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Integration, Spurious Convergence, and Financial Fragility: A post-Keynesian interpretation of the Spanish crisis

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Abstract

The Spanish Crisis is generally portrayed as a 'hangover' from excessive construction activity, exorbitant residential house prices, excessive spending by households and/or from the design and construction of a welfare state beyond the economic possibilities of the country. We put forward a different hypothesis. We argue that the Spanish crisis resulted, in the main, from a widening deficit position in the non-financial corporate sector (the most important explanatory factor behind the rising external imbalance of the country) and a declining trend in profitability (a reflection of a lack of competitiveness) under a regime of financial liberalization and loose and unregulated lending practices.

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Introduction

In the period covering 2008-2012, Spain suffered the worst economic and financial crisis in its modern history. In 2008 and 2009, GDP contracted 0.1% and 3.7% barely growing thereafter. There followed banking failures concentrated in the regionally-based savings banks and culminating in 2012 with the near collapse of then fourth largest bank, Bankia, a merger of seven regionally based savings banks.

The effects of the crisis of unemployment and budget finances were rapidly felt. The rate of unemployment more than doubled between 2006 and 2009 (8% and 18% respectively) only to increase and remain above 20% since 2010. For its part the fiscal balance positive or near zero in the years preceding the crisis turned negative in 2008 and stabilized at roughly double digits throughout 2012.

The Spanish Crisis is generally portrayed as a 'hangover' from excessive construction activity, exhorbitant residential house prices, excessive spending by households and/or from the design and construction of a welfare state beyond the economic possibilities of the country. We put forward a different hypothesis.

We argue that the Spanish crisis resulted, in the main, from a widening deficit position in the non-financial corporate sector (the most important explanatory factor behind the rising external imbalance of the country) and a declining trend in profitability (a reflection of a lack of competitiveness) under a regime of financial liberalization and loose and unregulated lending practices. We believe that the construction activity and residential house prices are a parcel and part of the explanation of the crisis but certainly not its main underlying cause.

The non-financial corporate sector rising deficit was reflected in a growing negative net financial worth balance sheet position. The non-financial sector financed its deficits and debt not only via the domestic

banking system but also through external loans from other Eurozone countries. In turn, the commercial banking and financial system also required external funding becoming a net debtor *vis-à-vis* the rest of the world and in particular *vis-à-vis* the Euro Zone. The majority of the external funding was short-term (i.e., portfolio investment). The balance sheet positions of the non-financial corporate sector and the financial system and their composition were reflected in a deteriorating net investment position of the country in the aggregate (the stock counterpart of the rising current account deficit).

The fragility of this process, akin to a Ponzi regime and thus unsustainable over time, materialized when Spain experienced a sudden stop and contraction in portfolio flows mainly due to the Global Financial Crisis (2007-2009). This produced a credit crunch in the availability of finance and of credit which, given the financial position of non-financial corporate sector, put the sector against the wall. This also impaired the construction the real estate sectors putting a downward pressure on house prices and on the value of real estate property. As a result real estate property based assets lost their appeal affected by low profitability and liquidity and high carrying costs and further deteriorated the balance sheet of both the financial and non-financial corporate sectors. The stage was set for the crisis.

Our paper is divided into ten sections. The first section discusses Spain's accession to the European Community and how this fact overshadowed the need to tackle some of major structural problems and vulnerabilities of the Spanish economy, which were ultimately at the root of the 2007-2012 crises. This sets the stage for the analysis of the economic performance of the country from an aggregate demand perspective in sections two and three. Section four and five decompose from an accounting perspective the financial balances of the non-financial corporate and households. Sections five to eight complements the analysis of the flow dimension with an examination of the stock positions of the non-corporate financial, financial and corporate setors. Section nine discusses the 'residential and house price bubble' hypothesis. The final thoughts are found in the last section.

Spain's entry into Europe: an identity regained

Spain's formal integration into Europe in the 1980s marked an unprecedented event and break through in Spanish history, and in the way in which, Spain was seen and understood by the rest of the world, as well as, by Spaniards themselves. Spain's entry into Europe was more than a economic event or a foreign

policy issue. It was the way in which Spain, after decades of isolation, found its place in the international and global context, and regained its identity as a nation (Pérez, 1999; Carr, 2009, p. 658; García de Cortázar & González Vega, 1994, p. 637 Fusi & Palafox, 1997, p. 442).

The formal incorporation of Spain into Europe was a long, laborious and winding process. Spain first raised its formal integration into Europe and its institutions in 1977, but the official negotiations began two years later in 1979, and the country was officially admited as a member of the European Community (i.e., later on the the European Union) in 1986, that is roughly a decade after the integration process began. The lentitude and difficulty of the process reflected to a great extent the problems and issues posed by the entry of Spain into the European Community.[2]

Carr (2009) lists the following. First, the incorporation into Europe required an important change in Spain's foreign policy stance. Also, the country had to resolve issues related with its defense policy such as its decision to adhere or not adhere to the North Atlantic Treaty Organization (NATO). In addition, after four decades under the dictatorship of Franco, Spain had to show definite advances and gains in its democratic process (Spain convened democratic elections in 1977 for the first time since 1931 and approved its constitution in 1978).

Furthermore, on the European side, the European Community considered necessary to deal first with the consequences of the Oil crises on the regional and national economies and the issues posed by the incorporation of Great Britian, Denmark and Ireland before proceeding to negotiate the entry of the peripheral countries including Greece, Portugal and Spain.

Finally, concerns were raised by the possible effects of Spain's primary sector (agriculture and fisheries) on other European Community member states and by Spain's regional disparities.

All in all, Spain was finally admited as a full member of the European Community on the 1st of January 1986 as well as in other key European agreements and institutions. Spain's incorporation into the European Community meant that the country would have to undergo several and deep changes to its economic and financial structures and policies (Ibid, p. 656).

As part of its full membership Spain participated in the Maastricht Treaty (1992), the Stability and Growth Pact (1997), and in the launch and adoption of the Euro (1999 and 2002) as well as in other European initiatives.[3] But most importantly, the incorporation of Spain was perceived as 'a consecration, a way of recognizing that the country had democratic legitimacy, and that Spain was as European, as any other member of the Union' (Pérez, 1999, p. 697). It was ultimately a means to resolve an identity problem as a nation and find a role within the world and international context.

The identity problem has its roots in the fact that Spain as a nation and its social and economic development had been presented (at least until the early 1990's) as an anomaly and an exception relative to the evolution followed by other european and industrialized countries. Whether Spain was simply a backward and underdeveloped country that developed at the margin of Europe and of its core values including progress and industrialization, civilization and democracy or whether the country developed in tandem with other European countries but was simply different in its historical and cultural evolution and was a misunderstood case were the subjects of important debates in Spanish intellectual history.[4]

By the time the country was admitted as a member of the European Community (and then the European Union and the Euro) the consensus was tilted towards considering Spain a 'normal' European country whose history did not difer from that of other European countries. Spain possesed the same the characteristics and problems of any other modern society (Fusi & Palafox, 1997, p. 442). As reiterated by Pérez (2009, p. 178):

> "...would Spain be definitively condemened to underdevelopment and the marginalization within a Europe that described itself, as the land of progress, civilization and democracy?...during three hundred years [starting in the XVI Century], anglosaxon and protestant (or influenced by the latter) writers attempted to credit that thesis: many spaniards also adhrered to this thesis...However, since 1960, the events disproved that theory. What was termed the Spanish miracle served to demostrate that Spain was capable of achieving economic efficiency, social progress and political liberalism. In 1986 the entry into the European Community consecrated that evolution. After three hundred years of heartbreaks and uncertainty, Spain overcame its handicap...Its problems are those of the majority of developed countries." [5]

Spain's regained identity as a European nation had major positive psychological effects and put to rest all the debates on the differences and particularities between Spain and Europe. After 1986, the issue of the intelligibility/unintelligibility of Spain and its national character was simply obsolete. However, the optimism imbued by being European and the preoccupation with complying with the norms and criteria for integration with Europe overshadowed the need to tackle some of major structural problems and vulnerabilities of the Spanish economy, which were ultimately at the root of the 2007-2012 debacle. These are underscored in the next sections in our analysis of aggregate demand and its components over the period 1961-2011.

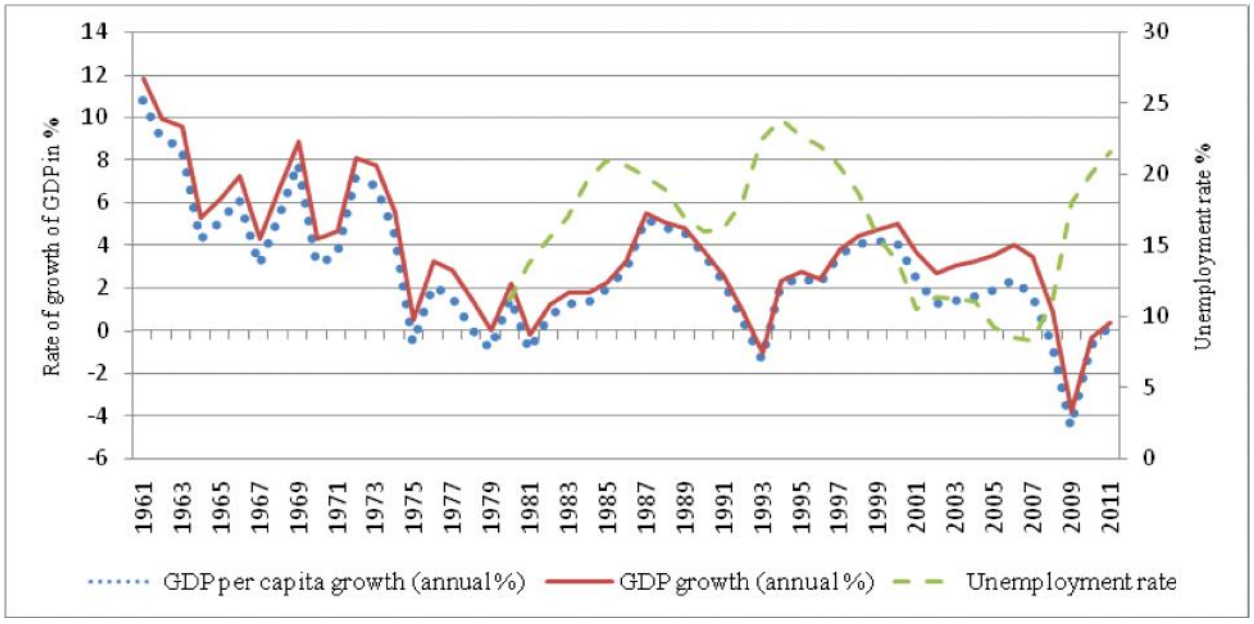
Spain: a star performer

The analysis of the evolution of GDP between 1961 and 2011, shows first that Spain witnessed a persistent growth deceleration since the 1960's until 1975. Between 1961 and 1975 the rate of growth of GDP decreased from 10% to -0.5%. Thereafter, following an unclear behavioral pattern between 1976 and 1981, the economy finally seemed to have taken off on an upward trend in 1982 reaching a peak in 1987 (one year after Spain joined the European Community). However this proved to be transitory as the economy set off again on a decelerating trend which culminated in a contraction in 1993 of the GDP growth rate of -1.3%.

The 1992-1993 contraction halted and reverted, albeit temporarily, a process of convergence of Spain towards European livings standards which began in 1986. However, the convergence of Spain's GDP per capita towards that of Europe did not start with the formal integration of Spain into Europe in 1986, but actually began in the 1960s and continued throughout the middle of the 1970s. By comparison the 1996-1992 convergence was relatively short-lived relative to that of the 1960's and 1970's (7 versus 15 years respectively).[6] (See Figure 10 in the Annex).

The process of convergence towards Europe took a renewed impetus as Spain managed to consolidate its growth performance starting in 1994, eight years after its entry into the European Union, making it last for 14 years, until the Euro Crisis and marking it as the most stable growth period of the post WWII era. In 1994 Spain's GDP per capita represented 74% and in 2007, 82%, of the that of Europe. Only by then did Spain's integration into Europe improved and consolidated in a definitive way the country's potential and prospects for growth and development.

Figure 1: Spain. Real GDP, GDP per capita growth and unemployment rate.
In percentages (1961-2011)



Source: World Bank Development Indicators (2013)

A quick overview of basic cycle indicators (amplitude and duration) for Spain in comparison to other Euro and developed (Japan, the United States and the United Kingdom) countries also shows the strength of the Spanish GDP performance in the 1990s and 2000s until the crisis. As shown in Table 1, with the exception of the United States and the United Kingdom, Spain registers the longest and most intense expansion during this period (32 quarters and 22.9% from trough-to-peak).[7] Similarly Spain exhibits, with the exception of the United States, the lowest number of cycle turning points (3 peaks and 2 troughs) and thus, for all purposes, the most stable cycle performance.

Moreover, at the same time that GDP expanded robustly, the country confronted with success one its most difficult and persistent economic problems of its recent history, that of high unemployment. The unemployment rate that had jumped from 11% to 24% between 1980 and 1994, reaching unprecedented historical levels, was persistently abated to finally reach levels below the two digit mark between 2001 and 2007 (10.5% and 8.3% respectively).[8]

Finally during this growth period Spain registered some of lowest and more stable inflation rates in more than four decades. Between 1994 and 2007, the rate of inflation averaged 3.2% which was below that registered for the 1960s, 1970s 1980s and 1990s (6.2%, 15.4% and 9.0% respectively). In terms of stability, in contrast to other periods, the coefficient of variation was less than unity (i.e, 0.26).[9]

Table 1: Duration and amplitude of the cycle for selected European countries, Japan, the United States and the United Kingdom 1990-2011 (Quarterly data)

Country	Period		Duration (quarters)				Amplitude (percentage)	
	Peak	**Trough**	Peak-to-peak	Trough-to-trough	Peak-to-trough	**Trough-to-peak**	Peak-to-trough	**Trough-to-peak**
Spain	**1992q1** **2008q1** **2011q1**	**1993q2** **2009q4**	38	66	6	**32**	-3.6	**22.9**
Belgium	**1989q4** **1991q4** **1995q4** **1997q4** **2000q4** **2008q2** **2012q1**	**1990q3** **1993q1** **1996q3** **1998q3** **2001q4** **2009q1** **2013q1**	14.8	15.0	3.6	**11.3**	-2.9	**11.4**
France	**1992q3** **2008q1** **2012q1**	**1993q1** **2009q2** **2013q1**	39	39.5	4	**35**	-2.0	**16.2**
Germany	**1992q1** **1995q3** **2001q2** **2002q3** **2004q2** **2008q1**	**1993q1** **1996q1** **2002q1** **2003q2** **2005q1** **2009q1**	12.8	12.8	3.2	**9.8**	-1.9	**5.7**
Italy	**1992q1** **1996q1** **2001q1** **2002q3** **2007q3** **2011q2**	**1993q3** **1996q4** **2001q3** **2003q2** **2009q2**	15.4	15.8	4.2	**11.2**	-2.2	**5.8**
Japan	**1993q1** **1997q1** **2001q1** **2004q3** **2008q1** **2010q3** **2012q1**	**1993q3** **1999q1** **2001q4** **2005q1** **2009q1** **2011q2** **2012q3**	12.7	12.7	3.4	**9.0**	-3.0	**5.8**
United States	**1990q2** **2007q4**	**1991q1** **2009q2**	70.0	73.0	4.5	**67.0**	-2.7	**43.1**
United Kingdom	**1990q2** **2008q1** **2011q3**	**1991q3** **2009q3** **2012q3**	42.5	41.5	4.7	**37.0**	-3.3	**24.0**

Source: Authors'own computations on the basis of official information form countries' central banks and statistical offices and Grocer (2014)

During this time Spanish society underwent important changes at the social and economic level. Among the most important are the prominent role and presence that Spain achieved at the international level, the efforts to improve the country's overall infrastructure network and the continuation in the creation of a welfare state.[10]

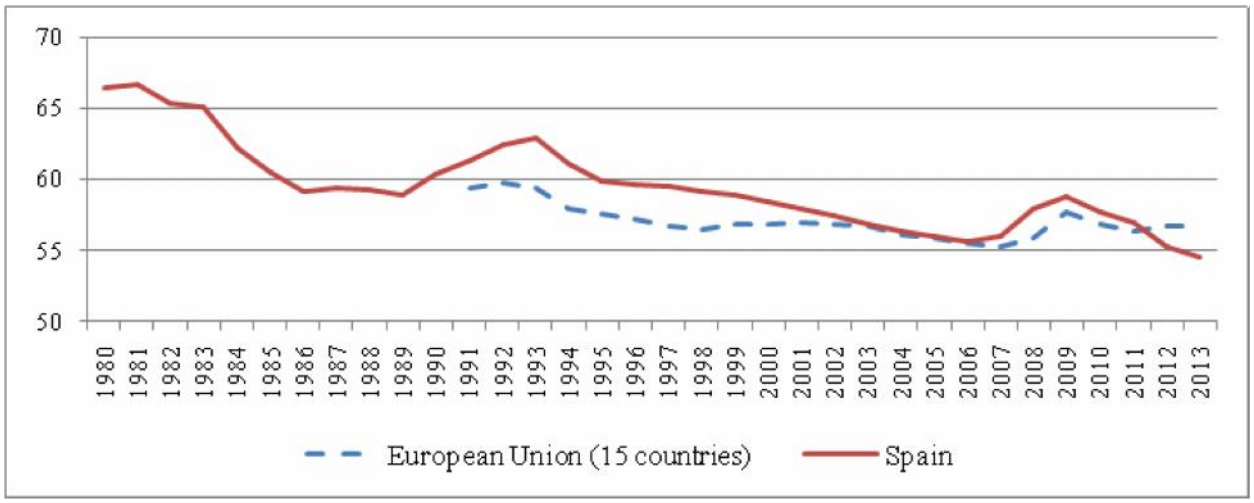
However, these changes were far from sufficient to address the main structural imbalances and gaps that traditionally characterized Spain's economy, and hampered its economic and social development for decades including weak competitiveness, low productivity, scarce innovation and insufficient productive investment.[10] Recent evidence provided by the IMF (2014) on labour productivity in Spain indicates that its rate of growth has steadily trended downwards since the 1970s, with rates of growth of roughly 4.8%, 3%, 1.3% and 0.7% in the 1970s, 80s, 90s and 2000s respectively. Similarly Pérez Caldentey and Vernengo (2012) how higher relative unit labor costs in the peripheral countries of Europe, including, to a loss of competitiveness and that this translates into significant real appreciation of the real exchange rate in the periphery of Europe.

Spain's economic performance in 1990's and 2000s can hardly be said to respond to a strucural transformation or to a conscious industrial policy strategy.[12] It can be rather explained in part by the affluence of funds received from Europe as a result of the structural fund and cohesion policies. Between 1986 and 1996 Spain received about 150 billion Euros in funds for agriculture, for regional development and for cohesion. The majority of infrastructure development was financed with European Funds. Similarly, the lion's share of tourism, foreign investment and trade originated in Europe.[13]

But the success prior to the 2007-2012 crisis is also explained by financial liberalization. Spain in line with the majority of Euro Zone countries, lifted capital controls and deregulated interest rates towards the end of the 1980s and beginning of the 1990s.[14] The Chinn-Ito index which reflects the degree of openness in capital account transactions shows that starting in 1992 the level of financial openness for Spain increased significantly reaching the maximum level recorded by the index by 1997 in line with those of other Euro countries.[15]

Another important contributing factor was a policy of wage compression. As shown in figure 2 between 1992 and 2007, the adjusted wage share trended downwards and declined from 62% to 56% of GDP.

Figure 2: Spain and European Union (15 countries) Adjusted wage share: total economy: as percentage of GDP at current market prices (Compensation per employee as percentage of GDP at market prices per person employed.)



Source: AMECO (2114) http://ec.europa.eu/economy_finance/ameco/user/serie/ResultSerie.cfm

As we will show and develop later on in the paper these policies gave a false sense of prosperity to the Spanish economy that hid significant vulnerabilities in its economic structure and model. The compression of wages which translated into a decline of the wage share and thus a rise in the profit share provided a stimulus to the non-financial private sector to expand production with independence of productivity concerns or competitiveness criteria.

Note that as we will show in the following sections, the increase in profit share was accompanied by a decrease in profitability. Both can coexist under conditions of productivity and/or capacity reductions that more than offset the rise in the profit share.[16]

At the same time, the private sector including the non-financial private sectors had greater and easier access to money and liquidity and especially to short-term financing and debt (both internal and external). Moreover, as part of the convergence conditions, the term-structure of interest rates declined significantly so that European integration provided easier money and at much cheaper rates.

In 1985, nominal short and long-term interest rates were lowered from 13.4% and 12.2% in 1985 to 5.5% and 4.4% in 2000 and 3.7% and 3.1% in 2006. Long and short-term interest rates stood at 4.3% and 3.3% in 1985, 2.2% and 1.1% in 2000 reaching negative number in 2006 (-0.2% and -0.8% respectively).

The creation of conditions of corporate profitability, financial liberalization and wage compression were crucial in building-up a process of debt accumulation, in increasing the degree of financial fragility of the non-financial private sector and the banking system and in setting the stage for the crisis.

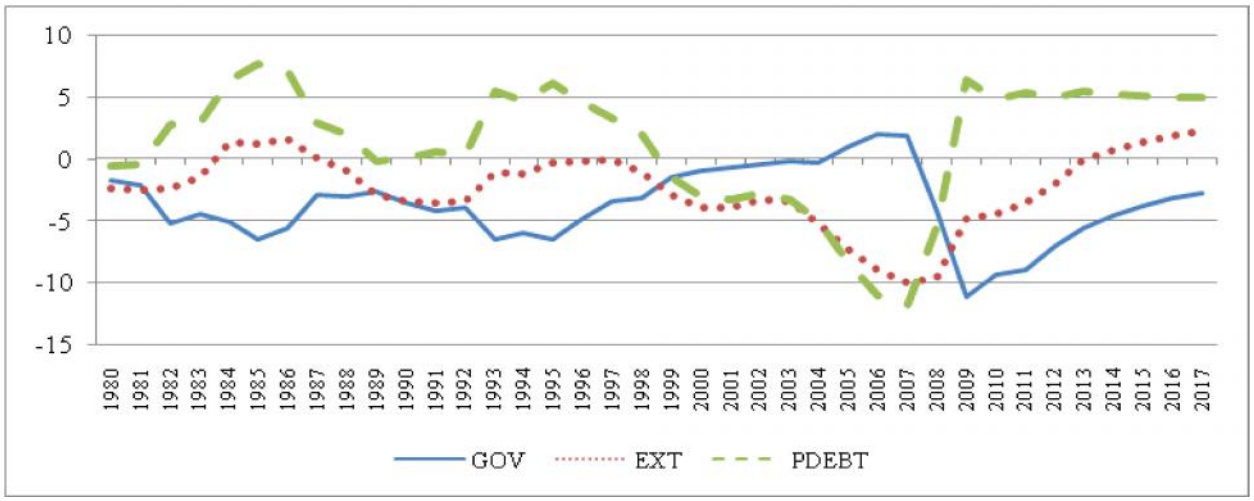
A financial balance approach

A useful way to understand the drivers of growth during the period 1994-2007, is to analyze the structure of aggregate demand through the financial balances of the three major sectors of the economy, namely government (FBg), private (FBps) and external sectors (FBes).[17]

Figure 3 below plots the financial balances of the government, external and private sectors for 1980 to 2011. It shows that between 1980 and roughly 1994 the driver of aggregate demand was the government.

In this period the fiscal accounts of the general government were systematically in a deficit position fluctuating around a -5% of GDP 'trend' and injecting assets into the economy. In parallel, during this time the general (gross) government debt rose from 16% to 59% of GDP and reaching a peak in 1996 (67% of GDP).[18]

Figure 3: Spain. Financial balances of the government, external and private sectors (1980-2011)



Source: IMF WEO (2013)

For its part the behavior of the private sector inversely mirrored that of the public sector. That is, as the public sector remained in deficit throughout the period, so the private sector was in permanent surplus acting as a drag on aggregate demand. More importantly just as the public sector deficit fluctuates around

a 5% trend, the private sector surplus also fluctuates around a 5% 'trend.' This gives the impression that during this time the Spanish economy behaved like a closed economy, that is private and public financial balances were equal or very similar (with the opposite sign).

The period 1994-2008 marks a break with this pattern of aggregate demand. Starting roughly in 1994 and for more than a decade prior to the Euro Crisis, the government began to adopt a contractionary fiscal stance removing its influence as a push factor of aggregate demand. The deficit declined from -6% in 1994 to -0.3% in 1994 a decade after, and thereafter went into surplus. The public debt was reduced by half (67% and 36% of GDP in 1996 and 2007 respectively).

At the same time, the private sector took the leading role in sustaining the growth of aggregate demand through an increasing deficit that was, for all purposes, mirrored by the rising imbalance in the external sector. In 1994 the private sector had a surplus equivalent to 5% of GDP. By 1999 the positive financial position had turned into a deficit of -1.5% of GDP which then progressively increased to a tenfold in 2007 (12% of GDP).

The external sector exhibited a similar behavior. In fact, as seen in figure 3, for the period 1995-2007 it mirrors the evolution of the private sector.

A more detailed presentation of the sectoral financial balances (net lending/borrowing positions) is provided in table 1 for the period 1995-2012. Besides the government and the external sector it includes financial institutions, non-financial corporations, and households.

Table 2 shows that starting from the middle of the 1990's up to the start of the crisis households reduced their net lending position and assumed starting in 2004 a net borrowing position reaching -2.6% (2.7%) of GDP in 2006-2007. Non-financial corporations became net borrowers in 1997 and increased their borrowing position throughout the 2000s. In 2007, non-financial corporations registered a deficit of -10.7% of GDP (three times as much as that of the household sector). Hence, the main contributor to the evolution of the financial balance of the private and external sectors was the non-financial corporations sub-sector.

Table 2: Spain. Net borrowing/lending in percentage of GDP by sector. 1995-2012.

	Non-financial Corporations	Households and non-profit organizations	Financial Institutions	General Government	ROW
1995	1.4	5.3	1.0	-6.6	1.1
1996	0.4	4.8	1.0	-4.9	1.3
1997	-0.2	4.2	0.7	-3.2	1.5
1998	-1.3	3.2	1.1	-2.6	0.4
1999	-2.9	2.4	0.5	-1.2	-1.2
2000	-4.0	1.3	0.5	-1.0	-3.2
2001	**-4.8**	0.6	1.2	-0.5	**-3.5**
2002	**-3.9**	0.3	1.2	-0.2	**-2.7**
2003	**-3.6**	0.0	1.1	-0.4	**-2.9**
2004	**-4.4**	**-1.0**	0.7	-0.1	**-4.8**
2005	**-6.9**	**-1.7**	0.9	1.3	**-6.5**
2006	**-8.9**	**-2.6**	0.7	2.4	**-8.4**
2007	**-10.7**	**-2.7**	1.9	1.9	**-9.6**
2008	-7.7	1.2	1.8	-4.5	**-9.2**
2009	-1.1	6.6	1.3	-11.2	-4.3
2010	1.1	3.9	0.9	-9.7	-3.8
2011	1.8	2.4	2.0	-9.4	-3.2
2012	3.5	0.9	6.1	-10.6	-0.2

Note: Financial institutions include the Bank of Spain, deposit institutions including commercial banks, savings institutions and credit cooperatives, other financial intermediaries (such as venture capital institutions, Collective investment institutions (other than MMFs), securities-dealer companies, financial vehicle corporations, venture capital funds and companies, financial holding companies and issuers of preference shares), financial auxiliaries (Deposit guarantee funds, securities brokers, mutual guarantee companies, appraisal companies, managementcompanies (of pension funds, mutual funds and investment companies), operators of organised markets and companies performing settlement and market clearing functions, Insurance corporations and pension funds, Life and risk insurance corporations, non-profit insurance institutions, the *Consorcio de Compensación de Seguros* and autonomous pension funds. The general government includes central, regional and local governments as well as social security funds.

Source: Bank of Spain Financial Accounts of the Spanish Economy and Annual Report (2000).

http://www.bde.es; Methodological Notes on the Financial Accounts of the Spanish Economy (2014).

The persistent and growing borrowing needs of the non-financial corporate sector translated into a process of debt accumulation.[19] Available data for the period 2001 to 2011 shows that the net debt of Spanish non-financial corporation net debt-to-income ratio (after taxes) roughly doubled from the period 2001-2002 to 2003-2007 (646% and 1,194% respectively). Thereafter debt continued to increase but at a much lower pace. For the period 2008-2011, the net debt-to-income ratio reached 1,319 (a 10% increase relative to the period 2003-2007) (Table 3)

It is worth noting that the accumulation by the non-financial corporate sector is not exclusive to Spain but that it occurs for other periphery countries also including Ireland, Italy and Portugal. Spain distinguishes itself from other periphery countries in that it registers the most rapid increase in debt prior to the crisis. Contrarily to the periphery countries, in the case of the core countries (Austria, Belgium, France, Germany and the Netherlands) the corporate sector witnessed, without exception, a decline in their stock of debt (Table 3).

Table 3: Euro Zone Net debt-to-income ratio, after taxes, of non-financial corporations.

In percentages. 2001-2011

	2001-2002	**2003-2007**	**2008-2011**
Core Countries			
Austria	616	402	440
Belgium	58	-15	-247
France	425	300	327
Germany	190	181	170
Netherlands	238	95	16
Median	**238**	**181**	**170**
Periphery countries			
Italy	353	430	711
Ireland	196	247	327
Spain	**646**	**1,194**	**1,319**
Portugal	1,376	1,129	1,578
Median	**500**	**779**	**1,015**
Other Euro	229	210	284

Note: Net debt-to-income ratio, after taxes, of non-financial corporations is defined as main financial liabilities divided by net entrepreneurial income less current taxes on income and wealth. Main financial liabilities include currency and deposits, debt securities (excluding financial derivatives) and loans.

Source: Eurostat (2013). http://ec.europa.eu/eurostat/sectoraccounts

Non-financial corporations

In order to gain a better understanding of the behavior of the financial balance of non-financial corporations we decomposed the financial balance (FB_{NFC}) into its main determinants. These include non-financial corporations's gross value added (GVA_{NFC}), wages (W_{NFC}), taxes minus subsidies and current tranfers (Ω_{NFC}), net property income (NPI_{NFC}), net capital transfers (NPT_{NFC}) and gross fixed capital formation (I_{NFC}). Formally,

(1) $FB_{NFC} = [(GVA_{NFC}) - (W_{NFC}) + (\Omega_{NFC})] + (NPI_{NFC}) - (I_{NFC}) + (OC_{NFC})$

In Eq. (1) the variable W_{NFC} includes besides salaries social contributions paid by employers.[20] Ω_{NFC} includes both taxes on production and imports, and on wealth and production. Taxes on wealth and production represent on average roughly 80% of total tax payments for the period 2000-2012. Capital taxes are included under OC_{NFC} . For the period under consideration capital taxes represent on average only 2% of total tax payments.

For its part net property income (NPI_{NFC}) includes net interest payments and other non-interest property income. The available data shows that net interest payments accounted for roughly 50% of total net property income during 2000-2004, and thereafter took an increasingly important role in explaining its behavior. Prior to the crisis, net interest payments represented 80% of total net property income.

The term $[(GVA_{NFC}) - (W_{NFC}) + (\Omega_{NFC})] + (NPI_{NFC})$ represents the gross savings of non-financial corporations. The financial balance (FB_{NFC}) can then be expressed as the difference between savings and investment. Formally,

(2) $FB_{NFC} = S_{NFC} - I_{NFC} + OC_{NFC}$

Where, $S_{NFC} = [(GVA_{NFC}) - (W_{NFC}) + (\Omega_{NFC})] + (NPI_{NFC})$

Table 4 below shows the evolution of the different components of on an annual basis from 2000 to 2012 as a percentage of GDP. It also provides a decomposition of its changes and that in the gross savings of non-financial institutions (S_{NFC}) during three periods: 2000-2002, 2003-2008, and 2009-2012. These three periods correspond respectively to the pre-Euro, the implementation of the Euro and the Euro Crisis.

The results show in the first place that the increase in the deficit position of the non-financial corporation sector (FB_{NFC}), which expanded significantly after the adoption of the Euro and until the crisis, is mostly explained by a decline in the sector's gross savings and a to much lesser extent by an increase in gross fixed capital formation. During this period, the non-financial sector negative imbalance expanded by 3.8 points of GDP. The increase in investment explains 0.8 GDP points of this increase (that is, 21% of the total). The decline in savings accounts for 3.0 percentage points of the total increase in the imbalance or, 79% of the total.

Table 4: Spain. Main components of the non-financial corporate sector financial balance 2000-2012. As percentage of GDP

Year	(GVA_{NFC}) - (W_{NFC})	Ω_{NFC}	NPI_{NFC}	OC_{NFC}	S_{NFC}	I_{NFC}	S_{NFC} - I_{NFC}
2000	17.7	3.9	-4.0	0.5	10.3	14.9	-4.6
2001	17.7	3.9	-5.1	0.5	9.1	14.6	-5.5
2002	17.6	4.1	-4.4	0.5	9.7	14.4	-4.7
2003	17.5	4.1	-3.9	0.5	9.9	14.6	-4.6
2004	17.7	4.3	-4.3	0.5	9.5	15.0	-5.6
2005	17.1	4.8	-4.5	0.5	8.3	15.8	-7.5
2006	16.8	5.0	-5.2	0.5	7.1	16.4	-9.3
2007	16.4	5.5	-6.0	0.5	5.5	16.7	-11.2
2008	16.9	3.9	-6.5	0.5	6.9	15.4	-8.5
2009	17.8	3.6	-4.9	0.5	9.8	11.9	-2.0
2010	19.4	3.2	-4.4	0.4	12.3	11.9	0.4
2011	21.2	3.2	-5.1	0.4	13.3	12.2	1.2
2012	22.7	3.9	-4.4	0.4	14.9	11.9	2.9
Δ 2000-2002	-0.1	0.2	**-0.4**	0.0	**-0.7**	-0.5	-0.1
Δ 2003-2008	-0.6	-0.2	**-2.6**	0.0	**-3.0**	0.8	-3.8
Δ 2009-2012	4.9	0.3	**0.5**	-0.1	**5.0**	0.1	5.0

Source: Authors own on the basis of the financial accounts of the Spanish economy. Bank of Spain (2014).

Second, the detioration in the savings capacity of the non-financial corporate sector is due to net property income (NPI_{NFC}). Net property income explains 87% of the change in gross savings for this sector during the period 2003-2008. As mentioned above the behavior of net property income responds to increasing interest payments. During this period interest payments represented, on average, 40% of the sector's gross disposable income (GDI_{NFC}), rising to 75% and even 85%, in some quarters in 2007 and 2008 (See the debt burden column in table 5 below).

The decline in the savings capacity of firms and their increasing level of indebtedness and debt service payments took place against a background of decreasing profitability. This is illustrated in Table 4 which shows different indicators of profitablity (gross return on capital employed, before taxes' and net return on equity after taxes) and of indebtdetness (net-to-income ratio after taxes, gross debt to gross operating surplus (GOS); net debt to net operating surplus (NOS), debt-to-asset ratio; and the debt burden) for non-financial corporations. Without exception all indicators, beginning in 2002, reflect a decline in profitability.

Moreover, the evidence provided in Table 5 shows that the decline in profitability preceded, by most indicators, the increase in debt so that the latter seems to be the result of the former.

The decline in profitability accompanied by the rise in the debt of the non-financial corporate sector indicates a thrust towards greater financial fragility. The financial fragility is reflected in the fact that the number of bankrupt companies increased significantly before the onset of the crisis rising from 193 in 2004 to above 900 in 2005 and 2006 to 2,033 in 2007.[21]

Table 5: Spain. Profitability and debt indicators of the non-financial corporate sector (2000-2012)

Year	Profitability		Indebtedness				
	Gross return on capital employed, before taxes, of non-financial corporations	Net return on equity, after taxes, of non-financial corporations	Net debt-to-income ratio, after taxes, of non-financial corporations	Gross Debt to GOS	Net Debt To NOS	Debt to Assets	Debt burden
2000	…	…	…	1,004.7	1,171.6	45.1	
2001	16.2	9.5	642.1	1,117.5	1,118.7	47.9	27.00
2002	17.3	11.3	649.6	1,174.3	1,169.7	51.7	21.4
2003	15.6	10.5	666.5	1,117.3	1,153.0	50.0	19.9
2004	14.7	9.6	751.1	1,219.7	1,267.2	51.6	22.7
2005	13.0	7.8	1021.5	1,315.4	1,438.5	50.9	27.4
2006	11.3	7.1	1,290.1	1,482.8	1,634.8	53.1	40.8
2007	10.3	4.8	2,240.5	1,735.1	1,968.7	57.9	75.6
2008	12.3	8.2	2,079.26	1,809.0	2,097.5	70.0	67.3
2009	12.0	12.2	1,312.37	1,598.9	1,947.2	72.4	28.6
2010	13.8	17.9	1,010.02	1,476.7	1,739.4	72.1	20.1
2011	16.5	21.3	873.92	1,317.1	1,440.0	71.4	22.8
2012	…	…	…			67.9	…

Note: the debt burden is measured by net interest payments over gross income. Gross operating surplus is defined as gross value added minus compensation of employees, minus taxes on production and import plus subsidies. Net operating surplus equals gross operating surplus minus consumption of fixed capital. Net return on equity, after taxes, of non-financial corporations is defined as net entrepreneurial income less current taxes on income and wealth divided by shares and other equity, liabilities. Gross return on capital employed, before taxes, of non-financial corporations is defined as gross operating surplus divided by main financial liabilities including currency and deposits, debt securities (excluding financial derivatives) loans and shares and other equity. Debt includes loans (excluding inter-company loans), debt securities and insurance technical reserves

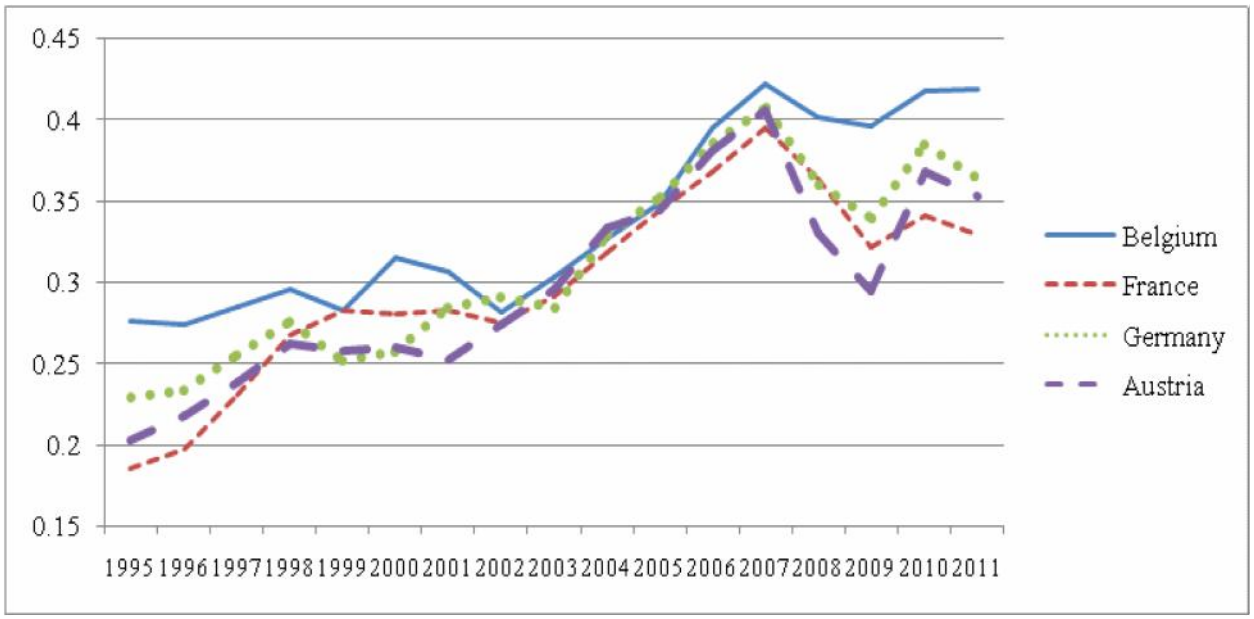
Source: Authors' own computations on the basis of the Bank of Spain (2014), AMECO (2014), Eurostat (2014). http://ec.europa.eu/eurostat/sectoraccounts, ECB (2012).

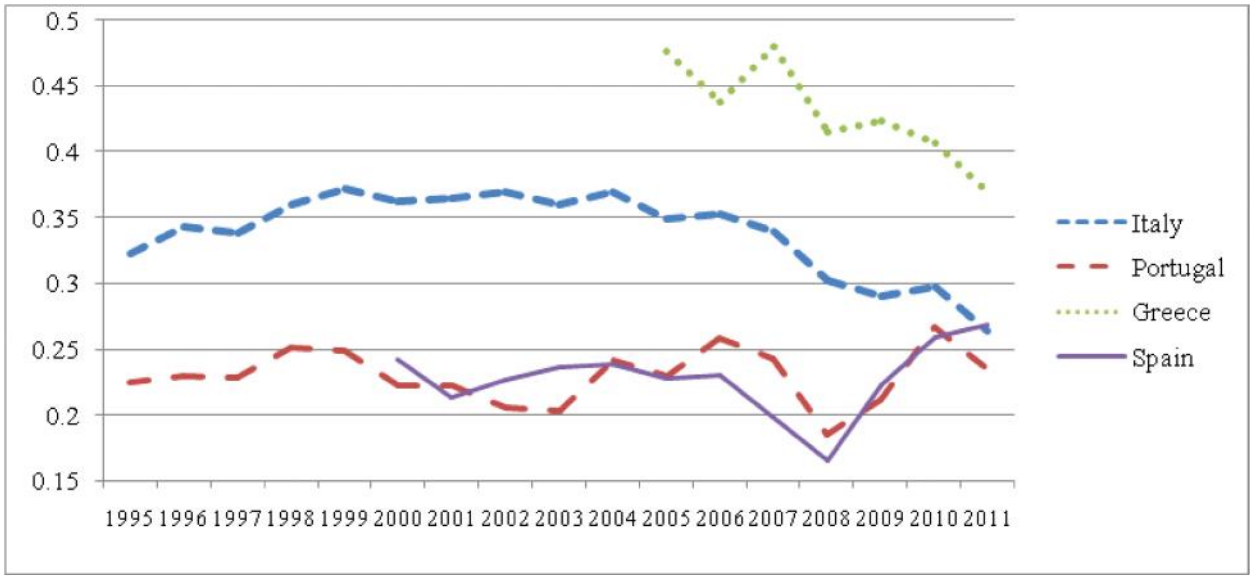
In so far as the non-financial corporate sector required increasing levels of debt to fulfill its obligations and fund its working operations the sector was engaging into Ponzi finance (Minsky, 1982, pp.65-66; 1986, p.207-208) which made their situation unsustainable over time. Firms became more exposed over time to changes in factor markets and more fundamentally to the dynamics of financial markets.[22]

It is interesting to note that as with the case of the evolution of the debt of the non-financial corporate sector (see Table 4 above), the decline in profitability of that sector following the implementation of the Euro is not unique to Spain. It is also a characteristic of oher countries of the Euro periphery including Greece, Italy and Portugal. Contrarily the the non-financial corporate sector of the Euro 'center countries' (Austria, Belgium, France and Germany) exhibited the opposite behavior. Euro 'center countries' witnessed a decline in debt (see table 3 agian) with a steady and convergent rise in profitability following the implementation of the Euro (See Figure 3 below).

In this regard it would seem that the design and policies underpining the economic integration of Europe and the adoption of a common currency (the Euro), led to a process of divergence in the performance of the entrepreneurial sector, among the core and periphery countries. Core countries entrepreneural sector improved its profitability and lowered its debt while the entrepreneural sector in periphery countries witnessed a decline in profitability and an increase in debt.

Figure 3: Profitability in the core and periphery countries of the Euro Zone (1995-2012)





Note: Profitability is measured as the ratio of net entrepreneurial income to net value added. Net entrepreunerial income is defined as gross entrepreunerial income minus the consumption of fixed capital. Gross entrepreunerial income is defined as the gross operating surplus minus interest, distributed income of corporations, reivested earnings on direct foreing investment, Property income attributed to insurance policy holders and rent.

Source: Authors'own computations on the basis of Eurostat (2014).

This divergence in the performace of the real sector contrasts markedly with the convergence achieved between core and periphery countries in financial policies and nominal variables including, among others, interest rates, public debt, and inflation, which were the basis for European integration. The convergence in financial and nominal variables did not produce convergence in the real sector.

More importantly this process of real divergence bears an important part of the explanation of the disequilibria (including the imbalances of the external sector) that were central to the onset of the Euro crisis. In this sense real divergence proved to be extremely damaging as it undermined the very process of integration and ultimately offset the 'benefits' of nominal convergence.

The household sector

Besides from non-financial corporations, households was the other sector that witnessed an expanding deficit with the implemenations of the Euro. Although, by comparison the household sector deficit was much smaller. On average, between 2003 and 2008, the non-financial corporate imbalance was seven times as large as that of the household sector (-7.0% versus 1.1% respectively).

Following the same methodology as with the non-financial corporate sector, the financial balance of the household sector can be expressed as the difference between gross savings (S_H) and gross fixed capital formation (I_H). Formally,

(4) $FB_H = S_H - I_H + OC_H$ [23]

Gross savings (S_H) are in turn equal to gross disposable income (GDI_H) minus final consumption (C_H). That is,

(5) $S_H = GDI_H - C_H$ [24]

Finally, gross disposable income (GDI_H) is identical to the sum of gross value added (GVA_H), wages (W_H), net property income (NPI_H), tranfers (Tr_H), minus taxes net of subsidies (Γ_H)

(6) $GDI_H = GVA_H + W_H + NPI_H + Tr_H - \Gamma_H$

The results of the decomposition for the financial balance of the household sector is shown in Table 6 below. It shows first, that the sector's deficit is a result of both a decrease in savings and an increase in gross capital formation. This stands in contrast to the evidence provided for non-financial corporations whose deficit is mainly explained by a fall in savings.

Table 6: Spain. Main components of the housheld financial balance 2000-2012.
As percentage of GDP

	GVA_H	W_H	NPI_H	Γ_H	Specie	GDI_H	C_H	S_H	I_H	FB_H
2000	25.0	44.4	4.5	7.7	11.8	76.7	69.6	7.1	7.3	1.3
2001	25.4	44.1	4.3	7.7	12.1	75.8	68.8	6.9	7.5	0.5
2002	25.7	43.7	3.6	7.9	12.0	75.4	68.2	7.2	7.9	0.3
2003	25.8	43.4	3.6	7.2	12.3	75.4	67.6	7.7	8.5	0.1
2004	25.8	42.8	3.6	7.2	12.5	75.2	68.2	7.0	9.0	-0.9
2005	26.0	42.6	3.7	7.3	12.8	75.2	68.3	6.9	9.5	-1.5
2006	26.1	42.3	3.7	7.5	12.9	74.4	67.9	6.5	9.7	-2.2
2007	26.2	42.9	3.5	8.1	13.2	74.4	68.1	6.3	9.6	-2.6
2008	25.7	44.6	3.3	7.9	13.3	77.3	68.6	8.7	8.4	1.0
2009	24.7	45.4	3.5	7.3	12.3	81.4	69.2	12.3	6.3	6.6
2010	23.5	44.5	3.2	7.5	11.4	79.2	70.5	8.7	5.6	3.9
2011	23.4	43.5	3.0	7.6	10.8	77.6	70.4	7.1	5.1	2.5
Δ 2002-2000	0.7	-0.7	-0.9	0.2	0.2	-1.3	-1.3	0.0	0.7	-1.0
Δ 2007-2003	0.4	-0.5	-0.1	0.9	0.9	-0.9	0.5	-1.4	1.1	-2.7
Δ 2007-2002	0.5	-0.8	-0.2	0.2	1.2	-1.0	-0.1	-0.8	1.6	-2.9

Source: Authors own on the basis of the financial accounts of the Spanish economy. Bank of Spain (2014).

The increase in gross capital formation and the decline in savings accounts for roughly 50% and 27% of the discrete change in the net borrowing/lending capacity of households between 2003 and 2007. For following periods, the decline in savings takes on a more significant role explaining 41% and 55% of the change in the net borrowing/lending capacity of households for the periods 2004-2007 and between 2005-2007 respectively. For its part, for the same periods, the gross formation of fixed capital explains 35% and 10% of the respective change.[25]

The decline in household savings (S_H) can not be attributed to a single variable but is explained by a conjunction of factors. These include, a lower wage bill, a higher tax burden, a greater level of consumption and a minor decline in net property income (see Table 6 above)

For the household sector, in contraposition to non-financial corporations, non-property income remained positive throughout the period. This is explained mainly by the fact that housholds received an increasing flow of distributed income from corporations.

Distributed income from corporations to households equaled to 8, 12, and 22 billion Euros in 2000, 2003 and 2007. This represented 30% and 60% of total net property income in 2000 and 2007 and between 2%-3% of gross disposable household income.

The other component of net property income, net interest income (NII) was also positive from 2000 to 2007 but with a clear tendency to decline in importance. NII accounted for 46%, 28% and 1% of net non-property income in 2000, 2003 and 2007. Similarly, NII represented for the same years, 3.2%, 1.5% and 0% of net property income.

The debt burden of households, measured as the sum of interest payments and principal, increased but at a lower pace than the stock of debt. According to estimates from the Bank of Spain (2006; 2007) and Eurostat (2013) the debt burden represented 10.5% of household gross disposable income in 1997, 13% in 2003, and 18% in 2007. For the same years the debt stock was 55%, 88% and 130% of gross disposable income. In other words, a similar level of debt service payments were able to support an increasing level of indebtedness. This was probably due to the Maastricht Converegence criteria, including interest rate convergence.

The decline of the debt burden in relation to the debt stock is explained partly by the decrease in interest rates which occurred as a consequence of the convergence criteria contemplated by the Maastricht treaty. Also, as important, households were able to roll over their debt over time. Households were able to roll over their debt probably because their assets had also risen siginificantly following the implementation of the Euro (249%, 249% and 286% of gross disposable income in 2000, 2003, 2007).

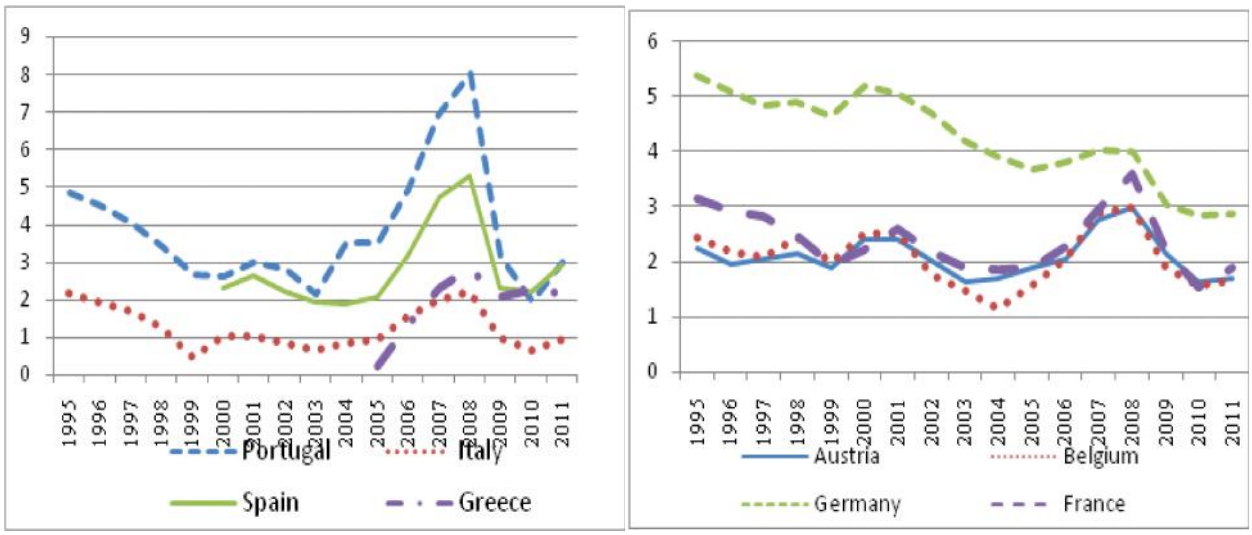
The decomposition of the debt burden shows that interest payments remained stable throughout the first half of the 2000s at roughly 3% GDI reaching a 5% peak in 2007 and 2008 and that the increase in the debt burden is explained by the principal.

Relative to other Euro countries, the debt burden of Spanish households was by no means excessive. A comparative estimate of the debt burden undertaken by the BBVA for 2006 including Spain and other Euro countries (Germany, Greece, and the Netherlands) shows that under two scenarios: (i) households pay interests and the full amount of the principal on short-term debt; (ii) households pay interests on short-term debt and roll-over 100% of the principal on short-term debt.

Under the first scenario, Spain's debt burden is estimated at 11% of GDI, one percentage point above that of Germany (10%) and below that of the Netherlands (14%). In the second scenario Spina's household debt burden is estaimated at 16%, once again above that of Germany (15%) and below that of the Netherlands (23%).[26]

Our own estimates based on the national annual accounts by institutional sector for selected periphery and center countries (Greece, Italy, Portugal and Spain; Austria, Belgium, Germany, France) show that with the exception of Germany all countries, whether belonging to the periphery or the center, witnessed, during the implementation of the Euro, an increase in the interest rate debt burden (see Figure 4 below). But the evidence also indicates that the change in the interest debt burden from 2003 until the year in which it reached its maximum (2008 for all the countries) is higher for the periphery than for center countries. For that period, the change in the interest debt burden is roughly equal to 1.5 percentage points for center counteies and ranges between 5.8 and 1.6 percentage points for the periphery countries. In the case of Spain, the change in the interest debt burden is equal to 3.3 percentage points.

Figure 4: Interest burden of the household sector in the core and the periphery as percentage of their gross domestic income (1995-2010)



Source: Authors' own on the basis of Eurostat (2014), OECD (2014) and Ameco (2014).

The stock dimension: net worth and its decomposition

The above sections examined the behavior of different sectors of the Spanish economy and centered more specifically on the household and non-financial corporate sectors from a flow perspective. This section completes the analysis by focussing on the balance sheet and net worth position of the same sectors.

The analysis of the sectoral balance sheets show that the corporate sector exhibited the weakest financial position of all the sectors and sub sectors of the Spanish economy. Available data for the period 1990 to 2011 shows a negative and deteriorating trend in the net financial worth of the non-financial corporate sector adjusted for the share and equity component (see Table 7 below).[27] This simply reflects the fact that debt grew more rapidly than assets.

The deterioration of the stock position of the non-financial corporate sector began prior to the adoption of the Euro. Nonethless, with the adoption of the Euro (corresponding to the year 2002), the balance sheet of the non-financial corpoarte sector worsened further and at a faster pace. These stock results are consistent with the flow data, namely with the increasing deficit in the net financial balance of the same sector.

The other sectors (with the exception of the external sector which mirrors the behavior of the non-financial corporate sector) did not exhibit a similar pattern. Data available for 2000-2011 for households, corporations and the general government shows that households exhibited a positive net worth throughout the period whose level did not vary very much between the year of the adoption of the Euro and the crisis (Table 7 below).

For its part the General Government exhibited in a consistent manner a negative net worth, albeit a declining net worth. The net financial worth of the government reached -40% of GDP in 2001 and -22% in 2006 and -18% in 2007. That is the government reduced its balance sheet liability position by 50% prior to the Euro Crisis (Table 7 below).

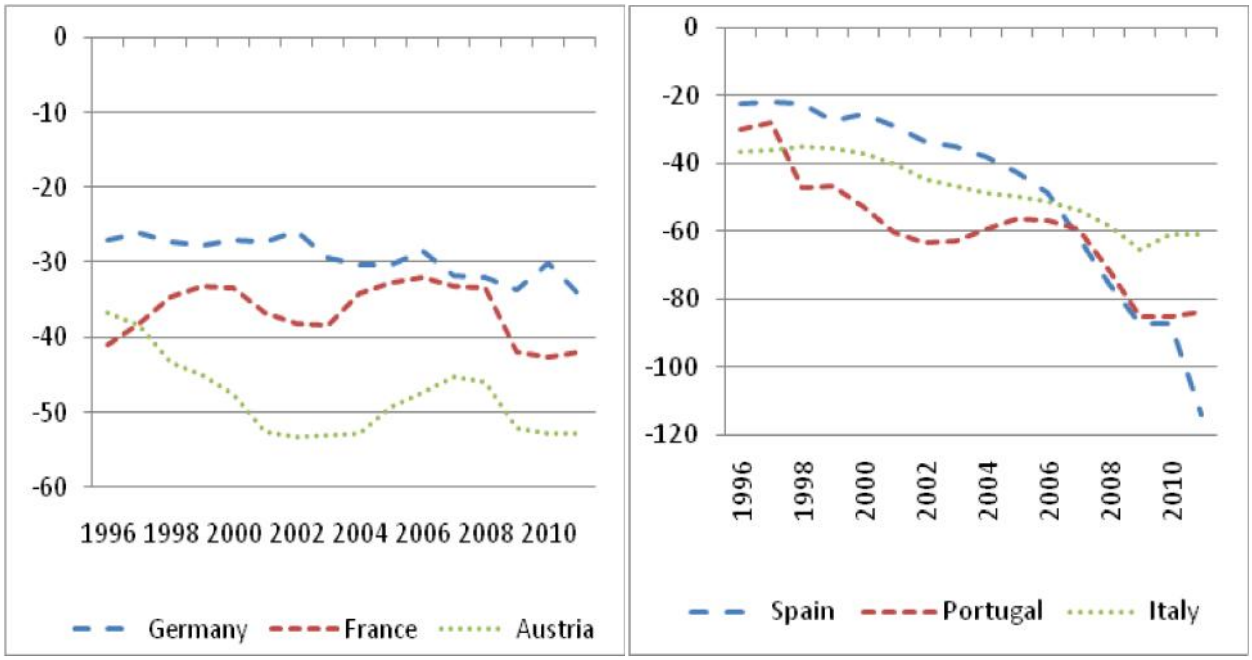
Table 7: Spain: Net financial worth of households, the non-financial corporate sector and the general government. 2000-2010. As a percentage of GDP

	Households	Non- financial corporate sector	General Government
2000	119	-25	-44
2001	104	-29	-57
2002	93	-33	-40
2003	98	-35	-37
2004	95	-38	-34
2005	96	-42	-29
2006	101	-49	-22
2007	92	-62	-18
2008	67	-76	-23
2009	77	-87	-34
2010	75	-87	-40
2011	71	-114	-49

Source: Authors'own on the basis of the financial accounts for the Spanish economy. Bank of Spain, 2013.

The widening of the deficit in the net financial worth was not only typical of Spain, in fact it is common characteristic of the periphery countries. Contrarily in the center countries the net balance sheet position of the non-financial corporate sector did not change throughout the period under study (See Figure 5).

Figure 5: Net financial worth of the non-financial corporate sector in the core and periphery countries for 1996-2010 (As percentage of GDP)



Source: Authors' own on the basis of Eurostat (2013).

The decomposition of the non-financial corporate sector net financial worth into its different assets and liabilities shows that in terms of assets, Spain's corporate sector became increasingly dependent on the component 'shares and other equity' (basically unquoted share and it excludes mutual funds). This component accounted for 39% of total assets held by the corporate sector in 2000 and this share increased to 46% and 47% in 2006 and 2007. The other important component on the asset side is 'other accounts (receivable/payable) which account around roughly 30% of total assets. Loans do not surpass 12% of total assets and securities other than shares represent less than 2% of the total.

On the liability side, the available evidence indicates that 'shares and other equity' represent its most important component followed by loans. The share of the former as a percentage of total liabilities remained roughly constant (47.5% and 45.4% in 2000 and 2007). Contrarily the importance of loans a source of finance increased (25.4% and 32.2% in 2000 and 2007).

On a net basis the negative financial worth of the corporate sector is explained by its increasing reliance on loans. Net loans explain 45% and 61% of the sector's deficit in 2000 and 2007 while 'shares and equity' explain 59% and 43% (See Table 8 below).

Table 8: Spain. Non-financial corporate sector. Composition of net financial assets 2000-2011 (In millions of Euros)

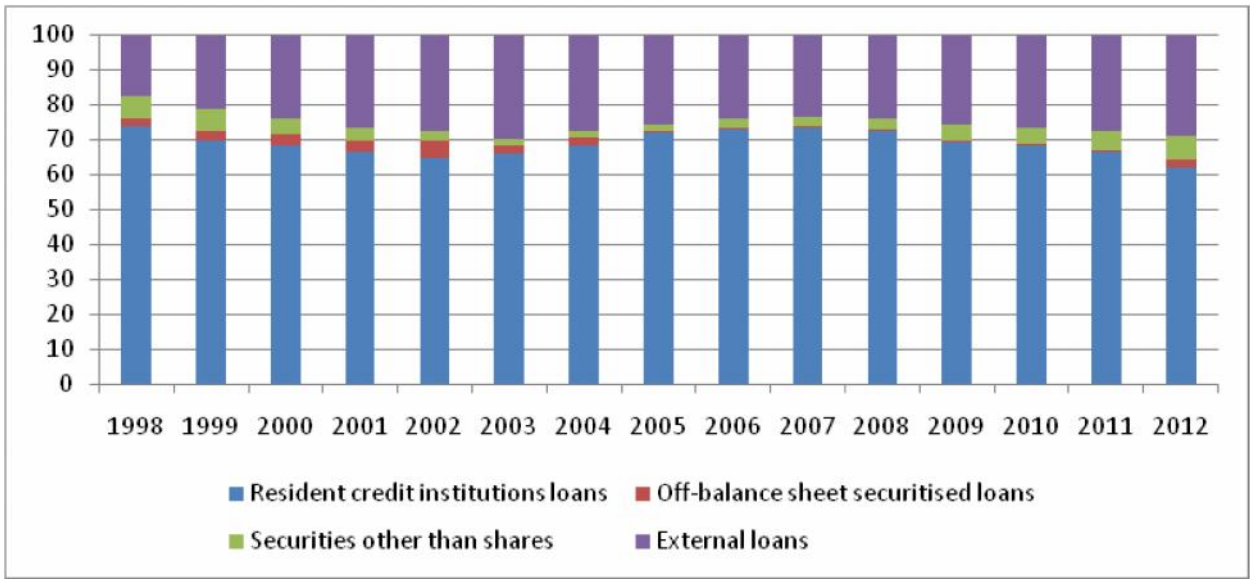
Net Financial Assets	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Total	**-748**	**-817**	**-819**	**-958**	**-1,111**	**-1,318**	**-1,623**	**-1,850**	**-1,700**	**-1,688**	**-1,605**	**-1,685**
Currency and deposits	**105**	**120**	**140**	**153**	**166**	**196**	**233**	**245**	**252**	**247**	**253**	**242**
Securities other than shares	**5**	**5**	**10**	**18**	**14**	**20**	**31**	**25**	**16**	**7**	**19**	**36**
Debt securities, excluding financial derivatives	5	5	10	19	16	21	33	25	28	16	29	48
Original maturity up to 1 year	0	1	1	10	5	6	6	10	11	2	4	13
Original maturity above 1 year	5	5	9	9	11	15	27	16	17	14	25	34
Financial derivatives	**0**	**0**	**0**	**-1**	**-1**	**-1**	**-2**	**0**	**-11**	**-9**	**-10**	**-12**
Loans	**-340**	**-403**	**-462**	**-531**	**-603**	**-741**	**-960**	**-1,135**	**-1,220**	**-1,211**	**-1,217**	**-1,207**
Original maturity up to 1 year	-112	-119	-125	-128	-148	-189	-226	-241	-243	-191	-181	-182
Original maturity above 1 year	-228	-284	-337	-403	-455	-552	-735	-893	-977	-1,020	-1,035	-1,025
Shares and other equity	**-439**	**-457**	**-424**	**-513**	**-584**	**-657**	**-757**	**-801**	**-554**	**-590**	**-518**	**-611**
Shares and other equity, excluding mutual fund shares	-455	-472	-438	-534	-621	-703	-801	-843	-580	-617	-545	-634
Quoted shares	-140	-132	-102	-136	-178	-209	-268	-321	-195	-193	-186	-219
Unquoted shares and other equity	-314	-340	-336	-398	-443	-495	-534	-522	-385	-424	-360	-415
Insurance technical reserves	**10**	**12**	**13**	**19**	**36**	**44**	**43**	**42**	**25**	**26**	**27**	**23**
Net equity of households in life insurance reserves and in pension fund reserves	**7**	**11**	**14**	**16**	**18**	**20**	**21**	**25**	**26**	**26**	**24**	**31**
Prepayments of insurance premiums and reserves for outstanding claims	**12**	**14**	**15**	**17**	**19**	**21**	**23**	**25**	**26**	**26**	**24**	**31**
Other accounts (receivable/payable)	**25**	**24**	**24**	**22**	**19**	**24**	**22**	**17**	**13**	**14**	**6**	**-9**
Memo												
Net loans as percentage of net financial assets	**45**	**49**	**56**	**55**	**54**	**56**	**59**	**61**	**72**	**72**	**76**	**72**
Net shares and other equity as percentage of net financial assets	**59**	**56**	**52**	**54**	**53**	**50**	**47**	**43**	**33**	**35**	**32**	**36**

Source: Authors' own on the basis of Eurostat and Bank for Spain (2013).

An analysis by sources of finance of the non-corporate sector validates the above result which shows that the bulk of the finance for this sector were loans provided by the domestic financial sector. More precisely, domestic loans represented roughly 70% of the non-financial corporate sector's sources of finance. Moveover as shown in table 7 above the bulk of the loans (roughly 80%) were long-term loans.

External loans represented a secondary source of finance accounting between 20% and 30% of the total. The contribution of securities other than shares and off balance sheet securitized loans was marginal (Figure 6 below).

Figure 6: Spain. Sources of finance of the non-financial corporate sector 1998-2012 (Stock magnitudes). In percentages of the total



Source: Authors' own on the basis Bank of Spain Economic Bulletins 2000-2013.

The Financial System

From the perspective of the financial system, the evidence available since the 1990s shows that between 1993-97 and 2002-07 loans to the non-financial corporate sector rose on average from 12.1% to 27.1% of GDP. The biggest contributor to the increase in loans was the services sector (6.1% and 16.8% of GDP for the same period). The other productive sectors including the construction (that is not services) saw minor increases in their loan portfolio when measured in terms of GDP. Loans provided to agriculture,

industry and construction reached on average 0.6%, 3.7% and 1.7% of GDP during the period 1993-97 and 0.9%, 4.9% and 4.4% on average for 2002-2007 (Table 10, below).

Households also secured an increase in loans mainly for home purchases (8.3% to 24.4%; 5.5% and 17.8% of GDP respectively for the same periods as industry). Loans for consumer durables rose by less than 1% point of GDP.

Considering the construction sector in its entirety, loans in industry and services, in households and the non-financial corporate sectors, represented 8% and 29.9% of the total on average in the period 1993-1997 and 2002-2007. In terms of the composition of the financial sector's loan portfolio, loans to construction represented 38% and 55.7% of the total for both periods (Table 10 below).

The analysis of the financial system's balance sheet by type of intitutions including monetary financial institutions (Bank of Spain and other monetary financial institutions) and non-monetary financial institutions (comprising other financial intermediaries and financial auxiliaries) shows that loans represented more than 50% of monetary financial institutions and other monetary financial institutions assets which hold roughly 80% of the financial system's total assets (Table 9 below). The second most important component are securities other than shares representing between 15% and 20% of the assets of monetary financial institutions and other monetary financial institutions. The participation of securities other than shares is higher for non-monetary financial institutions (roughly above 35% since the adoption of the Euro). Non-monetary financial institutions account for 20% of the financial system's assets.[28]

The composition of assets is reflected in that of the liabilities of the financial system. The liabilities of commercial banks and other credit institutions (other monetary financial institutions) comprise mainly loans for the whole period under consideration (on average above 80% of their liabilities for the period 1980-2002 and 76% of the total for the period after the adoption of the Euro by Spain).

A comparison between the composition of assets prior and after the adoption of the Euro shows that differences are visible mostly on the liabilities side of the financial system. Of particular interest is the gain in importance of the item 'securities other than shares.' Securities other than shares represented on average 4% of the total liabilities of the financial system between 1980 and 2002 and rose to reached 17% and above 20% for the period 2003-2007 and 2008-2013.

At a more detailed level 'securities other than shares' accounted for 4% of total liabilities of other monetary financial system institutions liabilities prior to the adoption of the Euro (19809-2002) and about 14% thereafter (12.6%, 14.9% and 17.3% for 2003-2007, 2008-2011 and 2012-2013 respectively). In the case of non-monetary financial institutions 'securities other than shares' accounted for a greater share of total liabilities in the period following the implemenation of the Euro (2.6%, 29%, 47% and 41% for 1991-2002, 2003-2007, 2008-2011 and 2012-2013 of the total liabilities of the non-monetary financial institutions).

Table 9: Spain. Composition of financial system assets by financial institution 1980-2013

(Percentage of total assets of instutional group)

	Currency and deposits	Securities other than shares	Derivatives	Loans	Shares and other equity	Insurance technical reserves	Other accounts receivables
Monetary financial institutions							
1980-1990	28.3	14.7	…	51.5	2.5	2.3	…
1991-2002	28.8	16.6	…	45.4	7.4	1.4	...
2003-2007	18.2	15.2	0.4	56.2	9.2	0.9	…
2008-2011	15.7	19.1	0.9	56.2	7.7	1.1	…
2012-2013	18.4	25.8	1.1	46.2	8.0	1.3	…
Other monetary financial institutions							
1980-1990	28.2	13.3	…	53.7	2.8	2.0	…
1991-2002	27.1	14.5	…	48.9	8.2	1.2	…
2003-2007	16.4	13.8	0.4	59.2	9.8	0.9	…
2008-2011	13.5	17.4	1.0	59.8	8.2	1.1	…
2012-2013	12.1	25.6	1.3	52.1	9.0	1.3	…
Non-monetary financial institutions							
1980-1990	16.3	30.6	…	15.0	17.5	9.7	11.0
1991-2002	23.6	47.9	…	6.2	14.0	2.4	10.9
2003-2007	33.2	35.8	0.4	8.5	17.0	1.8	10.8
2008-2011	55.2	25.2	0.1	6.0	9.6	1.4	10.6
2012-2013	47.1	28.6	0.1	10.1	9.7	1.6	10.3
Other financial intermediaries							
1980-1990	5.5	37.5	…	1.8	51.7	…	4.9
1991-2002	31.3	46.6	…	6.5	13.4	…	2.2
2003-2007	42.1	25.1	0.7	13.4	17.3	…	2.1
2008-2011	69.8	12.7	0.2	7.9	8.1	…	1.4
2012-2013	61.6	13.2	0.1	15.4	8.6	…	1.2
Financial Auxiliaries							
1980-1990	0.9	9.6	…	79.2	7.0		3.4
1991-2002	17.4	45.2	…	20.5	7.4		9.4
2003-2007	24.8	58.6	…	0.3	11.1		5.2
2008-2011	47.5	32.3	…	0.4	12.7		7.0
2012-2013	82.5	3.5	…	0.0	3.0		10.9

Note: Financial institutions include the Bank of Spain, deposit institutions including commercial banks, savings institutions and credit cooperatives, other financial intermediaries (such as venture capital institutions, Collective investment institutions (other than MMFs), securities-dealer companies, financial vehicle corporations, venture capital funds and companies, financial holding companies and issuers of preference shares), financial auxiliaries (Deposit guarantee funds, securities brokers, mutual guarantee companies, appraisal companies, managementcompanies (of pension funds, mutual funds and investment companies), operators of organised markets and companies performing settlement and market clearing functions, Insurance corporations and pension funds, Life and risk insurance corporations, non-profit insurance institutions, the *Consorcio de Compensación de Seguros* and autonomous pension funds. The general government includes central, regional and local governments as well as social security funds. Securities other than shares includes short-term (treasury bills, commercial paper at up to one year issued by general government, financial corporations and non-financial corporations), long –term (medium and long-term public debt. Commercial paper at more than one year and bonds issued by financial corporations and nonfinancial corporations and securities issued by non-residents that are held by residents) securities and financial derivatives (options, futures and similar instruments and (since 2005) swaps). Shares and other equity include quoted (shares of financial corporations (except investment companies) and non-financial corporations quoted on domestic and foreign marketsand unquoted shares (of financial and non-financial corporations) other equity (capital of companies and public bodies that do not have the legal status of a *sociedad anónima* (public limited company), capital contributions to branches (of non-residents in Spain and of residents in Spain abroad), non-residents' real-estate investments, investments in the capital of international organisations and contributions from deposit guarantee funds to the FROB, investment fund units, and investment company shares (shares in capital-market and real-estate investment companies). Insurance technical reserves are life and pension funds reserves and the prepayments of

insurance premiums and reserves for outstanding claims. Other accounts receivables refer to trade credit and advances and other accounts.

Source: Authors' own on the basis of the financial accounts of the Spanish economy. Bank of Spain (2014) and

Methodological Notes on the Financial Accounts of the Spanish Economy (2014).

Table 10: Spain. Credit of the financial system to productive activities, households and construction 1993-2013. As percentage of GDP and percentage of total credit

	Productive activities						Households				Construction		
					Services								
Period	Total	Agriculture and fisheries	Industry (except construction)	Construction	Total	Construction	Total	Home purchases and improvement	Home purchases	Consumer durables	Total	Construction and real estate (industry)	Construction and real estate (households)
As percentage of GDP													
1993-1997	**12.1**	0.6	3.7	1.7	**6.1**	1.0	**8.3**	5.8	5.5	0.9	**8.4**	2.6	5.8
1998-2001	**15.9**	0.7	4.3	2.2	**8.7**	1.6	**12.8**	9.2	8.8	1.5	**13.0**	3.8	9.2
2002-2007	**27.1**	0.9	4.9	4.4	**16.8**	6.8	**24.4**	18.7	17.8	2.1	**29.9**	11.2	18.7
2008-2009	**44.0**	1.1	6.8	6.4	**29.8**	14.1	**35.8**	28.6	27.3	2.3	**49.1**	20.5	28.6
2010-2013	**37.8**	0.9	5.9	4.0	**27.0**	11.6	**33.1**	27.4	26.1	1.5	**43.0**	15.7	27.4
As percentage of total credit granted by the financial system													
1993-1997	**58.9**	2.8	18.9	8.7	**28.5**	4.5	**37.0**	24.9	23.8	4.6	**38.1**	13.2	24.9
1998-2001	**54.1**	2.4	14.7	7.4	**29.6**	5.4	**43.4**	31.0	29.6	4.9	**43.7**	12.8	31.0
2002-2007	**51.6**	1.8	9.8	8.3	**31.6**	12.1	**46.5**	35.4	33.7	4.1	**55.7**	20.4	35.4
2008-2009	**54.1**	1.3	8.3	7.9	**36.6**	17.3	**44.1**	35.2	33.6	2.9	**60.4**	25.2	35.2
2010-2013	**51.7**	1.2	8.1	5.5	**37.0**	15.8	**45.6**	37.7	36.1	2.1	**59.0**	21.2	37.7

Note: Credit expressed as a percentage of GDP does not fall during the crisis because the fall in nominal GDP was greater than that of credit.

Source: Authors' own on the basis of Bank of Spain. Stastical bulletins 1998-2014.

An analysis by counterpart sector shows that financial sector's liabilities were held not only by domestic agents (households and non-profit organizations and financial institutions with 34.4% and 26% of the total) but also by non-residents (27% of the total). (Table 11).

Table 11: Spain. Liabilities of financial institutions by counterpart sector. Percentages of the total 1980-2013. Averages

	Non-financial sector	Financial Institutions	Government	Households and non-profit organizations	Rest of the World
1980-1990	12.1	27.6	5.0	47.2	8.1
1991-2002	9.0	26.4	4.7	45.9	14.1
2003-2007	**9.5**	**26.1**	**3.0**	**34.4**	**27.0**
2008-2011	7.2	36.5	3.0	27.3	25.9
2012-2013	7.2	39.1	2.6	28.7	22.4

Source: Authors' own on the basis of the financial accounts of the Spanish economy. Bank of Spain (2013).

A further analysis of the liabilities of the financial sector by counterpart sector and by the most important financial instruments (currency and deposits and securities other than shares) shows a similar pattern in that a significant part of the financial sectors' liabilities were held by the rest of the world (23% of deposits and 63.6% of securities other than shares). In fact the rest of the world accounted for the largest share of securities other than shares (Table 12).

Table 12: Spain. Liabilities of financial institutions by counterpart sector and (most significant) financial instrument. Percentages of the total. 1980-2013. Averages

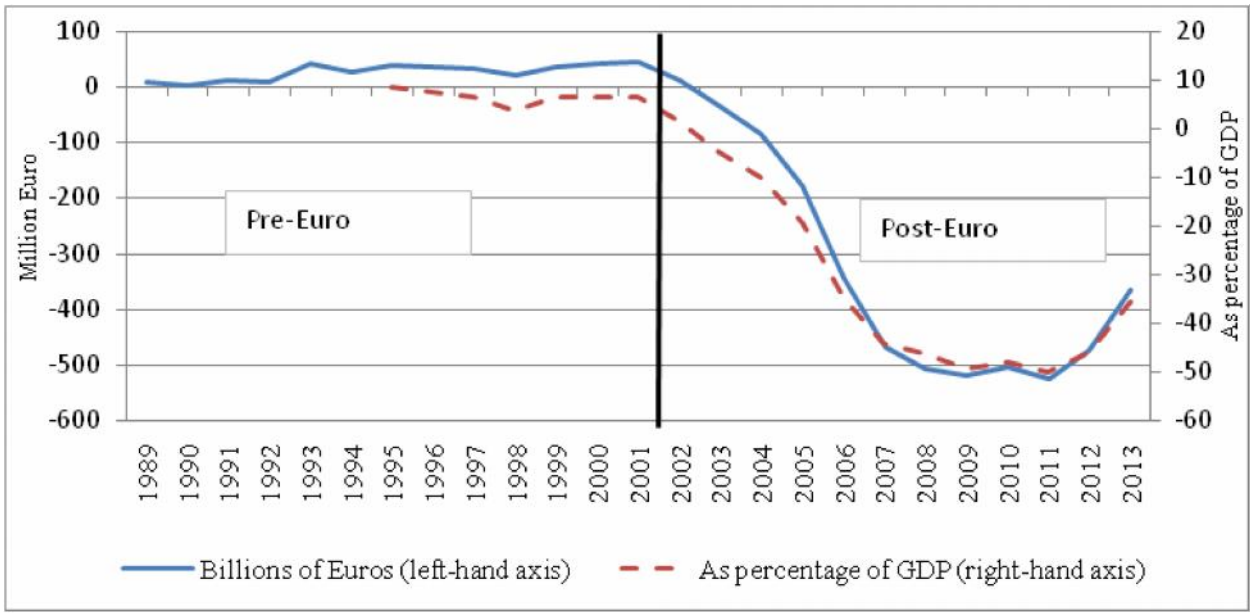
	Non-financial corporations	Domestic financial institutions	Government	Households and non-profit organizations	Rest of the world
	Currency and deposits				
1980-1990	10.5	29.1	4.5	47.5	8.4
1991-2002	8.3	30.2	4.8	40.1	16.5
2003-2007	**10.0**	**31.0**	**4.5**	**31.5**	**23.1**
2008-2011	8.0	38.6	3.6	28.8	20.9
2012-2013	7.5	38.3	2.9	30.6	20.7
	Securities other than shares				
1980-1990	31.0	24.8	0.0	40.7	3.5
1991-2002	13.6	43.6	0.3	24.6	17.9
2003-2007	**3.3**	**29.0**	**0.1**	**4.0**	**63.6**
2008-2011	1.9	44.0	1.0	2.3	50.8
2012-2013	3.3	57.6	0.2	1.8	37.0

Source: Authors' own on the basis of the financial accounts of the Spanish economy. Bank of Spain (2014).

The significance of the sector Rest of the World as a issuer of the liabilities of the financial sector is further underscored by the fact that the position of the financial sector vis-a-vis the rest of the world changed from net creditor to net debtor. Moreover the inflection point corresponds to the year Spain adopted the Euro.

Figure 7 below shows the net financial position of the financial sector with respect the external sector as a percentage of GDP between 1989 and 2013. In the period between 1989 and 2002, the position of the financial sector was without exception positive and actually increased from 8 to 45 billion Euro in 2001 (averaging 6.6% of GDP). Thereafter the net balance sheet position of the financial sector became increasingly negative reaching over 400 billion Euro (or the equivalent of -44% of GDP) in 2007 prior to the crisis. The balance sheet position still deteriorated afterwards and achived a minimum of -50% of GDP in 2011 before starting a recovery process.

Figure 7: Spain. Net balance sheet position of the financial sector vis-a-vis the rest of the world in billion Euro and as percentage of GDP (1989-2013).



Source: Authors' own on the basis of the financial accounts of the Spanish economy. Bank of Spain (2014).

The financial position of the financial is reflected in an increased leverage that explain to a great extent the increase in the profitability of the sector following the implementation of the Euro. Available data for 1998 to 2011 shows that the rate of return over equity (ROE), a basic measure of banks profitability, experienced a steady decline between 1998 and 2003 followed by a rising trend thereafter until 2007.[29]

The rise in ROE is explained mainly by an expansion in leverage (L). From 2002 until 2007 leverage rose from 11.4 to 13.2 (Table 13 below). The rate of return on assets (ROA) also increased but as the decomposition of ROA into its main components show, this was the result of a decline in costs (i.e., operating expenses) rather than an increase in income. In fact both the net interest income (NII) and net non-interest income (NNII) as a percentage of assets experienced a decline. [30]

Table 13: Spain. Rate of return over equity (ROE), rate of return over assets (ROA), leverage (L) and components of ROA for the financial sector (1998-2009; In percentage of assets).

	ROE	L	ROA	Components of ROA				
				NII	NNII	OE	PRO	T
1998	9.6	12.5	0.77	2.40	1.13	2.14	0.44	0.19
1999	9.7	12.9	0.76	2.23	1.03	2.06	0.24	0.20
2000	9.3	11.5	0.81	2.18	1.21	2.07	0.36	0.15
2001	8.7	11.5	0.76	2.45	0.94	1.88	0.65	0.10
2002	8.5	11.4	0.75	2.24	0.97	1.82	0.57	0.08
2003	8.1	11.7	0.69	2.11	0.92	1.64	0.53	0.17
2004	7.6	11.0	0.69	1.95	0.88	1.64	0.37	0.13
2005	8.5	11.7	0.73	1.64	0.87	1.30	0.34	0.14
2006	11.0	12.9	0.86	1.62	1.00	1.16	0.40	0.20
2007	12.7	13.2	0.96	1.65	0.96	1.09	0.40	0.16
2008	7.9	12.7	0.62	1.59	0.77	1.02	0.66	0.06
2009	5.0	12.0	0.42	1.63	0.71	0.97	0.91	0.04

Note: NII: net interest income; NNII: non-net interest income; OE: opertating expenses; PRO: provisions; T: income taxes. Source: Authors'own on the basis of OECD (2014).

The external sector

The balance sheet position of the non-financial corporate and that of the financial sectors were reflected in the net investment position of the country. The net investment (it includes net FDI, portfolio and other investment) position is defined is the net balance between its international financial assets and liabilities. It reflects the net debtor or creditor position of the country with respect to the rest of the world. The net investment position can be interpreted as an indicator of a country's financial fragility both in terms of size and in terms of its composition (Feito, 2011).

In the case of Spain available data for the period 1992-2013 shows that the net investment position deteriorated significantly. The subdivision of this period into the pre-Euro (1992-2002) and post Euro (2003-2007) shows that the net investment position of the country expanded by Euro $260 in the former period and by $538 billion in the latter period. Thereafter between 2007 and 2008 the net international investment position came to a virtual halt and barely expanded in 2009. This stock behavior is explained by first by the significant expansion between 2002-2007 of portfolio inflows and then their drastic reduction in 2007 prior to the contraction of GDP in 2008 and 2009 (Table 14).

Table 14: Spain. Net International Investment Position and its components in billions of Euro and as percentage of total (1992-2013)

Net international investment position	Net international investment position (excluding Bank of Spain)	Direct Investment	Portfolio investment	Other investment	Financial derivatives
In billion Euro					
1992	-103.7	-46.4	-34.1	-23.3	…
2002	-363.7	-89.2	-105.7	-168.9	…
2007	-901.7	-2.6	-648.5	-231.8	-18.8
2008	-914.0	1.3	-603.7	-305.1	-6.4
2009	-1026.3	-4.5	-693.7	-327.1	-1.0
2013	-863.4	-52.8	-609.5	-203.7	2.6
As percentage of the total					
1992	100.0	44.7	32.8	22.5	…
2002	100.0	24.5	29.0	46.4	…
2007	100.0	0.3	71.9	25.7	2.1
2008	100.0	-0.1	66.1	33.4	0.7
2009	100.0	0.4	67.6	31.9	0.1
2013	100.0	6.1	70.6	23.6	-0.3

Source: Authors' own on the basis of the statistical bulletin of the Bank of Spain (2014). Other investment includes loans, deposits and other investments.

The decomposition of the net international investment position into its components shows that portfolio investment and other investment explain the bulk of the increase in the debt of Spain relative to the rest of the world. Portfolio investment accounted for over a quarter of the net international investment position in 2002 and close to three quarters by 2007. The rapid expansion of portfolio inflows during this period

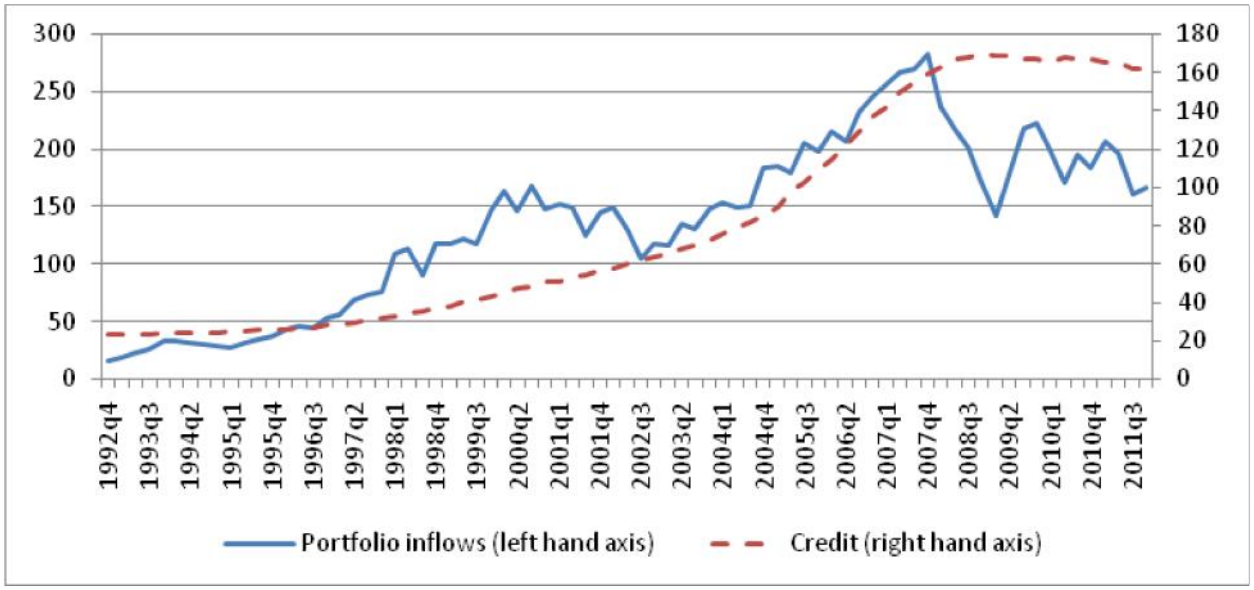
which largely surpassed portfolio outflows contibuted significantly to expand their stock. Contrarily the decline in the importance of foreign direct investment is manifest as in 2002 it accounted for 25% of the net international investment position and 0.3% in 2007.

Further analysis focussing on portfolio investment and other investment by sector shows that by large the non-financial corporate sector and the financial sector explain the large increase in both categories. The share of the financial and non-financial corporations in the balance sheet portfolio investment expanded from 50% to 90% of the total between 2002 and 2007 (See Table 19 in the annex).

Obviously, the increasing level of external indebtedness generated interest rate payment obligations that are reflected in the growing negative income balance of the balance of payments. This contributed significantly but nonethless to a lesser extent than the imbalance in goods and services, to the generation of the external current account deficit (See Table 20 in the annex). This by itself can generate a cumulative process, as higher portfolio flows cause higher levels of debt and interest payments which in turn, other things being equal, expand the current account deficit which requires increasing levels of portfolio flows to fill the financing gap.

Similarly in 2007 as the country registered a sudden stop and reversal in its portfolio flows, most likely due to the contagion effects caused by the onset of the Global Financial Crisis (2007-2009), the net international investment stock position did not change substantially. In fact between 2007 and 2008, the international net investment stock position barely changed and increased slightly in 2009. Moreover as portfolio flows fell credit of the financial system contracted (see Figure 8 below).

Figure 8: Spain. Indices of fortfolio net flows and the international and credit of the financial system to resident sectors (1992q4-2011q3) (2005=100)



Source: Authors' own on the basis of the statistical bulletin of the Bank of Spain (2014).

This had an effect on the different sectors of the economy including on the real estate and construction sectors. Moreover the fall in house and real estate prices further impaired the balance sheets of the financial sector and the non-financial corporate sector. In this sense and according to the logic presented in this paper we view the fall in in house and real estate prices as an aggravating rather than a triggering phenomenon of the Spanish crisis. A more detailed analysis of this issue is provided in the next section.

The housing market 'bubble' explanation and its underpinning logic

The crisis of Spain and also of the periphery countries of the Euro Zone is traced in a wide part of the literature on the subject to the indebtedness of households and a corresponding bubble in the housing market. The logic underpinning this view is based on the fact that all crises involve a price boom in an asset or a range of assets which become objects of speculation. That is they are traded mainly for short term capital gains resulting from anticipated increases in their prices. A fundamental aspect of asset speculation is that it allows the boom phase to continue and become widespread and cumulative over time. These assets are generally related to other trading activities and can also be used as collateral to further expand liquidity. In this way they can become a platform to transform other assets into 'objects of speculation.'

A prominent 'object of speculation' is real estate residential property as illustrated in the Nordic (1989), the Japanese and Asian, the Savings and Loan (1986) and the sub prime (2007) crises episodes.[31] On average in the Nordic case and Japan the prices of real houses measured in real terms increased from trough-to-peak by 30% and 100% respectively. In the case of the Asian Crisis, the price of real estate properties measured by a property stock index rose above 100% for Malaysia and Thailand and at a rate of 50% for Malaysia. Finally, in the cases of the savings and loan debacle and the subprime crisis, real estate properties witnessed an accumulated increase of 51% and 184% from their trough-to-peak values (Table 15 below). Finally in the subprime crisis, the accumulated increase in real estate properties from trough-to-peak comprising the period 1997-2006 reached 184%.[32]

On a first approximation the Spanish case seems to conform to this norm. A cycle analysis of the data on price-to-rent, price-to-income and real price indices of housing for the period 1970-2011 shows that real estate witnessed from the end of the 1990s and beginning of the 2000s one of the most important expansionary phases of the past forty years.

This expansionary phase began in 1997q4 for the price-to-rent and real price indices lasting for 38 and 40 quarters until 2006q4 and 2007q3 respectively. In the case of the price-to-income index this expansionary phase lasted also, as in the case of the price-to-rent ratio, 38 quarters (2000q3 to 2006q4). The duration of this particular phase was between two and three times that of the duration of the average expansionary phase for the entire 1971q1-2011q3 period.

Similarly in terms of amplitude this cycle phase expanded between five and six times above the average for the whole period (99.2, 73.5 and 99.2; 20.6, 11.6 and 16.4 for the price-to-rent, price-to-income and real price for 1997q4-2006q4 and 1971q1-2011q3 respectively). The persistence of the duration and robust amplitude are reflected is the strong performance registered in the accumulative effect (the product of the expansion and amplitude). (Table 15 below).

However, at a closer inspection, this real estate cycle phase does not appear to be the most expansionary in Spain's recent history. Indeed, the available data also indicates that the Spanish real estate industry witnessed an expansionary phase in the later part of the 1980's that rivals the most recent one in terms of several cycle indicators.

A comparative analysis between both periods (highlighted in bold in Table 1) reveals that the 1980s expansionary phase exhibited a greater amplitude relative to that of the 1990s-2000s, measured both in terms of percentage increase (rate of change of the value of the index between the trough and the peak) and in the compound annual growth rate (year-to-year growth rate over a period). In fact the percentage increase of the amplitude during the 1980s was 20%, 42% and 10% above that of the 1990s-2000s for the price-to-rent, price-to-income and real house prices.

In spite of the fact that the duration of the expansionary phase of housing lasted longer in the 1990's-2000s episode relative to that of the 1980s for price-to-income and real prices (for price-to-rent the duration is the same in both episodes), the intensity (the ratio of the amplitude to the duration) which measures the amplitude per quarter is always greater in the latter case. For the 1980s the intensity reaches 3.7, 4.7, 4.9 for price-to-rent, price-to-income and real price, whereas during the 1990s-2000s it reaches 2.6, 1.9 and 2.5.

The above analysis begs the question of why if the real estate residential sector experienced important expansions in the 1980s and in the 1990's-2000s of comparable magnitude (and duration in some case) only in the latter case was it followed by a crisis. This line of questioning is reinforced by the fact that the expansionary phase of the 1990s-2000s was not exclusive to Spain. In fact many other European countries that did not experience a crisis, such as that of the peripheral countries also experienced similar increase in the value of residential property. The rise in property values was a Euro phenomenon and more than that an European phenomenon (See Figure 9 below).

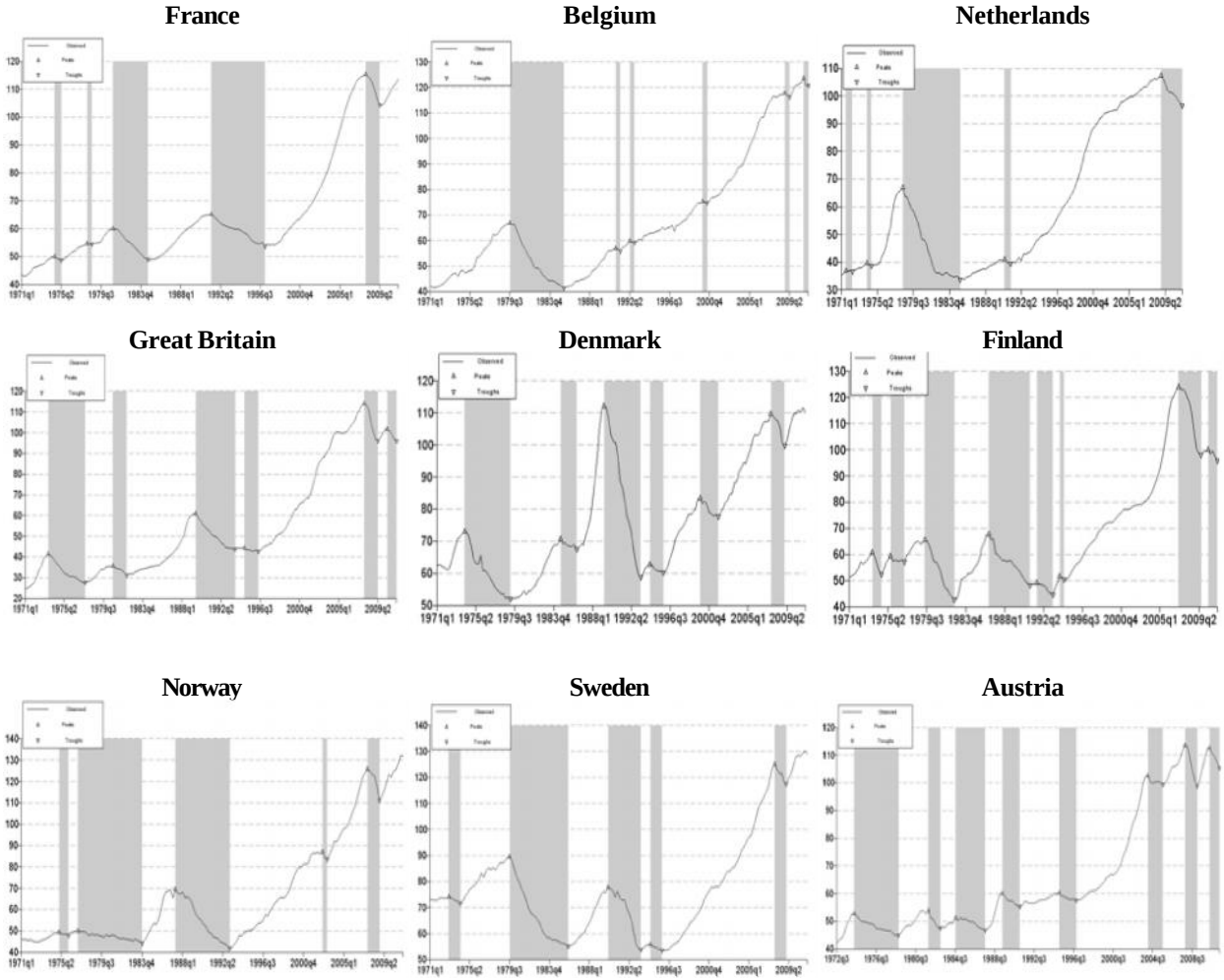
Table 15 : Spain. Cycle indicators for house prices, rent-to-price and rent-to-income, 1971q1-2011q3

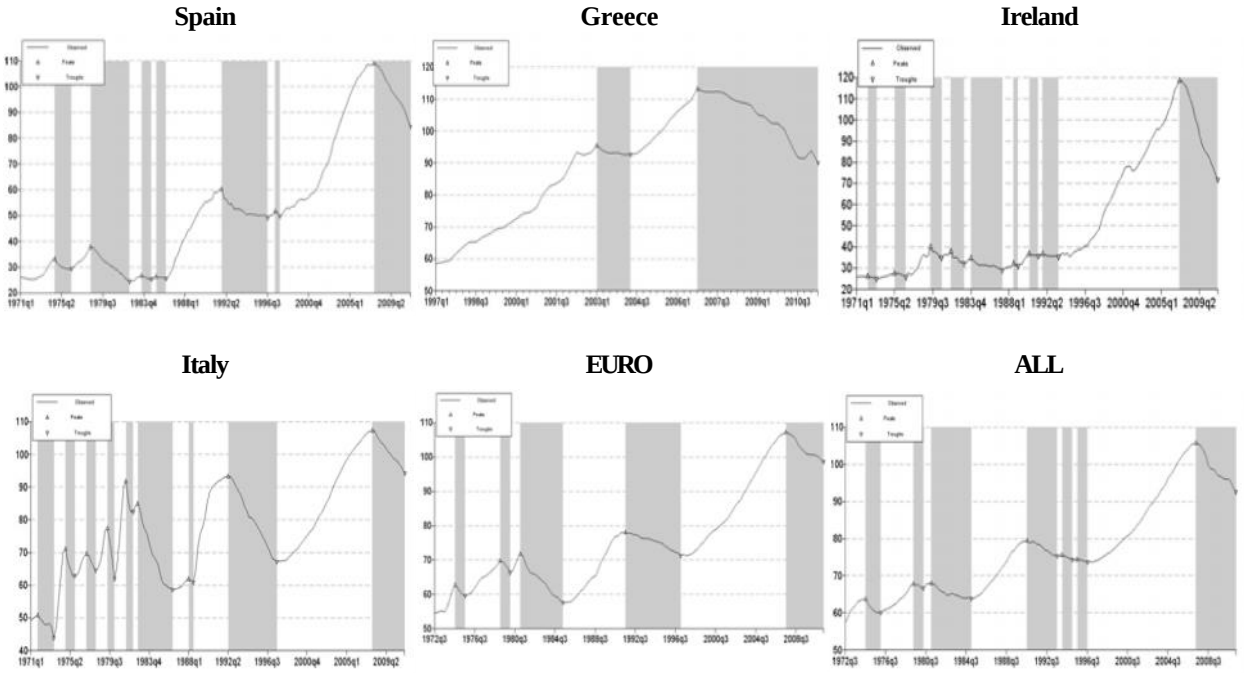
Series	Troughs	Peaks	Amplitude			Duration (# quarters)	Intensity (%)	Cumulated Effect (d)
Price-to-rent								
All phases			Interval (a)	Increase (%) (b)	Average annual growth (%)(c)			
	1972q1	1974q3	21.8-29.2	33.9	11.2	11	3.1	186.5
	1975q3	1978q3	27.3-42.3	54.9	14.4	13	3.8	356.9
	1982q2	**1991q3**	**29.6-71.4**	**141.2**	**9.7**	**38**	**3.7**	**2,682.8**
	1994q2	1994q4	59.6-59.7	0.16	0.2	3	0.05	0.24
	1996q3	1997q2	55.1-56.2	1.9	2.0	4	0.5	3.8
	1997q4	**2006q4**	**53.7-107.**	**99.2**	**7.5**	**381**	**2.6**	**1,884.8**
Averages								
Peak-to-Trough				-6.4		6.8	-0.9	26.8
Trough-to-Peak				20.6		16.7	1.2	172.0
Peak-to-Peak				...		23.5	...	...
Trough-to-Trough				...		20.6	...	...
Price-to-income								
All phases			Interval	Increase (%)	Average annual growth (%)			
	1973q1	1974q1	45.8-51.6	12.7	10.0	5	2.5	31.8
	1976q2	1978q2	47.6-60.4	26.9	11.2	9	2.4	121.1
	1982q2	1983q3	41.4-44.2	6.8	14.0	2	3.4	6.8
	1984q2	1985q2	43.4-44.1	1.6	1.3	5	0.3	4.0
	1986q1	**1990q1**	**41.4-74.8**	**80.7**	**14.9**	**17**	**4.7**	**686**
	1990q4	1991q3	72.9-76.4	4.8	4.8	4	1.2	9.6
	1993q2	1994q1	66.3-67.9	2.4	2.4	4	0.6	4.8
	1996q3	1997q2	57.6-59.9	4.0	4.0	4	1	8
	1997q4	2000q1	57.7-61.8	2.8	7.1	10	0.3	14
	2000q3	**2006q4**	**61.1-106.**	**73.5**	**6.0**	**38**	**1.93**	**1,396.5**
Averages								
Peak-to-Trough				-6.1		5.9	-1.04	-18.0
Trough-to-Peak				11.6		8.2	1.40	47.6
Peak-to-Peak				...		14.3	...	...
Trough-to-Trough				...		12.2	...	...
Real prices								
All phases			Interval	Increase (%)	Average annual growth (%)			
	1972q2	1974q3	21.8-30.2	38.5	13.9	10	3.9	192.5
	1976q2	1978q2	27.9-41.7	49.5	19.6	9	5.5	222.8
	1982q2	1983q3	29.6-33.5	13.2	8.6	6	2.2	39.6
	1984q3	1985q1	33.6-34.3	2.1	2.8	3	0.7	3.2
	1986q1	**1991q4**	**34.3-75.0**	**118.7**	**13.9**	**24**	**4.9**	**1,424.4**
	1996q3	1997q2	55.1-56.2	2.0	2.0	4	0.5	4
	1997q4	**2007q3**	**53.7-107.**	**99.2**	**7.1**	**40**	**2.5**	**1,984**
Averages								
Peak-to-Trough				-5.2		8.6	-0.6	-22.4
Trough-to-Peak				16.4		12.7	1.3	104.1
Peak-to-Peak				...		22	...	...
Trough-to-Trough				...		17	...	...

Note: The price-to-income ratio refers to nominal house prices divided by nominal disposable income per head, index based in 2005. The price-r-rent ratio is defined as nominal house prices to rent prices, index based in 2005. Real house price is a seasonally adjusted, index based in 2005. The methodology to obtain the cycle turning points and the amplitude and duration are explained in footnote 7 above. The cumulated effect (column e) is equal to the duration multiplied by the amplitude and divided by two. The interval (column a) refers to the lowest and highest values (nominal and real) from the trough to the peak of the cycle. The increase (column b) is the percentual rate of increase between both of these values. The average annual growth (column c) is the growth on a yearly basis divided by the number of years.

Source: Authors' own on the basis of OECD (2013) and Grocer (2014).

Figure 9: Evolution of real housing prices for selected European countries and cycle turning points, 1971q1-2011q2





Note: The white and shaded areas represent expansions and contractions respectively. The peaks of the expansion are denoted by Ä and the troughs by ¼%.

ALL refers to all European countries that are included in OECD housing price database.

Source: Author's own based on OECD (2013) and Grocer (2014).

As can be appreciated by simple visual inspection, a majority of European countries (14 in Figure 9) whether belonging or not to the Euro, or to the Core or periphery countries experienced in the 1990's and 2000's a significant increase in residential property prices. The behavior of the aggreate EURO countries and ALL also follows the same behavior. The exception to the rule is Germany. Contrarily to all other cases Germany experienced a contractionary phase in the 2000s lasting from 1999q4 until 2006q2.

A related issue is to what extent this increase in real estate prices can be said to constitute a wealth effect. To this end we computed, where available, the value of dwelling and non-financial assets as a percentage of household net disposable income (Tables 16 and 17 below).

The evidence provided for the core zone countries of the Euro Zone, Finland and Italy shows that the value of dwellings increased on average by 7% from 181% to 195% of GDP between 1996-2000 and 2001-2007. The maximum rise is recorded by Belgium (15%). For its part, the value of non-financial wealth is

only available only for Austria, Finlanda and France. It expanded by 2% and 6% in the two former cases and by 49% in the case of France.

As a complement financial assets can also be an important source of household wealth. The evidence available for all countries shows that on average the level of net financial worth is higher in the Euro Zone center countries that in the periphery. More importantly, the level of net financial worth in relation to net dsiposable income increased between 1996-2000 and 2001-2007 for all countries of the center (from 159.9%, to 173.8%, 414.8% to 394.4%, 1991.% to 201.3%, 142.4% to 170.1% on average between both period for Austria, Belgium, France and Germany).

Contrarily in the case of the periphery countries, net financial worth as a percentage of net disposable income increased only in the case of Italy (296.8% and 310.5% on average between 1996-2000 and 2001-2007). The rest of the countries net financial worth declined by 36%, 19% and 9% in the cases of Greece, Portugal and Spain respectively.

Table 16: Household wealth and indebtedness as percentage of nominal net disposable income 1996-2012 for Euro core countries

Countries	Net Worth	Net financial worth	Non-financial assets		Financial Assets		Liabilities
			Total	Dwellings	Total	Shares and other equity	
Austria							
1996-2000	392.2	159.9	232.3	**184.2**	233.7	**50.3**	73.8
2001-2007	411.2	173.8	237.4	**190.8**	259.7	**63.1**	85.8
2008-2009	427.3	183.9	243.4	**198.1**	276.3	**63.5**	92.4
2010-2012	449.8	195.5	254.4	**207.8**	290.8	**71.8**	95.3
Belgium							
1996-2000	570.9	414.8	…	**156.0**	483.1	**182.9**	143.6
2001-2007	574.2	394.4	…	**179.8**	342.1	**178.0**	73.9
2008-2009	544.8	337.6	…	**207.2**	424.9	**136.9**	87.4
2010-2012	571.2	354.3	…	**216.9**	449.3	**136.9**	95.0
France							
1996-2000	511.7	199.1	312.6	**200.8**	267.0	**78.8**	67.9
2001-2007	668.9	201.3	467.6	**219.5**	279.6	**79.0**	78.3
2008-2009	739.8	197.2	542.6	**247.8**	290.4	**70.6**	93.3
2010-2012	788.0	209.2	578.9	**261.4**	310.4	**72.8**	101.2
Germany							
1996-2000	341.0	142.4	…	**198.6**	252.0	**62.2**	109.6
2001-2007	375.2	170.1	…	**205.1**	280.2	**67.2**	110.1
2008-2009	410.8	185.9	…	**224.9**	285.5	**52.0**	99.6
2010-2012	424.2	196.0	…	**228.2**	292.1	**52.8**	96.1
Finland							
1996-2000	320.4	119.4	200.9	**169.3**	185.3	**77.7**	65.9
2001-2007	342.6	130.5	212.1	**183.1**	221.6	**97.1**	91.2
2008-2009	321.9	99.0	222.9	**194.9**	216.5	**82.0**	117.5
2010-2012	313.1	101.6	209.6	**184.1**	222.4	**87.6**	120.9
Average							
1996-2000	427.2	207.1	248.6	181.8	284.2	90.4	92.2
2001-2007	474.4	214.0	305.7	195.7	276.7	96.9	87.9
2008-2009	488.9	200.7	336.3	214.6	298.7	81.0	98.0
2010-2012	509.3	211.3	347.6	219.7	313.0	84.4	101.7
Standard Deviation							
1996-2000	212.2	142.0	147.9	73.3	162.0	60.6	44.5
2001-2007	140.5	103.9	140.8	16.5	43.6	47.2	14.1
2008-2009	161.1	86.0	178.9	21.9	76.6	33.1	11.7
2010-2012	180.8	90.8	201.5	28.4	83.2	31.9	11.0

Source: Authors' own on the basis of OECD (2014) and Eurostat (2014).

Table 17: Household wealth and indebtedness as percentage of nominal net disposable income 1996-2012 for Euro periphery countries

Countries	Net Worth	Net financial worth	Non-financial assets		Financial Assets		Liabilities
			Total	Dwellings	Total	Shares and other equity	
Greece							
1996-2000							
2001-2007	149.2	149.2	…	…	217.2	**70.5**	68.1
2008-2009	96.0	96.0	…	…	177.8	**20.0**	81.8
2010-2012	84.5	84.5	…	…	188.0	**13.9**	103.6
Italy							
1996-2000	480.4	296.8	…	**183.6**	345.1	**135.2**	48.3
2001-2007	504.8	310.5	…	**194.3**	380.2	**140.7**	69.7
2008-2009	507.1	287.6	…	**219.5**	374.5	**113.1**	86.9
2010-2012	506.7	271.5	…	**238.8**	364.8	**100.8**	93.3
Portugal							
1996-2000	237.5	237.5	…	…	328.9	**108.6**	91.4
2001-2007	191.7	191.7	…	…	324.8	**104.0**	133.1
2008-2009	183.5	183.5	…	…	339.3	**95.9**	155.9
2010-2012	182.9	121.9	…	…	224.4	**60.1**	102.5
Spain							
1996-2000	176.7	176.7	…	…	262.8	**106.1**	86.1
2001-2007	160.9	160.9	…	…	279.3	**114.8**	118.5
2008-2009	134.0	134.0	…	…	280.8	**106.5**	146.8
2010-2012	125.1	125.1	…	…	270.6	**79.0**	145.5
Average							
1996-2000	298.2	237.0	…	183.6	312.3	116.6	75.3
2001-2007	251.6	203.1	…	194.3	300.4	107.5	97.3
2008-2009	230.1	175.2	…	219.5	293.1	83.9	117.8
2010-2012	224.8	150.7	…	238.8	261.9	63.4	111.2
Standard Deviation							
1996-2000	192.1	142.3	…	…	179.7	56.9	33.2
2001-2007	169.7	73.8	…	…	69.1	29.1	33.4
2008-2009	188.1	83.0	…	…	86.0	43.2	38.9
2010-2012	192.2	82.6	…	…	76.4	37.0	23.3

Source: Authors' own on the basis of OECD (2014) and Eurostat (2014).

Conclusion

The traditional explanation for external crisis is associated often to deep fiscal causes, even though the argument has serious problems, and in the European case the evidence is weak at best (Pérez Caldentey and Vernengo, 2012). The fiscal argument has never been taken seriously in the case of Spain for obvious reasons. However, the idea that in Spain the excessive spending of the private sector, associated to a bubble in housing markets and a construction boom was at the core of the crisis, has been widely accepted. Yet, the housing bubble in Spain was not out off line with similar experiences in other European countries that did not suffer with crisis.

Looking at the sectoral balance sheets of the Spanish economy reveals that it was the non-financial corporate sector rising deficit, which was reflected in a growing negative net financial worth balance sheet position that was at the center of the imbalances. The non-financial sector financed its deficits and debt not only via the domestic banking system, but also through external loans from other Eurozone countries. In turn, the commercial banking and financial system also required external funding becoming a net debtor *vis-à-vis* the rest of the world and in particular *vis-à-vis* the Eurozone. The majority of the external funding was portfolio investment. The balance sheet positions of the non-financial corporate sector and the financial system and their composition were reflected in a deteriorating net international investment position of the country in the aggregate, that is, the stock counterpart of the rising current account deficit.

The fragility of this process, akin to a Ponzi regime and, thus, unsustainable over time, materialized when Spain experienced a sudden stop and contraction in portfolio flows mainly due to the Global Financial Crisis (2007-2009). This produced a credit crunch in the availability of finance and of credit which, given the financial position of non-financial corporate sector, put the sector against the wall. This also impaired the construction and the real estate sectors putting a downward pressure on house prices and on the value of real estate property. As a result, real estate property based assets lost their appeal affected by low profitability and liquidity and high carrying costs and further deteriorated the balance sheet of both the financial and non-financial corporate sectors.

The freedom of financial flows to move throughout Europe and abroad, low borrowing costs and easy access to liquidity via leveraging coupled with no exchange rate risk provided a false sense of prosperity in

a low risk environment, which in the case of Spain led to the excessive leverage of the non-financial corporate sector. Neither fiscal policy, nor the housing bubble, is at the heart of the crisis in our view. The imbalances, at the heart of the crisis, are essentially connected to excessive indebtedness of the non-financial corporate sector, which imply a net debtor position for the country. In a sense, the fact that the Eurozone does not have mechanisms to deal with the imbalances that arise in the external accounts, and that forces austerity on debtor countries is the problem.

Note that in common currency areas, like the United States, fiscal transfers would allow for imbalances to continue without leading to contraction of output to reduce the regional balance of payments constraints. Alternatively, if the European Central Bank (ECB) had the ability to buy Euro denominated bonds of peripheral countries and keep their borrowing costs low, fiscal policy could be used by member countries, without risk of default. Hence, Lavoie (2015) is correct to note that at the heart of the problem there is a monetary sovereignty problem. On the other hand, it is also true that the manifestation of the Euro crisis is as a regular balance of payments crisis, as noted by Cesaratto (2014). It is unclear to these authors that depreciation and exit from the Euro would solve the problems of peripheral countries like Spain. On the other hand, the reform of the European institutional framework has proceeded at pace that seems too slow for the magnitude of the problems faced in the peripheral countries.

Notes

[1] The authors are Senior Economic Affairs Officer at ECLAC (Santiago, Chile) and Professor of Economics at Bucknell University (Lewisburg, PA) respectively. The opinions here expressed are the authors' own and may not coincide with those of the institutions with which they are affiliated.

[2] The negotiations began under the government of Adolfo Suárez who led the Unión de Centro Democrático (UCD) and was prime minister of Spain from 1976 to 1981. He was replaced by Leopoldo Calvo Sotelo of the same party who ruled for roughly a year when the Spanish Socialist Workers Party (PSOE) took over under the leadership of Felipe González and held into power for fourteen years (1982-1996). Thereafter from 1996 and until 2004 Spain was governed by the right wing Popular Party (PP) of José Maria Aznar. The socialist party returned to power in 2004 and its Secretary General José Luis Rodriguez became Prime Minister until 2011 when he was defeated by the Mariano Rajoy's Popular Party.

[3] As noted by Tussell (1999), following the entry of Spain in the European Community the Spanish embassy in Brussels became the most important instrument of Spanish diplomacy. As a contribution to the Maastricht Treaty Spain proposed the creation of the cohesion funds which were to benefit the less developed countries of the European Union including Spain.

[4] These debates can be traced to the XVIth and XVIIth century and raged with particular passion in the XIX Century, following the loss of Spain's overseas colonies in the Americas, and in the early XX Century. The debates involved some of the major Spanish intellectual figures including Francisco de Quevedo, Mariano José de Larra, Juan

Valera, Miguel de Unamuno, Francisco Giner de los Ríos, José Ortega y Gasset, Manuel Azaña, Rafael Altamira, Julián Marias, Américo Castro, Claudio Sánchez Albornoz, and Pedro Laín Entralgo among others. See Marias (1985) for a comprehensive analysis of the particularities and differences of Spain vis-à-vis Europe one year prior to the entry of Spain into the European Community. Some of major hispanists such as Gerald Brennan, Pierre Vilar, J.H. Elliot, Joseph Pérez also analyzed the relationship between Spain and European culture but in the second half of the XXth Century.

5 See, Ringrose 1966, for an early statement of this view.

6 In 1960 Spain's GDP per capita represented 58%, and in 1975, 78% of the European median. Thereafter Spain's GDP per capita experienced a process of divergence lasting until 1985 ending with a loss of 9 percentage points relative to the peak reached in 1975. As a result of the convergence process which started in 1986 and ended in 1992, Spain's GDP per capita relative to the European median expanded from 69% to 74%. Note that in 1992 Spain's GDP per capita relative to the European median had not reached the levels attained in 1975.

7 The Classical Cycle methodology was used. The Classical Methodology views the cycle as a set of turning points of a time series representing the level of aggregate economic activity without consideration to a trend (Harding and Pagan, 2001 & 2002). The inflection points of the series are then used as a basis to analyze the cycle in terms of a series of indicators such as the duration, intensity of an expansion (trough-to-peak) and a contraction (peak-to-trough) and the degree of coincidence between two given time series. Central to this approach is the identification of the turning points of a series. The turning points of a series are usually identified using the Bry-Boschan algorithm (1971) developed originally for monthly data and adapted to deal with quarterly observation by Harding and Pagan (2002). The algorithm consists in identifying local maxima and minima for a given series following a logarithmic transformation using specific censoring rules (Bry-Boschan, 1971; Male, 2009). These include the specification of two quarters for a minimum duration for a single phase, and a minimum duration of five quarters for a complete cycle (Harding and Pagan, 2002). The peak for a series y_t is found when, y_t is greater than $y_{t\mp k}$ for $k = 1,2$. Similarly, the trough for a series y_t is found when, y_t is less than $y_{t\mp k}$ for k =1,2. The algorithm excludes the occurrence of two successive peaks or troughs. Cycle analysis characterizes fluctuations in terms of duration and intensity and concordance. The duration (D) of an expansion is defined as the ratio the total number of quarters of expansion to the total number of peaks in a series. That is, D = $\frac{\sum_{t=1}^{T} S_t}{\sum_{t=1}^{T-1}(1-S_{t+1})S_t}$ Where, S is a binary variable, which takes a 1 during an expansion and 0 during a contraction.[7] The numerator in $(\sum_{t=1}^{T} S_t)$ denotes the total duration of expansions and the denominator $(\sum_{t=1}^{T-1}(1 - S_{t+1})S_t)$ measures the number of peaks in the series. For its part the intensity or amplitude (A) of the expansion is measured as the ratio of the total change in aggregate economic activity to the total number of peaks. That is: A = $\frac{\sum_{t=1}^{T} S_t \Delta Y_t}{\sum_{t=1}^{T-1}(1-S_{t+1})S_t}$ where, Y is a measure of economic activity (GDP in our cases) and the numerator in $(\sum_{t=1}^{T} S_t \Delta Y_t)$ is the total change in economic activity.

8 The figures refer to total unemployment. Long-term unemployment was at 4% in 1980 and increased to 13% in 1994. In 2007 it stood at 1.7% of the total labor force.

9 The fight against is inflation was one of the main objectives of the first Socialist Party (PSOE) government even to the detriment of employment. The reduction of unemployment was always secondary to the reduction in inflation.

10 In the realm of international affairs a few examples illustrate the growing and active presence of Spain in world affairs. Spain held the presidency of the European parliament in the 1980s and 2000s and the Secretariat General of NATO in 1995-1999 as well as the first post High Commissioner of the European Union for Common External Policy and Security in 1999. The participation of Spain in NATO became in fact of the most solid examples of homologation with the rest of advanced economies. As noted by Tussell (1999), following the entry of Spain in the European Community the Spanish embassy in Brussels became the most important instrument of Spanish diplomacy. Moreover the country actively participated in the Maastricht Treaty through the proposal for the creation of the cohesion

funds which were to benefit the less developed countries of the European Union including Spain. In 1991, Madrid was selected as the venue for the Peace Conference on the Middle East considered a success of the Spanish diplomacy. In 1992, Spain became a non-permanent member of the United Nations Security Council. However not all diplomatic and international initiatives were successful as demonstrated by the Spain's sponsoring of the Alliance of Civilizations for Dialogue between the West and the Islamic world in the 2000s. Spain's integration efforts also translated into an active participation in the provision of funds and technical assistance to Latin America. In terms of infrastructure Spain expanded significantly and modernized the overall transport network. The number of kilometers of motorway and dual carriageways grew from 2,925 kilometers in 1985 to 5,624 in 1990, 10,443 in 2000 and roughly 15,000 in 2007-2008. This is reflected in an increased public spending on infrastructure (by far the largest component of public investment) which rose from 2.9% of GDP in 1985 to 4% of GDP in the 2000s and remained at that level thereafter. In 1995 the government began to develop the High Speed Train network (the rising star of the Spanish infrastructure policy, Bel 2013) and by at the end of 2010, Spain has the largest High Speed Train network in Europe and the second largest in the world after China.

The basis for the creation of a welfare state, were established in the late 1960s and latter half of the 1970s. In 1967, the General Law for the Basis of Social Security, which started the process of unification and universalization of social protection, entered into force. Partly as a result, public social expenditure as a percentage of GDP roughly doubled between 1966 and 1975 (6.74% and 11.66% of GDP respectively). Thereafter social expenditure expanded further to reach 19.7% of GDP in 1975 stabilizing around 20% of GDP until the crisis partly as a result of the introduction of the income tax in 1997 which provided the sustainability required for a real Welfare State and the general strike of 1989 which forced the government in power (the Socialist Spanish Workers Party) to make changes in the orthodox orientation of its economic policy. It is important to note that the stabilization and literal stagnation of social expenditure in Spain from 1993 onwards is due in part to the fiscal conditions imposed by the Maastricht Treaty (1992) and the debt and fiscal criteria of the European Union. In terms of its composition expenditure on public pensions and health accounted for the bulk of the total between 1967 and 2005 (Barroso, 2013). Thus in fact and contrary to common wisdom, before the crisis social expenditure and hence the expansion of the welfare state was at a virtual standstill.

[11] Similar diagnoses of the Spanish economy can be found in Tusell (1999), Fusi & Palafox (1997), García de Cortázar & González Vesga (1994). For example Tusell (Ibid, p. 314) states that the insufficiency in the growth of productivity and the speculative nature of investment explained partly the fact that in the 1990's Spain's GDP per capita remained below that of Europe. Cortázar and González Vega (Ibid, pp. 637-639) provide a harsher critique explaining how in the 1990s the speculative and financial culture began to dominate the entrepreneurial culture and how foreign capital bloated the Spanish economy and encouraged a culture of triumphalism.

[12] Prior to the entry into the European Community in 1986, the Socialist government of Felipe González undertook the task of transforming the economy by following OECD guidelines of limiting and closing down uncompetitive industries and promoting the technological transformation of more competitive sectors and the diversification of industry. This so called policy of 'industrial reconversion' was mainly a policy of adjustment that significantly reduced the productive capacity of several industries. The policy focused on the iron and steel, naval and mining industries although the automobile and textile industries were also affected. The policy was considered a necessity as for example the production in the iron and steel industry increased from 3 to 11 million tons between 1965 and 1979 but by then only two thirds of production were consumed. However, the 'policy of industrial reconversion' was unable to channel industrial activity towards more productive and technologically advanced sectors. As put by Tusell (1999, p. 310): "…the so called reconversion when it was really a simple policy of adjustment that used the promise of re-industrialization as a means for workers' unions to overcome swallowing a bitter pill."

[13] Between 1986 and 1990, as put by Carr (2009, p.657) "Four out of each 10 kilometers of almost 6,000 kilometers of highways and 38 out of 100 Euros invested in Spain in railways were undertaken with European money. 90% of investment received between 1986 and 2006, 87% of tourists, 66% of imports and 74% of exports originated in Europe."

[14] At the same time Spain also adopted the European Directives, which are considered to be a crucial step towards the foundation for the Single Market Program in banking and financial services. These were meant to harmonize

rules, supervision and regulation of financial institutions, establish the principle of home country control and the so-called European Passport (branches and the provision of services across borders throughout the EC). See, Pérez Caldentey and Vernengo (2010).

15 The higher is the value of the index the greater is the degree of openness of an economy to cross-border capital transactions. See, Chinn-Ito (2014).

16 The profit rate can be expressed as $r = \frac{P}{K} = \left(\frac{P}{Y}\right)\left(\frac{Y}{Y^{FE}}\right)\left(\frac{Y^{FE}}{K}\right) \Leftrightarrow \frac{\Pi\mu}{v}$; where r = rate of profit, P= profits, K= capital, Y= income, Y^{FE}= full employment income, Π = profit share μ = capacity utilization and V= Capital-FE output ratio (technical coefficient). If the profit share (Π) increases, profitability *r* (can fall if a decline in capacity utilization (μ) and/or productivity (1/*v*) more than compensate the rise in the profit share which seems to be the Spanish case.

17 These are formally derived from simple national accounting identities. According to these the level of income (private and government income) is equal to private and public expenditure and the balance of trade, i.e.:

18 The debt. See, Federal Reserve Bank of St. Louis, FRED. http://research.stlouisfed.org/fred2/series/GGGDTAESA188N/downloaddata?cid=32277

19 Information on non-financial corporate sector debt for Spain and other Euro countries by sector of economic activity is available in the Bank for the Accounts of Companies Harmonized (BACH) (www.bach.banque-france.fr). However, the coverage of the data is only partial as in the case of Spain and can vary by sector and year which limits the usefulness of comparison across countries and over time. In the case of Spain the coverage rate (measured in the case Spain by the number of employees) reached 35% and 31% of total employment in 2000 and 2011 (Bank of France, 2014). The lowest level of coverage corresponds to the real estate sector. Analyses based on BACH data show that in 2007 the construction and real estate sector had the biggest debt ratios in terms of debt over gross operating profit or financial costs over gross operating profits. In terms of debt over total assets other sectors such as wholesale and retail have a higher debt for the same year than that of construction or the real estate sector (Bank of Spain, July 2010).

20 It is referred to as 'compensation of employees' in the national accounts.

21 IMF, 2012. Between 2004 and 2007, more than half of the bankrupt firms belonged to construction and real estate and industry and energy (23% and 32% of the bankrupt firms on average for 2004-2007).

22 Minsky (1982; 1986) distinguishes between three types of financing regimes (hedge, speculative and Ponzi). For a firm hedge financing means that gross profits exceeds payment commitments on debt in every period. Speculative financing means that payment commitments exceed gross profits in some periods. Ponzi finance refers to the case where 'for some if not all the near term periods cash payment commitments will not be covered by gross profit.' A hedge financing regime is vulnerable to changes in factor markets whereas speculative and Ponzi regimes are also vulnerable to changes in financial markets and conditions. Financial fragility depends on the weight of these regimes in the overall financing structure. Both speculative and Ponzi regimes lead to indebtedness. However, in the former case refinancing will be available when needed (As put by Minsky (1982, p.26): "The speculation consists in that refinancing will be available when needed.") and financing costs do not increased the level of outstanding debt. In the Ponzi situation financing costs are greater than income so that firms increase their levels of outstanding debt. This seems to be the case of the non-financial corporate sector in Spain. Minsky (1982, p. 24) uses the gross capital income as a measure of profits and the main measure to assess the viability of a financial structure. The closest that we found in the financial accounts of the Spanish economy to that concept is the gross balance of primary income which is equal to gross value added minus the wage bill minus taxes and minus net capital income. Interest obligations represented 40% of the gross balance of primary income in 1999 increasing to 50% in 2005 and to roughly 80% in 2007. Using gross disposable income instead gross balance of primary income underscores even more the importance of interest payments (55% in 1999, above 70% in 2004 and above 100% in 2006 and 2007).

[23] OC_H includes capital transfers and other items such as changes in inventories and net acquisitions of valuables, and net acquisitions less disposals of non-financial non-produced assets. The most important component is net capital transfers.

[24] Gross disposable income (GDI_H) include social transfers in kind.

[25] The rest is accounted for by capital transfers.

[26] See BBVA (2006). According to the results of the exercise undertaken, Greece has the smallest household debt burden 6% and 15% for both scenarios respectively.

[27] Financial net worth (financial assets minus liabilities) can take on negative values because of rising values of shares and equity. To avoid this case, and capture the effect of rising debt on the net financial worth position we computed financial net worth as the difference between financial assets and liabilities, excluding shares and equity.

[28] Since the adoption of the Euro monetary financial institutions decreased their share of total assets. In 1980 their share of total assets stood at 96% decreasing to 93%, 77% and 72% in 1990, 2000 and 2007. Conversely non-monetary financial institutions share increased from 4% in 1980 to 7%, 23% and 28% in 1990, 2000 and 2007. Currently (2013) their respective shares stand at 76% and 24% respectively.

[29] ROE declined from 11% to 4% between 1998 and 2002 and then recovered to reach 16% peak in 2007 (World Bank, 2013). A longer time series spanning from 1980 to 2011 shows that prior to 1998, ROE increased from 1980 to 1987 then declined and reached a trough with the 1992-1993, recession. The sharp recovery that followed lasted until 1998 (OECD, 2014). According to both the World Bank and OECD, ROE reaches a peak in 2007.

[30] Profitability in the financial sector can be explained by simple banking profit identity, also known as the Du Pont de Nemours and Company return over equity (ROE) decomposition stating that the ratio of earnings to equity equals the product of the ratio of earnings to assets and assets to equity. That is,

ROE = $\frac{Earnings}{Equity} = \left(\frac{Earnings}{Assets}\right) * \left(\frac{Assets}{Equity}\right)$, where $\frac{Assets}{Equity}$ = Leverage (L) and $\frac{Earnings}{Assets}$ = ROA

$\Leftrightarrow \frac{Earnings}{Equity} = ROA * L$. In turn, $ROA = \frac{NII + NNII + OE - P - T}{A}$ where, NII = net interest income, $NNII$ = net non-interest income, OE = operating expenses; P = provisions; T = taxes.

Note that ROE declined significantly during 2008 and 2009 but did not contract. ROE experienced contraction in 2011 and probably in 2012 due to the situation of the regionally based savings and loan institutions (*Cajas de Ahorro*) whose fragile financially situation and lack of regulation surfaced as the crisis wrecked havoc. The three big Spanish banks Banco Santander, BBVA and La Caixa were financially less exposed.

[31] In Nordic country the real prices of houses increased from trough-to-peak by 120%, 34% and 28% for Finland, Sweden and Norway respectively. In the case of Japan, the prices of real houses began to increase in 1977 reaching a peak in 1990. During this period the accumulated rate of increase reached a 100%. In Asian Crisis, the real price of estate properties measured by a property stock index increased by 285% between 1991-1994 for Thailand; 145% between 1991-1997 for Malaysia; and 50% between 1991-1994 for South Korea. Finally, in the cases of the savings and loan debacle and the subprime crisis, real estate properties witnessed an accumulated increase of 51% and 184% from their trough-to-peak values

[32] However, the 'objects of speculation' are not limited to include real estate properties. They have also comprised loans to emerging market economies as shown by the Latin American crisis of the 1980's; junk bonds as in the case of the savings and loan debacle; the derivative market as in the case of the LTMC; and technology related stocks as in the case of the dotcom bubble. During the boom period, in these episodes, the market for junk bonds and derivates, and the NASDAQ (the National Association of Securities Dealers Automated Quotations) which reflects the performance of technological stocks, recorded an increase of 400%.

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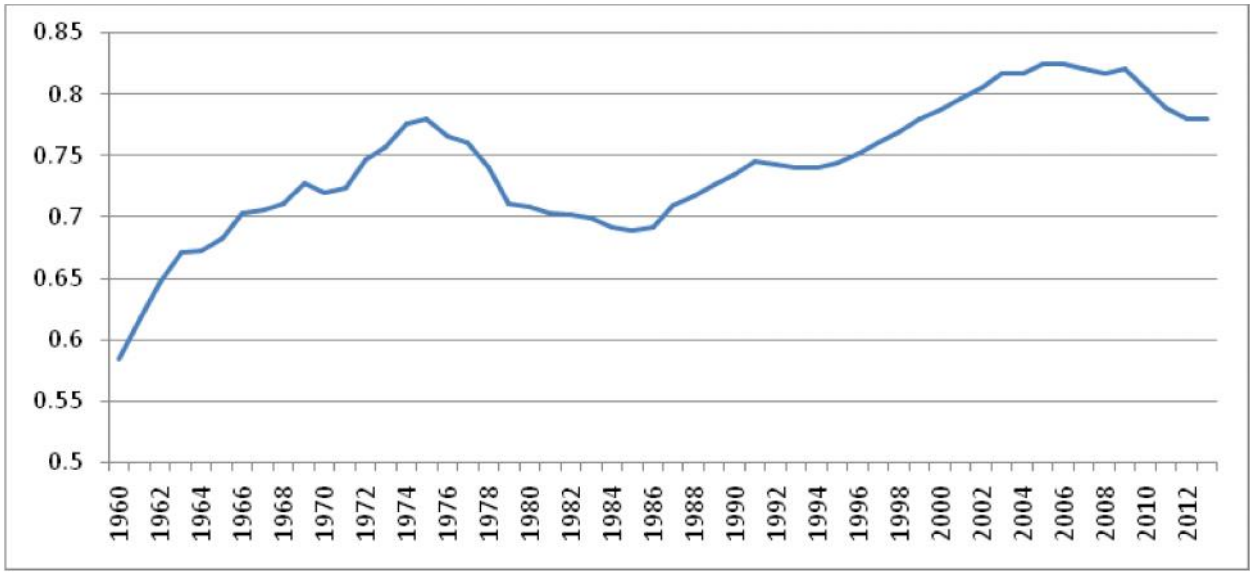
Annex

Figure 10: Gross domestic product at 2010 market prices per head of population



Source: AMECO (2014)

Table 18: Spain. Composition of financial system liabilities by financial institution 1980-2013 (Percentage of total assets of instutional group)

Time period	Deposits	Securities other than shares	Derivatives	Loans	Shares and other equity	Technical Insurance reserves	Other accounts receivables
Monetary financial institutions							
1980-1990	82.9	3.7		4.5	5.9	0.4	2.5
1991-2002	81.4	3.6		0.6	12.4	0.5	1.5
2003-2007	74.9	11.9	0.5	0.1	11.3	0.4	1.4
2008-2011	77.8	13.9	0.8	0.1	6.9	0.3	1.0
2012-2013	76.0	15.2	0.7	0.0	7.4	0.3	1.1
Other monetary financial institutions							
1980-1990	82.8	3.2		5.3	5.8	0.5	2.5
1991-2002	80.8	4.0		0.7	12.5	0.5	1.5
2003-2007	73.9	12.6	0.6	0.1	11.5	0.4	1.4
2008-2011	76.8	14.9	0.8	0.1	6.8	0.3	1.1
2012-2013	73.7	17.3	0.8	0.0	7.5	0.3	1.2
Non-monetary financial institutions							
1980-1990	5.8	0.0		15.9	29.0	43.9	5.4
1991-2002	0.6	2.6		4.8	47.9	41.4	2.7

2003-2007	0.1	29.0		2.5	35.0	31.7	1.8
2008-2011	0.1	47.2		5.4	21.3	24.8	1.3
2012-2013	0.0	41.1		7.7	20.7	29.3	1.3
Other financial intermediaries							
1980-1990	0.4			1.3	93.8		4.5
1991-2002	1.1	5.1		5.9	86.5		1.4
2003-2007	0.2	44.6		2.9	51.3		0.9
2008-2011	0.2	68.3		4.8	26.3		0.5
2012-2013		66.6		5.2	27.5		0.6
Financial Auxiliaries							
1980-1990				93.2	2.0		5.0
1991-2002				23.4	38.1		38.5
2003-2007	0.0	0.0		4.8	50.5		44.8
2008-2011	0.0	0.0		42.0	34.9		23.0
2012-2013	0.0	0.0		80.3	12.7		7.0

Note: Financial institutions include the Bank of Spain, deposit institutions including commercial banks, savings institutions and credit cooperatives, other financial intermediaries (such as venture capital institutions, Collective investment institutions (other than MMFs), securities-dealer companies, financial vehicle corporations, venture capital funds and companies, financial holding companies and issuers of preference shares), financial auxiliaries (Deposit guarantee funds, securities brokers, mutual guarantee companies, appraisal companies, managementcompanies (of pension funds, mutual funds and investment companies), operators of organised markets and companies performing settlement and market clearing functions, Insurance corporations and pension funds, Life and risk insurance corporations, non-profit insurance institutions, the *Consorcio de Compensación de Seguros* and autonomous pension funds. The general government includes central, regional and local governments as well as social security funds. Securities other than shares includes short-term (treasury bills, commercial paper at up to one year issued by general government, financial corporations and non-financial corporations), long –term (medium and long-term public debt. Commercial paper at more than one year and bonds issued by financial corporations and nonfinancial corporations and securities issued by non-residents that are held by residents) securities and financial derivatives (options, futures and similar instruments and (since 2005) swaps). Shares and other equity include quoted (shares of financial corporations (except investment companies) and non-financial corporations quoted on domestic and foreign marketsand unquoted shares (of financial and non-financial corporations) other equity (capital of companies and public bodies that do not have the legal status of a *sociedad anónima* (public limited company), capital contributions to branches (of non-residents in Spain and of residents in Spain abroad), non-residents' real-estate investments, investments in the capital of international organisations and contributions from deposit guarantee funds to the FROB, investment fund units, and investment company shares (shares in capital-market and real-estate investment companies). Insurance technical reserves are life and pension funds reserves and the prepayments of insurance premiums and reserves for outstanding claims. Other accounts receivables refer to trade credit and advances and other accounts.

Source: Bank of Spain Financial Accounts of the Spanish Economy and Annual Report (2000).

http://www.bde.es; Methodological Notes on the Financial Accounts of the Spanish Economy (2014).

Table 19: Spain. Share of the financial and resident sectors and public administration of net balance sheet portfolio and other investment (1992-2013)

	Financial and other resident sectors	Public Administration
1992	76.3	23.8
1993	60.9	39.1
1994	69.0	31.0
1995	62.9	37.2
1996	66.1	33.7
1997	66.2	33.8
1998	66.5	33.5
1999	71.8	42.9
2000	63.1	54.3
2001	59.6	49.6
2002	52.9	53.5
2003	65.2	43.9
2004	69.1	42.7
2005	76.2	33.3
2006	86.5	23.4
2007	90.5	15.6
2008	85.6	17.5
2009	79.7	22.3
2010	78.3	22.2
2011	70.9	19.7
2012	52.6	23.8
2013	53.1	31.9

Source: Authors' own on the basis of the statistical bulletin of the Bank of Spain (2014).

Table 20: Spain. Balance of goods and services, income and transfers (1990-2103). Thousands of Euros

	Goods and services	Income balance	Transfers
1990-2002	-7.0	-6.4	2.0
2003-2008	-47.3	-21.0	-4.5
2008-2013	-1.2	-20.7	-6.3

Source: Authors' own on the basis of the statistical bulletin of the Bank of Spain (2014).