consequence of assets purchase programmes: the Banco de España purchases assets, particularly Spanish public debt, from non-resident euro zone agents.

OMT. The rest of external debt is debt from corporations, households and banks' non-resident branches which is not direct investment, whose higher value in percentage points comes just before the bursting of the real estate bubble.

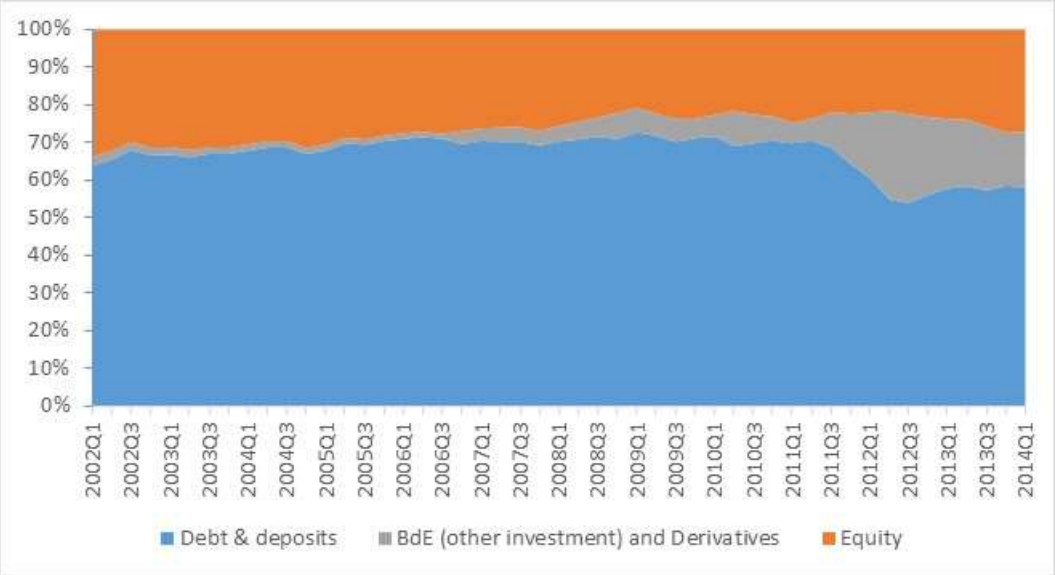
Figure 9: Gross external debt by institutional sectors. % of total debt.



Source: ECB, BdE and authors' calculations.

Regarding debt by instruments, between 60% and 70% of gross external debt is in the form of debt or deposits, which are rather volatile. In 2012 debt declines and is offset by liabilities to the T2 system, held by the Banco de España. Equity is one-third or less of external liabilities.

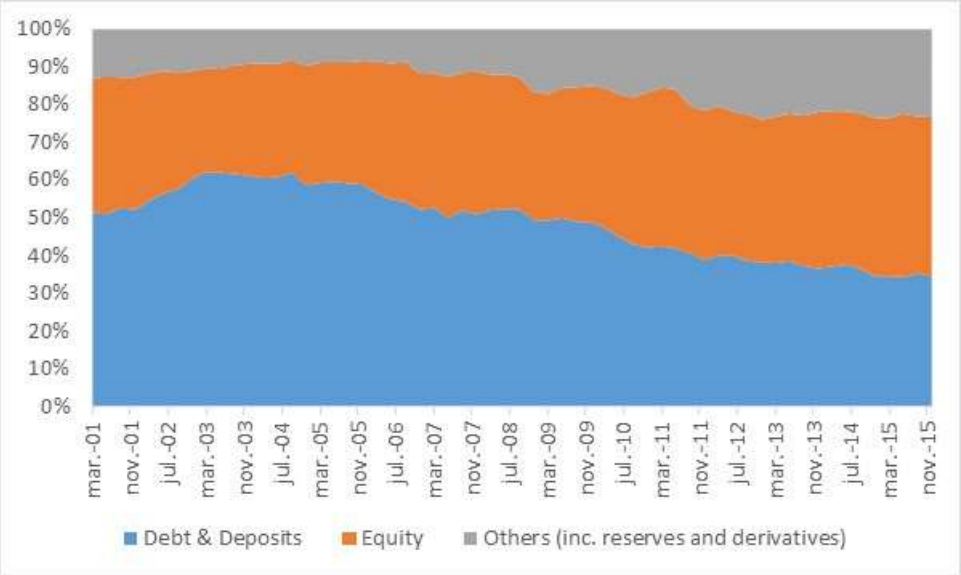
Figure 10: Gross external debt by instruments.



Source: BdE and authors' calculations. N.B. BdE offers information about debt by instruments related to total liabilities. We assume that the participation of debt and equities is the same as in gross external debt.

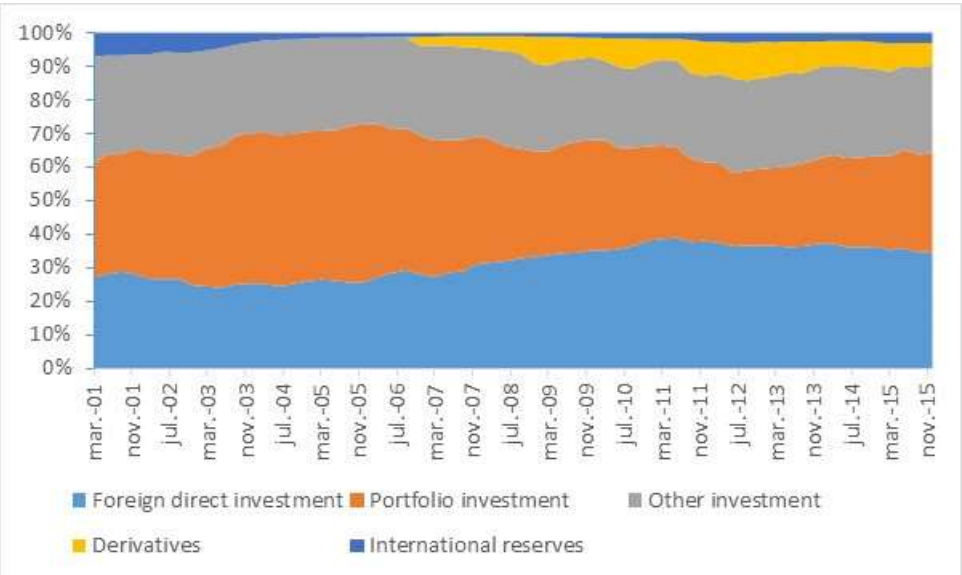
This stands in some contrast with the composition of total external assets held by the Spanish economy, where debt and deposits decline from 60% in mid-2004 to 35% in 2015.[6] The proportion of equity in assets is larger than in liabilities.

Figure 11: Total external assets by instruments.



Source: BdE and authors' calculations.

Figure 12: Total external assets by institutional agents.



Source: Bde and authors' calculations.

Foreign direct investment as an asset is relatively larger than as a liability which, when added to portfolio investment amounts to 60-70% GDP. Both assets are rather stable. Other investment abroad is roughly 30% of total assets.

[6] As Lane, 2012, points out, advanced market economies show a larger debt-equity mix regarding external liabilities, whilst the opposite holds for assets.

From all of this information we conclude that:

- Bank credit is a main driver of gross capital inflows, in the form of debt.
- Gross inflows and outflows are procyclical, larger and more volatile than net flows.
- Gross inflows to Spain are mostly in the form of debt, whilst outflows are more in the form of equity. Assets may not be available for sale in a sudden stop.
- In a period of crisis, debt flows are more volatile than equity flows.

Conclusions

Starting a little before the launch of the euro until mid-2008, Spain, like other peripheral EZ economies, experienced a boom period funded with bank debt incurred by private agents. A strong domestic demand beyond GDP led to increasing current account deficits, reaching 10% GDP in 2007. Accumulated external deficits gave rise to a negative net international position around 90% GDP in the late 2000s. Too much external debt that could not be refinanced appears to be at the root of the mess that followed the Greek sovereign crisis in 2010. This situation has been considered a balance-of-payments crisis by many authors.

External debt has played a key role in this process. However, the main driver for external debt was not the piling up of current account deficits (something that, nevertheless, deserves attention from policy makers and researchers) but rather banking debt that banks refinanced abroad, mostly to fund transactions in the real estate market, until 2008. The transformation of private into public debt, the provision of public guarantees to banks, and the realization by investors that public debt was not a risk-free asset have provided space for considerig a sovereign debt crisis. However, the source of this mess was too much cross-border bank debt. Furthermore, external indebtedness could have happened even with a balanced current account.

It is gross, not net, capital flows that are relevant in order to deal with financial instability risks. Regarding the recent Spanish experience, the link between bank leverage and bank credit has proved to be a direct source of financial instability. The economic policy measures to rebalance the external sector have aggravated the situation, though they have not addressed the origin of the problem which, for short, is double: (i) what to do with a banking system once it has granted too much credit? And (ii) how to prevent an excess elasticity of credit?

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