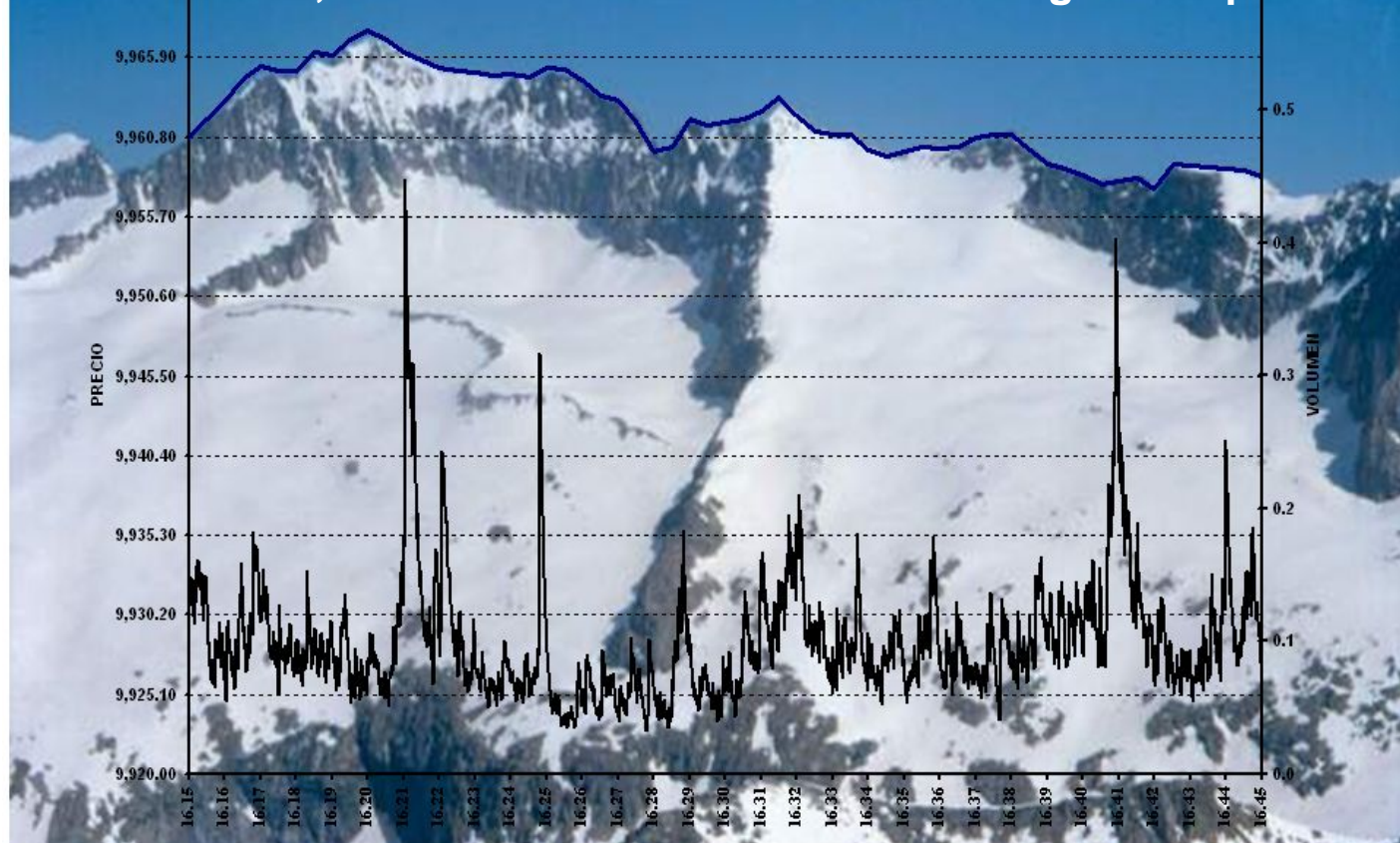


### Economics, Finance and Mathematics from a high standpoint



**Spain during the Great Recession. Teetering on the brink of collapse**

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## **Spain during the Great Recession. Teetering on the brink of collapse.**

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### **Introduction.**

In this contribution, we offer a non-orthodox interpretation of the causes which have driven the Spanish economy to a protracted state of recession. Next, we discuss what should be done in terms of economic policy to drive this economy to pre-downturn figures and review what has in fact been put in practice. We conclude that the measures adopted will neither bring prosperity to the Spanish economy (the ultimate goal), nor will they restore macroeconomic balances. In our view, the roots of the crisis are a rocketing private indebtedness and an excessively large size of the construction industry; these factors are located within the national borders and they have spilled over to the rest of the euro zone through a current account deficit and a highly negative financial investment position. The consequences of these imbalances have led to a problem of effective demand, a real estate bubble that burst and a lack of domestic credit and of funding in international markets. The institutional setting which frames the Spanish economy poses serious limits to the measures required to get out of this mess. Solving these problems would require a proactive fiscal authority, a national central bank able to play the role of lender of last resort and a realignment of the real exchange rate. This we shall call the expansive option, and would require more political union than which exists at the moment in the European Monetary Union (EMU onwards). There is an alternative option which consists of fiscal austerity measures, where public spending should be replaced by exports. This alternative requires prices to increase less than in neighbouring countries, something which could be attained through additional supply side reforms, particularly in the labour market. It can be implemented at the national level. And here is the dilemma: the expansive option requires the cooperation of all of the countries within the EMU and some institutional changes, pointing to more political union. But this is a slow process, and hard to achieve because of strong discrepancies (institutional, cultural, nationalistic sentiments *etc.*). On the contrary, the austerity alternative can be put into practice at the national level, though its likely outcomes are stagnation and rising unemployment, because fiscal cuts and improving competitiveness to ease the balance of payments constraint will tighten domestic demand. Furthermore, the austerity option, which aims at balancing the public budget to avoid default risks as a precondition for restoring macroeconomic equilibrium, will fail to attain its target because public revenue will plummet.

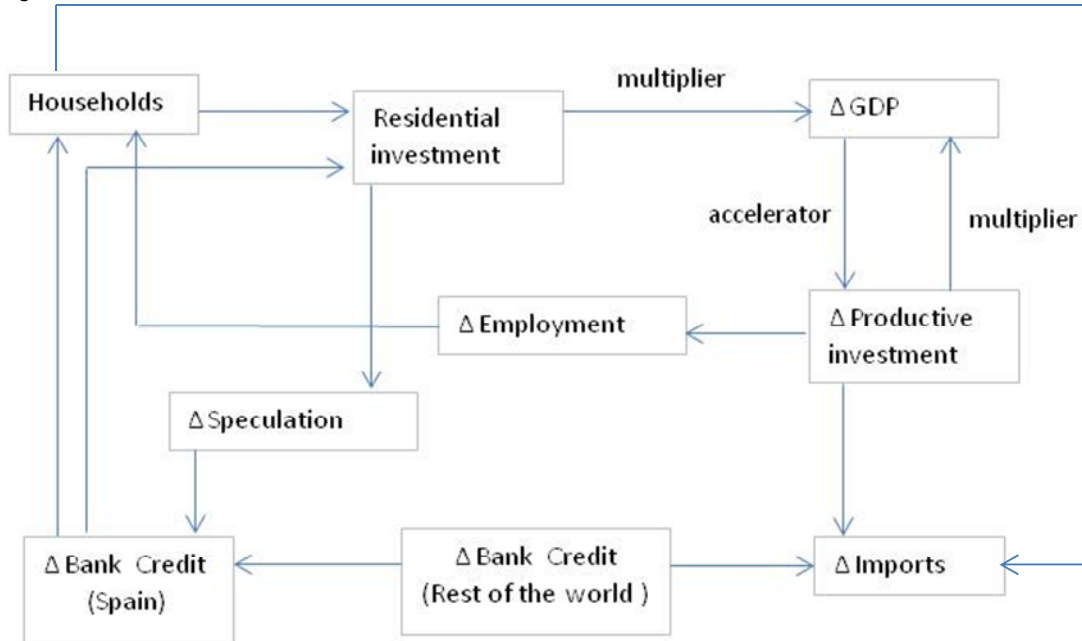
### **The causes of the crisis in Spain: accumulated imbalances during the booming period.**

After having enjoyed an outstanding period of prosperity from 1997 to mid 2007, Spain officially fell into recession in the last quarter of 2008, when GDP showed a second negative quarterly rate of growth. After seven quarters with negative growth rates (between 2008:2 to 2009:4), the current GDP yearly growth ratio (fourth quarter of 2011 with respect to the same quarter of 2010) is -0.2%, and the prospect for 2012 and 2013 is rather gloomy: according to the IMF (2012), it is -1.8% and +0.1% for GDP growth rate.

The true cause of the current state of affairs lies in the accumulation of imbalances during the booming period which, in turn, were the outcome of an unsustainable pattern of growth, driven by household indebtedness. Other factors, such as the financial turmoil caused by the

debacle of the American subprime mortgages, or the sovereign debt crisis deepened the downturn aggravating these problems but they did not cause the crash. The following figure illustrates what has happened in Spain from 1997 to mid 2007.<sup>1</sup>

Figure 1



In 1997, household borrowing (from banks) began to grow making indebtedness relative to household gross disposable income increase, particularly to fund the purchase of a house (and to a lesser extent to fund the import of consumer goods). Two main factors explain this fact. In the mid 1990s, baby boomers reached their thirties, the age at which people used to purchase a house in Spain, and the implementation of the euro, through the Maastricht criteria, led to falling interest rates and fostered financial capital movements within countries in the future Euro Zone, thus giving rise to an extraordinary expansive monetary policy for Spain. The shift in the demand for houses led to two related reactions within the supply side: on the one hand, the number of dwellings increased hugely, making GDP and employment grow spectacularly: as a matter of fact, the multiplier in the construction sector is the largest one. On the other hand, house prices skyrocketed, making way for speculative activities. When GDP grows, productive investment grows, as explained by the theory of the accelerator (Baddeley, 2003, Dejuán, 2005) which, combined with the multiplier, makes GDP grow even faster. Nevertheless, more than half of the demand of productive investment was covered by imports (as the Spanish symmetric input-output tables for 1995, 2000 and 2005 show). A high growth of GDP involves a large growth in employment, chiefly when the rate of growth of productivity is low, as it is in the building sector. Growing employment further encourages households to purchase a house. And the rising prices of houses makes it profitable for developers to purchase land in the present and sell houses in the near future, making a capital gain on land, plus an ordinary profit on building, even more in a context of easy lending criteria. Although purchasing a standard house requires growing indebtedness, the low initial level does not pose any obstacle to this growth pattern. And the growing current account imbalance is offset by a huge financial capital inflow from core-EMU countries. Therefore, Spain experienced a virtuous circle linking GDP, employment, and the real estate sector which lasted for a decade or so, and also contained the seeds for what was to come

<sup>1</sup> A more detailed account can be found in Dejuán and Febrero, 2011.

next. The current meltdown is the consequence of three intertwined, accumulated imbalances during the prosperous decade:

- very high private indebtedness (non-financial corporations and households),
- the construction sector became too big,
- very large current account deficit and indebtedness to the rest of the world (especially of financial institutions).

Regarding the first imbalance, the following table offers a summary of this:

**Table 1: Indebtedness over GDP. Spain: 1997 – 2011: Q2**

	1997	2000	2003	2005	2007	2011
<b>Households</b> <sup>(1)</sup>	35.37%	47.18%	58.65%	73.35%	84.54%	81.73%
<b>Non financial corporations</b> <sup>(1), (2)</sup>	47.22%	77.63%	91.82%	106.89%	133.92%	134.89%
(Construction and real estate) <sup>(1)</sup> (Corporate construction and real estate) <sup>(1)</sup>	29.42%	40.95%	54.57%	79.87%	104.20%	98.37%
	8.35%	12.34%	18.69%	29.50%	44.07%	37.05%
<b>Total Private</b> (non financial) <sup>(1), (2)</sup>	<b>82.59%</b>	124.81%	150.47%	180.25%	<b>218.46%</b>	216.62%
<b>Government</b> <sup>(2)</sup>	60.41%	54.34%	46.55%	42.89%	33.74%	62.78%
<b>Financial institutions</b> <sup>(1), (2)</sup>	8.47%	14.43%	28.65%	59.92%	97.79%	105.05%
<b>Total</b>	151.46%	193.58%	225.67%	283.06%	349.99%	384.45%
Held by domestic agents <sup>(1), (2)</sup>	124.85%	151.41%	167.55%	197.50%	240.69%	281.68%
Held by the rest of the world <sup>(1), (2)</sup>	26.62%	43.83%	58.38%	85.62%	109.96%	102.76%
<b>Total debt held by the rest of the world</b> <sup>(*)</sup>	<b>57.59%</b>	87.50%	106.97%	136.39%	<b>160.91%</b>	167.81%

Source: Banco de España, INE and authors' calculations.

Notes: (1) Bank loans

(2) Securities other than shares

(\*) Bank deposits, loans, securities other than shares, trade credit, insurance and reserves.

The row 'Construction and real estate' accounts for all credits granted by banks and used to fund operations related to construction, including household purchases of houses, developers' purchase of land or corporate disbursements to build a new house. 'Corporate construction and real estate' stands for bank lending to corporations in the real estate industry.

Private indebtedness increases almost three times more than GDP between 1997 and 2007, with borrowing related to construction representing almost 50% of total private debt in 2007.

Public indebtedness shows an inverse trend: it falls markedly when private indebtedness rises. Additionally, total debt with the rest of the world trebles during the prodigious decade, with financial assets owned by the rest of the world rounding 160% GDP in 2007.

And growing general indebtedness has a single root: a strong demand for houses by households, which is amplified by the demand for land by developers, for speculative purposes.

The second imbalance, the excessive size of the construction industry, can be seen in the table below (see also Table 5). The construction sector grew twice more than GDP during ten years: a pace which was difficult to maintain.

**Table 2: GDP. Demand side. 1997:1 – 2011:2**

	Growth rate (% yoy) 1997:1 - 2007:2	Accumulated change (1997:1 = 100) 1997:1 - 2007:2	Accumulated change (2008:2 = 100) 2008:2 - 2011:1
GDP	<b>3.85</b>	<b>46.97%</b>	<b>-4.14%</b>
Consumption	4.09	51.98%	-1.81%
Consumption Households	3.94	49.58%	-4.08%
Consumption Government	4.54	59.32%	4.23%
Gross fixed capital (GFK)	6.62	96.46%	-27.76%
GFK. Equipment goods.	7.44	112.90%	-28.520%
GFK. Construction. Dwellings	<b>7.53</b>	<b>107.43%</b>	<b>-43.20%</b>
GFK. Other constructions.	5.23	72.88%	-14.04%
GFK. Other products.	6.85	97.49%	-25.22%
Exports	6.47	81.27%	3.18%
Imports	9.47	152.33%	-13.84%

Source: INE and authors' calculations.

The reader will realize that the rate of growth of GDP during the prosperous decade between 1997 and 2007 reached 3.85% per year, on average. In this period of time, the housing industry grew twice as much as GDP. However, the demand for houses fell dramatically in the last four years, dragging GDP.<sup>2</sup>

Finally, during the buoyant period the Spanish economy accumulated a huge current account imbalance.

<sup>2</sup> The reader will also realize that since mid 2008, the only components of aggregate demand making a positive contribution to GDP are public consumption and exports. See Figure 7 below.

**Table 3: Evolution of current accounts and their main determinants.**

	1997	2000	2003	2005	2007	2010
<b>Spain</b>						
Current account balance <sup>(1)</sup>	0.14%	-4.02%	-4.03%	-7.46%	-10.00%	-4.52%
GDP growth rate	4.70%	4%	3.20%	3.80%	3.20%	0.60%
Unit labour Costs	100	101.46	111.69	118.31	124.70	137.45
Adjusted labour share	60.04%	58.87%	56.94%	55.62%	55.60%	55.75%
Share in world exports <sup>(2)</sup>	100	103.59	122.53	112.74	112.88	100.75
Net financial assets <sup>(1)</sup>	-25.66%	-32.00%	-45.24%	-55.59%	-78.13%	-89.54%
<b>Germany</b>						
Current account balance <sup>(1)</sup>	-0.45%	-1.63%	2.05%	5.23%	7.64%	5.06%
GDP growth rate	1.80%	3.21%	-0.22%	0.75%	2.66%	3.63%
Unit labour Costs	100	101.57	104.02	102.60	100.87	107.65
Adjusted labour share	59.87%	60.56%	59.59%	57.77%	55.09%	57.27%
Share in world exports <sup>(2)</sup>	100	91.01	109.00	106.33	108.96	101.70
Net financial assets <sup>(1)</sup>	4.13%	3.27%	6.61%	21.04%	26.50%	38.41%
<b>France</b>						
Current account balance <sup>(1)</sup>	2.55%	1.11%	0.25%	-1.79%	-2.22%	-3.46%
GDP growth rate	2.24%	3.91%	1.09%	1.90%	2.37%	1.58%
Unit labour Costs	100	106.40	116.28	123.05	132.24	137.94
Adjusted labour share	57.53%	57.29%	57.46%	57.55%	56.84%	58.66%
Share in world exports <sup>(2)</sup>	100	93.24	94.54	81.38	73.44	63.30
Net financial assets <sup>(1)</sup>	10.02%	18.51%	0.65%	1.13%	-1.48%	-9.96%
<b>US</b>						
Current account balance <sup>(1)</sup>	-1.69%	-4.18%	-4.66%	-5.90%	-5.06%	-3.24%
GDP growth rate	4.46%	4.14%	2.54%	3.07%	1.91%	3.03%
Unit labour Costs	100	107.95	112.96	117.02	124.01	126.06
Adjusted labour share	61.31%	63.17%	62.18%	60.59%	60.57%	59.30%
Share in world exports <sup>(2)</sup>	100	101.34	85.32	77.97	75.84	78.07

Sources: AMECO, IMF, WTO, Eurostat and authors' calculations.

Note: (1) Net financial investment position. As a percentage of GDP.

(2) Merchandise and services exports.

The Spanish current account balance reached a deficit equivalent to 10% GDP: the largest in percentage terms of GDP of OECD countries and the second largest one in absolute terms, after the US economy. Although its unit labour costs have increased substantially, leading to a loss of competitiveness, the main explanatory variable for the current account deficit is the rate of growth of GDP: otherwise, the share in world exports should have declined. Also, it should be noted that the rising unit labour costs took place simultaneously with a large falling labour share of almost 5 percentage points of GDP: prices rise faster than wages minus productivity, because of a lack of competition in goods and services markets.

As a consequence of this accumulated current account deficit, the international investment position for the Spanish economy, in net terms, is in the red, having reached a net debt to the rest of the world amounting to almost 90% GDP (in gross terms, it rounds 160%).

When private debts to the rest of the world, mostly held by banks, are due for payment, and creditors do not wish to refinance them, and the economy lacks a national central bank, there is a serious risk of default. This risk is even larger when the economy is running a current account deficit and the rate of non-performing loans rises, because of the burst of the real estate bubble. In this situation, if the government provides guarantees to banks (issuing public debt and then lending the collected funds to banks, aiming at keeping bank credit flowing, or simply guaranteeing deposits), then the risk of private default turns into the risk of public default. The outcome is a banking sector restricting the credit supply when the asset side of their balance sheets is shrinking and investors of the rest of the world are withdrawing funds.

If we had to choose one main factor unleashing all the aforementioned imbalances, this is, as pointed out above, the booming residential investment by households during the Golden decade between 1997 and 2007. The chief arguments affecting the purchase of so many houses are encapsulated in the following table.

**Table 4: Main factors affecting the demand for houses.**

	1997	2000	2003	2005	2007	2010
Interest (real, long term)	3.92	2.01	-0.04	-0.91	1.01	3.83
Maturity Mortgage (years)	19	22	24	25	28	25
Population 10 <sup>3</sup>	39583.4	40264.2	42717.1	44108.5	45200.7	46072.8
Unemployment	16.7%	11.1%	11.1%	9.2%	8.3%	20.1%
Ownership		84.54%	84.08%	86.28%		
Debt effort (percentage income)	23.6%%	22.7%	23.9%	27.7%	39.7%	27.2%
Price m <sup>2</sup> Nominal (euros)	702.8	893.3	1380.3	1824.3	2085.5	1825.5
Price m <sup>2</sup> (real)	702.8	813.1	1145.4	1413.3	1514.8	1260.2

Source: Banco de España, AMECO, INE, Colegio de Registradores de la Propiedad y Mercantiles de España and authors' calculations.

Notes: The real interest rate has been deflated using the GDP deflator.

The rate of ownership represents the percentage of population living in a house of their own.

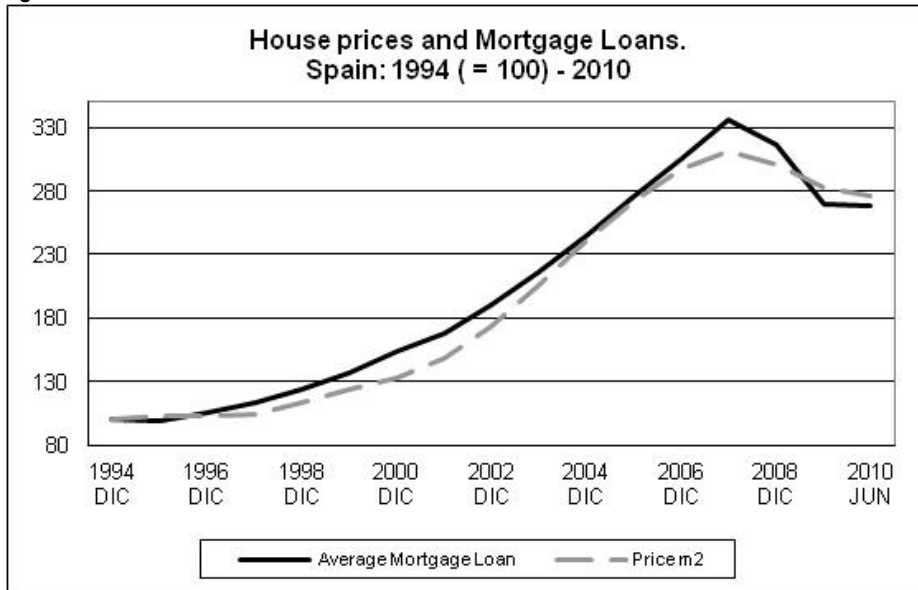
Debt effort accounts for the percentage of disposable income (after tax deductions) which a median household has to set aside to settle debt services caused by the purchase of a house, per year.

Table 4 shows that in the 10 years which go from 1997 to 2007, the population (especially baby boomers, who reach their thirties in this period, the age at which people used to purchase a house in Spain) increases by 5.6 million people (specifically, the number of people over 25 increases more than 6.5 million). Banks grant mortgage loans at a steadily declining interest rate, with increasingly longer maturities and under much easier credit standards. This makes it possible, despite house prices almost trebling from 1997 to 2007, for the debt effort to remain almost flat until the end of 2005, and then for it to go up because the ECB raises the interest rate at the end of 2005 (due to fears of inflation because of the hike in raw material prices). This strong demand was matched with an amazing supply: between January 1997 and December 2007 almost 6.25 million dwellings were initiated. Developers become indebted to purchase land and next they built houses convinced that banks would grant credit to house buyers with some lag (between 18 and 24 months) giving rise to the possibility of making a profit plus a capital gain on the buying and selling of land. Actually, the price of houses could not have risen to such an extent without the willingness of banks to grant larger mortgages, as the following picture shows:<sup>3</sup>

<sup>3</sup> When a bank grants a mortgage loan, its amount depends on the current value of the stream of future debt service payments which are calculated as a given percentage (usually 30%) of the borrower's household income. Therefore, the size of a mortgage loan directly depends on: (i) household income – which in Spain has remained stable in real terms; (ii) the loan maturity –which has increased, on average, from 19 to 28 years, and inversely on (iii) the interest rate, which has declined greatly. It is these factors which led to larger mortgages and then it was these larger mortgages which drove house prices upwards, leading to capital gains on land for developers.



Figure 2



Source: Banco de España, Colegio de Registradores de la Propiedad y Mercantiles de España and authors' calculations.

Officially the Spanish economy entered a period of recession, at the end of 2008, though prosperity ended in mid 2007, because of the end of the boom in the construction industry. The following factors are relevant:

- The ECB begins to raise interest rates at the end of 2005, because of fears of inflation caused by hikes in raw material prices, shifting from 2% in November 2005 to 4.25% in July, 2008, for main refinancing operations.
- The real estate market had become rather saturated. In 2007, more than 400.000 dwellings remain unsold, and in 2008, 200.000 more dwellings are added to this stock.
- Households had become highly indebted in 2007. As table 1 above shows, household debt reached 84.54% GDP in that year, whilst it was 35.37% ten years before.
- House prices are really high in 2007. At the end of 2007 the price of 1 square metre of a new dwelling is 23.7% more expensive than at the beginning of 2005, and 200% higher than at the beginning of 1997.

When the demand for new houses stops the construction industry comes to a standstill and, through the multiplier, GDP slows down; next, through the accelerator, investment demand comes to a standstill dragging GDP down. The vicious circle closes when unemployment rises, further weakening the demand for residential investment and making the rate of non-performing loans to rise.

#### **After the party comes the hangover. Consequences of the accumulated imbalances.**

When the locomotive of residential investment lacks fuel, the train of the economy suddenly stops. But what is coming next? The post real estate bubble Spanish economy faces three problems:

- The skyrocketing debt accumulated in the recent past has to be settled. Debt service payments are a forced saving which will drag aggregate demand for a long period of time. Private spending, particularly household consumption, will be weak in the near future.
- The construction industry had become too big for its boots. When the bubble bursts, and the construction industry starts getting back to *normal* figures, a lot of workers

become unemployed, not only in the building sector but also, through the multiplier, in other related industries. The pattern of growth should be changed.

- As output and employment fall, some borrowers cannot pay back debts to banks and the price of houses (used as collateral for loans) declines. This makes the asset side of banks' balance sheets shrink. In addition, when the financial crisis caused by the American toxic mortgages spreads all over the world, Spanish banks face increasing problems to get funds in money and interbank markets. As a result, they tighten credit standards to borrowers. Financial straits are amplified by the fact that investors (and Spanish savers) begin, in mid 2007, to shift their funds to safer harbours (especially Germany).

#### Lack of effective demand

We present this factor with a simple model, akin to (though not equal to) the Sraffian supermultiplier (see for instance Bortis, 1997, Cesaratto *et al.* 2002, or Dejuán, 2005).

We shall assume an open economy with government and private sectors. Also we shall assume that inflation only exists in the housing market; the rest of commodities are traded at constant prices (this is only for simplicity). We assume the Keynesian principle of effective demand:

$$(1) \quad Y_t = AD_t$$

Where  $Y_t$  is GDP and  $AD_t$  is aggregate demand. Next,

$$(2) \quad AD_t = C_t + I_t^R + I_t^P + G_t + NX_t$$

With  $C_t$  being consumption,  $I_t^R$  residential investment,  $I_t^P$  productive investment,  $G_t$  public spending and  $NX_t$  net exports.

Regarding consumption:

$$(3) \quad C_t = c(wL_{t-1} - DSP_t)$$

On the right hand side of this expression we have  $c$  as the (average) propensity to consume,  $w$  is the (average) nominal wage,  $L$  is employment and  $DSP$  accounts for debt service payments corresponding to past household borrowing.

With respect to residential investment:

$$(4) \quad I_t^R = p_H \Delta H_t$$

Where  $p_H$  is the price of a house and  $\Delta H$  is the increase in the number of houses in period  $t$ .

We shall assume that the purchase of a house is fully funded with bank borrowing. Hence:

$$(5) \quad \Delta D_t = p_H \Delta H_t$$

Next, concerning productive investment, we decompose it into two factors, the first one accounts for modernization of capacity, and it is treated as an independent factor, whilst the second factor depends on the accelerator, and informs about adjusting capacity to expected demand:

$$(6) \quad I_t^P = I_0 + v[Y_t^e - Y_{t-1}] = I_0 + v[Y_{t-1}(1 + g^e) - Y_{t-1}] = I_0 + v \cdot g^e \cdot Y_{t-1}$$

Where  $g^e$  stands for the expected growth rate of GDP.

$G_t$ , for public spending, is taken as an exogenous variable and net exports,  $NX_t$ , depends on an autonomous factor,  $NX_0$ , the differential between domestic price inflation,  $p_t$ , and inflation in the rest of the European Monetary Union, (EMU),  $(p_t - p_t^{EMU})$ , and the level of output (we assume, for the sake of simplicity, that Spain only trades with other countries within the EMU, with which it shares the same currency):

$$(7) \quad NX_t = NX_0 - x(p_t - p_t^{EMU}) - mY_{t-1}$$

Considering (1) – (7), and rearranging, we have:

$$(8) \quad Y_t = \left[ c \cdot \frac{wL_{t-1}}{Y_{t-1}} + v \cdot g^e - m \right] Y_{t-1} + \left[ I_0 + G_t + NX_0 - x(p_t - p_t^{EMU}) + \left\{ \frac{\Delta D_t}{p_{H_t}} - c \cdot DSP_t \right\} \right]$$

We divide new borrowing (as in expression (5)) by the price of houses in order to account for the output at constant prices which this new borrowing puts in motion.

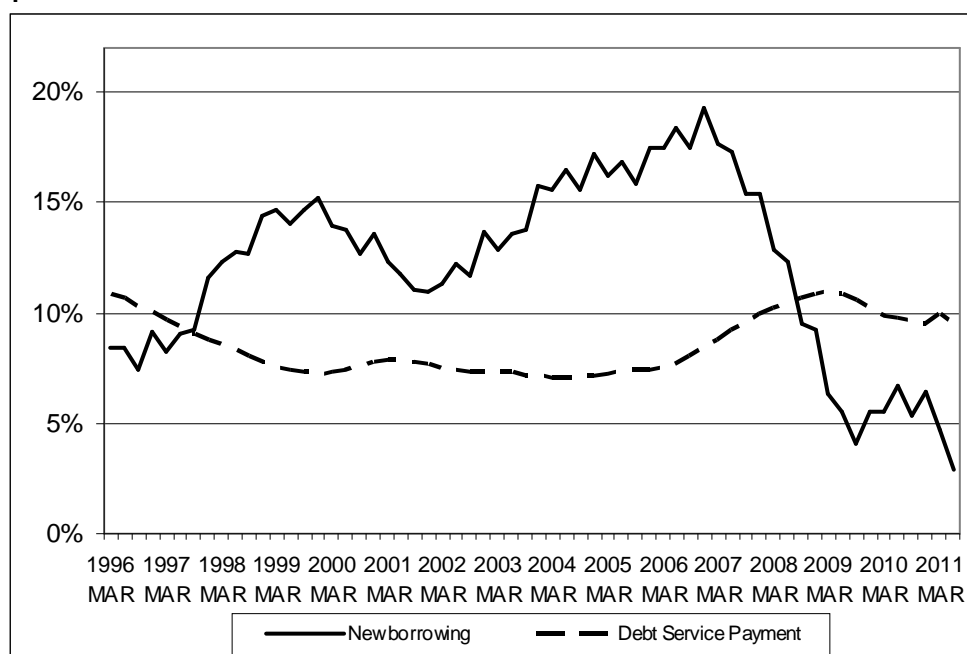
We obtain a first order difference equation. If the term  $[c (wL_{t-1} / Y_{t-1}) + v \cdot g^e - m]$  is stable, and lower than one, the economy is driven by:<sup>4</sup>

$$\left[ I_0 + G_t + NX_0 - x(p_t - p_t^{EMU}) + \left\{ \frac{\Delta D_t}{p_{H_t}} - c \cdot DSP_t \right\} \right]$$

Further, under the assumption that the term  $[I_0 + G_t + NX_0 - x(p_t - p_t^{EMU})]$  remains close to zero, and the propensity to consume is close to unit, the economy is driven by the difference between new borrowing (deflated by the price of houses) and debt service payments:

$$\left\{ \frac{\Delta D_t}{p_{H_t}} - c \cdot DSP_t \right\}$$

**Figure 3: New Borrowing and Debt service payments over household disposable income. Deflated. Spain 1996 – 2011.**



Source: Banco de España, INE and authors' calculations.

In the figure above, the solid line for new borrowing represents all new bank borrowing by households (including short term credit, mortgage loans and other long term loans) deflated by its corresponding deflator (short term credit by HICP, mortgage loans by household prices and other long term loans by the industrial price index), and divided by household gross disposable income (deflated as well, by the GDP deflator). The broken line represents debt service payments by households, deflated by HICP, and also divided by the household real gross disposable income. New borrowing reaches its maximum at the end of 2006, then

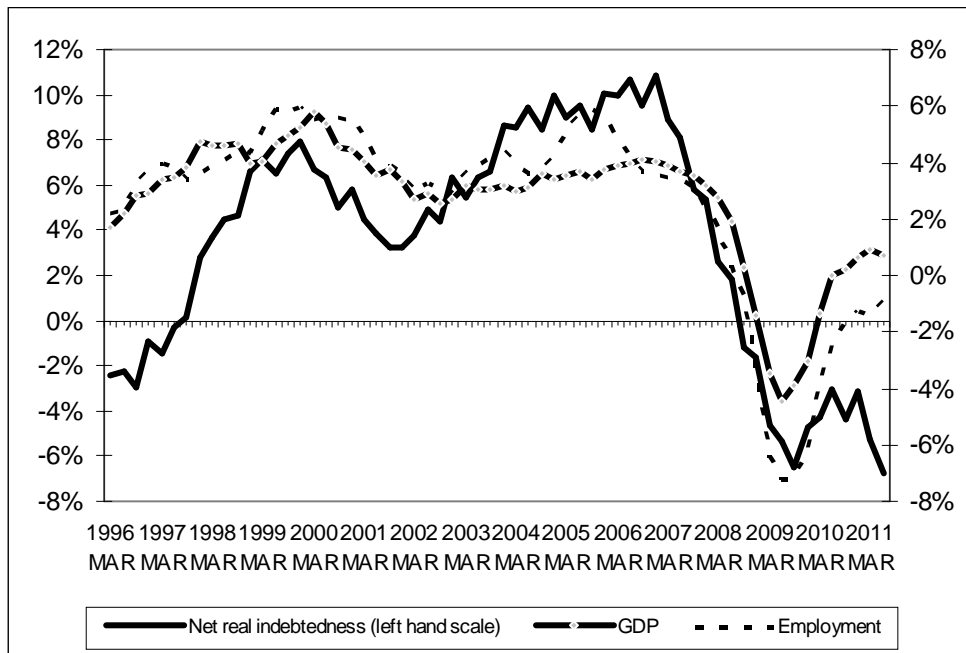
<sup>4</sup> If the first factor on the right of the equality in expression (8),  $c \cdot \frac{wL_{t-1}}{Y_{t-1}} + v \cdot g^e - m$ , is lower than one, we can write (8) as:

$$Y_t = \frac{1}{1 - c \cdot \frac{wL_{t-1}}{Y_{t-1}} - v \cdot g^e + m} \cdot \left[ I_0 + G_t + NX_0 - xp_t + \left\{ \frac{\Delta D_t}{p_{H_t}} - c \cdot DSP_t \right\} \right]$$

declines, and it crosses debt service payments in late 2008, which is when, officially, the Spanish economy enters into recession. This figure illustrates the problem of effective demand: although new borrowing has fallen to the bottom, forced saving to settle debt is going to stay for a long period of time.

If we subtract real debt service payment from real new borrowing, we obtain net (real) new borrowing, by households. This variable informs us about the difference between monetary efflux caused by borrowing and monetary reflux due to debt settlement. It measures output put in motion by households, divided by household disposable income. And it explains quite well the evolution of GDP and employment during the boom and the subsequent downturn.

**Figure 4: Net real borrowing, GDP and employment.**



Source: Banco de España, INE and authors' calculations.

However, the rebound of GDP and employment which takes place in mid 2009 is not explained by household net borrowing. Actually, it is mainly due to the timid Keynesian policy implemented from 2008 to May 2010, and also due to exports (see Table 2 above, and Figure 7 below).

The construction industry becomes too large

Residential investment pulled the economy during the Golden decade and that industry became too large. And when the real estate bubble burst, it got back to its normal level. This readjustment led to almost 50% of the increase in unemployment figures.

**Table 5: Employment (thousands) and percentages on total employment.**

	Spain						European Union					
	1997		2007		2010		1997		2007		2010	
Agriculture	1,068	8.04%	925	4.55%	793	4.30%	7,316	4.87%	12,207	5.59%	11112	5.13%
Industry	2,653	19.98%	3,262	16.02%	2613	14.16%	32,721	21.79%	42,450	19.45%	39167	18.10%
Construction	1,318	9.93%	2,697	<b>13.25%</b>	1651	8.94%	11,715	7.80%	17,915	<b>8.21%</b>	16570	7.66%
Services	8,237	62.04%	13,471	66.18%	13400	72.60%	98,424	65.54%	145,728	66.76%	149555	69.11%
Total	13,276	100.0%	20,356	100%	18,456	100%	150,176	100%	218,300	100%	216405	100%

Source: Eurostat and authors' calculations.

This means that one of the traditional locomotives for the Spanish economy (and not only for that economy: see Leamer, 2007) has been knocked out for a long period of time.<sup>5</sup>

### Banks stop granting credit

The model stated in expression (8) provides an explanation for economic fluctuations combining a flow and a stock of debt (the latter 'generates' a flow of debt service payments: see Bhaduri, 2011). However, it leaves aside one important point: how do banks react to these fluctuations and what are the consequences of banks' reactions?

The following table provides some relevant information about the evolution of banks in Spain.

**Table 6: Financial corporations. Spain. Billion euros.**

	<b>1997</b>	<b>2007</b>	<b>2009</b>	<b>2011</b>
PIB (nominal)	505	1053	1048	1070
Credit	345	1760	1837	1789
Productive activities	198	943	991	951
Households	145	789	813	794
Construction, real estate and purchase of houses	145	1081	1108	1061
Non performing loans	8 <sup>(1)</sup>	16	93	128
ROE	15.25	20.7	8.03	2.4 <sup>(3)</sup>
TARGET2	11 <sup>(2)</sup>	-4	-34	-150
Loans / Deposits	56.68%	85.31%	77.90%	77.77%
Bank liabilities owned by RoW / Total liabilities	17.36%	29.19%	27.97%	26.49%

(1) December 1998

(2) January 1999

(3) Average of the four quarters of 2011.

Source: Banco de España

In this table, we gain some interesting insights. Firstly, from 1997 to 2007, credit grows much faster than GDP, with loans to construction (to fund the building industry, real estate services or the purchase of houses by households) growing at a very strong pace. Also, loans grow faster than deposits. The profitability of the financial corporations, measured by the return on equity (RoE) grows from 15.25 to 20.77. The rate of non-performing-loans to total credit remains quite low. And the TARGET2 balance, which when it is negative indicates that the central bank<sup>6</sup> has to provide liquidity to financial corporations in order to make possible the cancellation of debts to other banks in the EMU,<sup>7</sup> remains quite low, because the huge current account deficit is compensated by a very large inflow of financial capital.<sup>8</sup>

<sup>5</sup> According to the Spanish National Statistics Agency, between early 2008 and the end of 2011, employment fell in Spain by roughly 2,6 million people. More than 1,4 million people were working in the construction and related industries.

<sup>6</sup> It is the Spanish central bank which lends to Spanish banks mostly through main financial operations. As the reader knows, in the EMU, open market operations are implemented by national central banks as we have a decentralized system of national central banks.

<sup>7</sup> Debts from one bank to another bank may rise because of a balance of trade operation or, just because agents decide to shift their savings from a deposit within a bank in country A to another bank in country B. See for instance Bindseil and König, 2011.

<sup>8</sup> According to the endogenous money view, Spanish banks create deposits when they grant loans to resident borrowers. And part of these deposits are used later to fund the purchase of some imports. Then, Spanish banks become indebted to banks in the exporting countries. These debts are financed often through the sale of Spanish mortgage backed securities to the creditor banks. In other words: the current account deficit is offset by a surplus in the capital account balance. Therefore, the savings glut hypothesis, an international version of the loanable funds theory, should not be accepted.

However, from 2007 to the present, things worsen considerably. On the one hand, the credit supply slows down. And non-performing-loans get multiplied by 8, mostly because of developers and builders default. As defaults rise, the profitability of banks falls; and as the Spanish economy is not giving any signs of recovery, many agents are moving their financial investments to safer harbours. Hence the liabilities to the TARGET2 increase substantially, currently reaching 14% GDP. Consequently, banks stop granting credit for two reasons: on the one hand, there is no solvent borrowing demand: household borrowing does not grow, nor does non financial corporations borrowing, since the prospects they face are rather gloomy. Only the government is managing to find some bank funding. On the other hand, banks cannot raise funds in bonds and money markets because they are perceived to have serious difficulties to pay back debts in the near future (it is very difficult to know how much banks are affected by the burst of the real estate bubble), and because of the absence of economic growth. In this situation, two additional factors have contributed to the fall in bank lending: the sovereign debt crisis is affecting banks assets negatively, and the new Basel Agreements (or Basel III) which required banks to increase their equity in relation to assets.

In essence, banks' behaviour is being procyclical. Thus, to falling household spending, due to forced saving to settle bank debt, and to firms declining investment demand because of the pessimistic expectations for future effective demand, we must add falling bank lending which drags aggregate demand even further in a context of recession.

#### **What should be done to bring the Spanish economy back to pre-downturn figures?**

Spain has a problem of effective demand, in a context which requires restoring competitiveness and reducing private leverage. This means 'squaring the circle'.

According to expression (8) above, GDP is ruled by the Keynesian principle of effective demand, where we can single out an autonomous demand, given by:

$$(9) \quad \left[ I_0 + G_t + NX_0 - x(p_t - p_t^{EMU}) + \left\{ \frac{\Delta D_t}{p_{H_t}} - c \cdot DSP_t \right\} \right]$$

And an induced demand given by:

$$(10) \quad \left[ c \cdot \frac{wL_{t-1}}{Y_{t-1}} + v \cdot g^e - m \right] Y_{t-1}$$

All factors are given in real terms, with  $\Delta D_t$  which accounts for household borrowing (for residential purposes).

If the root of the Great Recession in Spain is a lack of effective demand, as we defend, the recommendation of economic policy is clear; though, the accumulated imbalances, the institutional setting and the context in which the Spanish economy is embedded pose some constraints to the solutions which could be implemented.

We have set aside, from the beginning, the management of the interest rate and the exchange rate of our currency for obvious reasons.<sup>9</sup>

All the following measures increase demand:

- Technical change, which encourages firms to invest in order to modernize capacity, as encapsulated in factor  $I_0$ .
- Expansive fiscal policy,  $G_t$ .
- Expansive demand policies in partner countries, thus increasing Spanish exports,  $NX_0$ .

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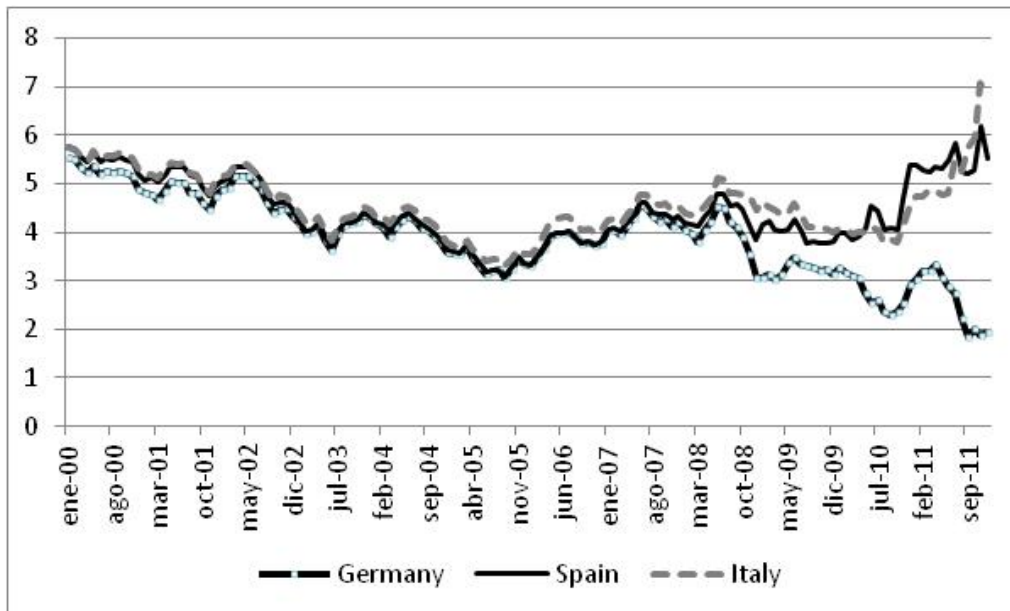
<sup>9</sup> Also, as Koo, 2008, has pointed out, when an economy is heavily indebted and in a process of deleveraging, monetary policy is not effective. This notwithstanding, the ECB should play a more active, stabilizing role in the sovereign debt market, because it is part of the monetary policy transmission mechanisms.

- Improving competitiveness, making domestic inflation fall relative to inflation in partner countries, in order to increase net exports,  $-x(p_t - p_t^{EMU})$ . It should be noted that this can be achieved either reducing  $p_t$  or, alternatively, by increasing  $p_t^{EMU}$ .
- Stimulating residential investment (reducing the price of houses, reducing taxes on house purchases, subsidizing house prices, etc.), increasing the factor  $\Delta D_t / p_{Ht}$ .
- Reducing debt service payments,  $c \cdot DSP_t$ : reducing interest rates, increasing maturities on outstanding bank debt, and, especially, increasing domestic inflation so that there will be a redistribution in favour of borrowers at the expense of lenders.

With regard to these measures, increasing investment for the modernization of capacity and stimulating residential investment are no longer feasible options for restoring prosperity. The first one is not under the control of economic authorities in the short run and the second one is difficult to implement, once the market is saturated (almost 700.000 dwellings unsold, according to official figures). Implementing expansive demand policies and increasing inflation in neighbouring countries requires cooperation from surplus countries in the euro zone. These measures would allow the Spanish economy to grow without increasing indebtedness.

The remaining ones, particularly expansive fiscal policy and increasing domestic inflation are interesting options, though difficult to put in practice by a single nation belonging to the EMU especially those with a current account deficit, and with a dubious effect on output and employment because of *secondary effects*. Fiscal policy will lead to crowding out: increasing public debt will widen the spread with German bonds, leading to more expensive funding for private corporations and households. This is because the government would have to issue debt in a currency which is not under its control (see De Grauwe, 2011, Kelton, 2011), and an important fraction of this debt is held by non-resident investors, despite the level of public debt over GDP in Spain is lower than in larger EMU countries.

**Figure 5: Ten-year bond yields. Germany, Italy and Spain**



Source: Banco de España.

And regarding growing domestic inflation, whilst it could reduce the burden of debt servicing on households, it would have a negative impact on the trade balance, thus requiring further borrowing in international markets. This is no longer feasible, because the Spanish economy is already heavily indebted to the rest of the world, a great deal of bank assets are not performing and, additionally, the Spanish Treasury is unable to provide support to a fund guaranteeing all bank deposits.

Therefore, it becomes apparent that expansive fiscal policies cum-inflation in trade surplus countries of the core EMU plus an active ECB granting the liquidity which the interbank market is not providing are a feasible and useful option to put the wheels of the Spanish economy in motion.

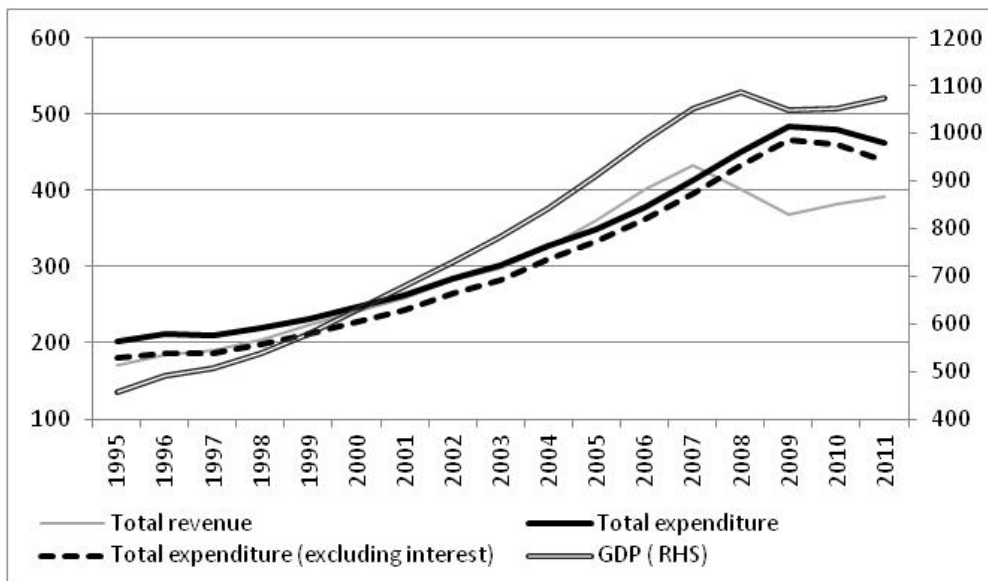
Table 2 above and Figure 7 below show that public consumption in 2008 and 2009, and exports since 2010 are the components of aggregate demand which are pulling the Spanish economy since it fell into recession, in 2008. However, it looks like being insufficient to leave the situation of low growth. Further, as most EMU countries are adopting fiscal consolidation measures, these sources of growth are no longer expected to work in the short to medium term, leading all agents to expect a new contraction of output and employment in the next two years.

**And what is being done to get out of the current mess?**

We can clearly distinguish two periods, regarding the economic policy put in practice by the Spanish government: before and after May 2010, when the Greek economy falls officially into crisis, then followed by Ireland (November) and Portugal (May 2011).

In 2008 and 2009, the Spanish government adopted an expansive, Keynesian fiscal policy, following recommendations of the G-20, the IMF and the European Plan for Economic Recovery, and provided some liquidity support to banks, with a view to keeping credit flowing. Spain's government budget, which has traditionally been in the red, had enjoyed a fiscal surplus in 2005, 2006 and 2007, ranging around roughly 2% GDP. However, two years later, in 2009, the fiscal deficit became 11.2% GDP.

**Figure 6: GDP and public budget. Spain. Billion euros. Nominal terms.**



Source: AMECO.

We can clearly see in the figure above and the table below two facts. First, the fiscal deficit in 2008 and onwards, is the consequence of the crisis, not its cause. Actually, revenue is greater than expenditure during the three years prior to the crisis. And second, whilst public expenditure kept on growing at a roughly stable pace until 2009, revenue fell sharply during the recession, thus leading to a loss of fiscal space in a very short period of time (there has been a ratchet effect: public spending has grown *pari passu* with revenue, driven in its turn by a booming real estate market; when the latter burst, revenues fell though public spending could not be reduced in similar proportions). The public budget shifted from a surplus of 1.9%



GDP to a -11.2% GDP deficit, with public debt rising 17 percentage points of GDP, to 53.8% GDP.

**Table 7: GDP, public budget and public debt. Real terms. Base year 2006.**

	GDP	Public spending	Interest on Debt	Public Revenue	Budget (%GDP)	Public Debt (%GDP)
2006	100	38,4	1,7	40,7	2.3%	39.6%
2007	103,5	40,6	1,7	42,5	1.9%	36.2%
2008	104,4	43,3	1,7	38,6	-4.5%	40.1%
2009	100,6	46,5	1,7	35,3	-11.1%	53.8%
2010	100,5	45,8	1,9	36,5	-9.3%	61.1%
2011	101,2	44,1	2,4	35,5	-8.5%	68.5%
$\Delta\%$ 09 - 07	-2.83%	14.52%	3.72%	-17.02%	-13.0%	17.6%

Source: AMECO and authors' elaboration.

More than 50% of the increase in the public deficit in 2009, in relation to 2007, is due to a fall in public revenue, mostly because of its strong dependence on real estate activities, but also due to automatic stabilizers.<sup>10</sup> And, in a period of strong private deleverage, falling taxes have a low multiplier effect on output. Regarding expenditure, the government focused on activities related to the construction industry (mostly repairs of urban infrastructures) which had a short term effect on employment and had little impact in terms of output.<sup>11</sup>

The other measure developed by the government was the provision of liquidity to troubled financial firms (especially saving banks, or *cajas*) through the *Fondo de Adquisición de Activos Financieros* (FAAF or Fund to Purchase Financial Assets) and the provision of guarantees to banks when they borrowed in financial markets, which was quantitatively low, relative to other EMU countries (see European Commission, 2009, p. 63).

However, since May 2010, the Government, under pressure from the European Commission, makes a U-turn: it continues providing support to financial institutions though, regarding fiscal policy, it shifts towards austerity, and introduces some supply side reforms (especially in the labour market) with the hope that the latter will compensate for the former in the long run.

Regarding support to financial institutions, the government changes from liquidity support to restructuring the sector with additional help to recapitalize banks and a restructuring of the sector creating the *Fondo de Reestructuración Ordenada del sector Bancario* (FROB or fund for restoring order in the banking sector, through mergers, reducing public control on the *Cajas*, reforming stress tests, adopting new Basel Agreements which involve higher capital ratios, increasing the provision coverage of financial assets related to the real estate market, better and greater transparency, etc. See Carbó and Maudos, 2011).

With respect to fiscal austerity and structural reforms, the Spanish government adopts the *Euro Plus Pact* and the *European Semester* (see European Commission, 2011). In essence:

- Fiscal consolidation and sustainability of public accounts in the long run.
  - Reducing social expenditure, especially in health and education.
  - Reducing public sector wages.
  - Increasing direct and indirect taxes.
  - Reforming the pension system, delaying the retirement age, reducing pension benefits and making it harder to retire before the legal age.
  - Legislative changes to prohibit *excessive* fiscal deficits.

<sup>10</sup> Though, not all of the fall in revenue is caused by a contraction of economic activity: in 2008 there were general elections and the government introduced tax cuts as a way to get more votes.

<sup>11</sup> In quantitative terms the fiscal stimulus program in these two years was estimated at about 2.32% GDP. For more details, see Uxó *et al.*, 2010.

- Reforms in the labour market, aiming at increasing competitiveness and reducing dualism (between insiders and outsiders).
  - Reducing firing costs.
  - Increasing the circumstances under which firms can opt-out of collective wage bargaining.
  - Allowing private employment agencies to operate in the labour market.
  - Subsidizing the hiring of young unemployed people.

This shift in economic policy from Keynesian to austerity measures is caused by the fear of a sovereign debt default due to (i) the rapid increase in public debt in 2008 and 2009, and (ii) the risk that private debt (mostly held by banks) becomes public debt when the government provides financial support to banks in order to make credit keep flowing.

To sum up. Authorities have reacted to the Great Recession, after the onset of the Greek crisis, assuming that (i) fiscal consolidation is a necessary condition for recovery, (ii) rising unemployment can and must be solved by means of reforms in the labour market, (iii) current account imbalances are a consequence of wages growing faster than productivity, and (iv) banks are not lending because of a lack of confidence in the funding markets. This appears to be in great contradiction with the thesis which we defend in this contribution: (a) the public deficit is the consequence of the recession, not its cause, and more public spending is required, (b) the Spanish economy was able to increase the amount of employment by 50% between 1997 and 2007, with a given set of rules and institutions in the labour market, and it is not clear why such a labour market does not work now, (c) core European countries, with current account surpluses, are partially responsible for the imbalances at the EMU level, because of their restrictive policies since the mid 1990s (see Uxó *et al.* 2011), and (d) banks are not lending because they cannot find solvent borrowers, and not only because they encounter problems when asking for funds in money markets (as the Bank Lending Survey for the third quarter of 2011 shows: see ECB, 2011). The economic growth of a country cannot be grounded on unlimited indebtedness, either private or public. Though, public spending should not be removed when private agents are deleveraging.

### **But, will austerity work?**

This question raises another two. First, how cuts in public spending, plus reforms in the labour market, will affect the evolution of GDP? And second, what is the relation between GDP and the ability to settle debts when they are due for payment? According to the policy implemented by the government (ruled by the Socialist Party until November 2011 and the Conservative Party since then) the recovery in Spain is expected to occur through the following steps. First, it is assumed that fiscal consolidation will subtract aggregate demand to the whole economy, thus leading to a contraction, which should be added to the one caused by the bursting of the real estate bubble. However, this consolidation will revive confidence in financial markets if debts can be paid back as they mature, and then, the interest rate (related to long term public debt) will fall and funds will be become available, stimulating private components of aggregate demand. Second, the reforms in the labour market will bring some competitiveness as wages will become more aligned to productivity. This will add a positive contribution to output through the trade balance, and some additional reserves to pay back debt to the rest of the world. And as output begins to grow, and employment recovers, consumption will follow *pari passu* with employment. A rate of unemployment around 16% is expected in 2014 (according to the Stability Programme for 2011-2014).

This account fits in well with the New Consensus or 3-equations model.<sup>12</sup> The only alien element is the interest rate, which is not determined by a national central bank but by

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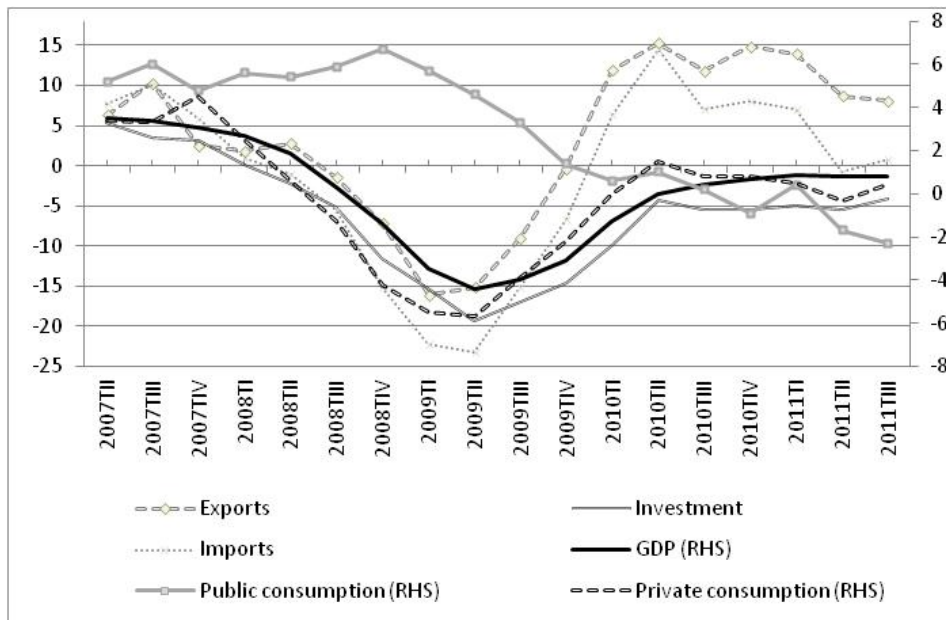
<sup>12</sup> For a critical appraisal of this model see, for instance, Arestis and Sawyer, 2004, especially chapter 2.

participants in the sovereign debt markets. Hence, confidence replaces the central bank making this interest rate fall when fiscal consolidation takes place.

There are two officially admitted related risks (IMF, 2010), within this strategy: (i) fiscal consolidation is grounded on a rather optimistic view of the evolution of GDP. If forecasts are mistaken because a larger GDP growth was expected than actually happened, interest rates will not fall (and then public debt will crowd out private investment); (ii) if the fiscal consolidation is performed too fast and the subsequent recovery takes place slowly there is a risk of hysteresis, with output and employment stabilizing around too low a level (there will be hysteresis). And another risk which is not taken into account is that the fall of GDP will make the rate of non-performing loans to rise, giving rise to further problems to banks' lending.

In our view, these are not risks within a well defined strategy, but the expected outcome of a programme unwillingly designed to keep the economy performing below socially acceptable levels of activity and employment. Fiscal consolidation has been dragging output since 2010. And a lower GDP reduces public revenue making it even harder to reach targets on the public budget balance and giving rise to a downward spiral, as Spain's recent experience is showing.<sup>13</sup> Actually, the stability programme for the Spanish economy from 2011 to 2014 projected a public deficit amounting to 6% GDP in 2011, that has actually been 8.5% GDP because of the insufficiency of effective demand needed to make GDP grow enough. And the expected lack of growth is leading rating agencies to downgrade public debt so that the spread with German *bunds* is not falling, despite the big fiscal effort (see Figure 5 above). Exports have been doing pretty well since the end of 2009 up to the present. However, they will not be able to take the relay baton of growing demand from public consumption (see Table 8 below and expression (8) above), because of austerity in the rest of the EMU.

**Figure 7: GDP. Demand components. Growth rates. Real terms. Spain, 2007:2 -2011:3.**



Source: INE.

Further, when households are still heavily indebted to banks, an internal competitive devaluation aiming at stimulating exports, will do more harm than good because, as pointed

<sup>13</sup> In the absence of a sovereign central bank, the Spanish fiscal authority will have to provide support to some troubled financial institutions. By and large, this help does not rise the public budget deficit, though it contributes to raise public debt.

out above, this will mean a redistribution in favour of creditors. Falling nominal wages, with debt servicing in nominal terms, will lead to a weaker demand for consumer goods, as household disposable income, net of debt settlements, fall (the Fisher effect). And falling inflation, when the nominal interest rate is not falling in a larger proportion (as the 3-equations model holds, grounded on the Taylor's Rule) makes the real interest rate rise, further aggravating the situation.<sup>14</sup>

In a short period of time, the official projections about the evolution of GDP and its main components have changed dramatically, as the following table shows:

**Table 8: Official projections. Spanish Government. Stability Programmes 2011 – 2014 and 2012 – 2015.**

	2010	2011	2012	2013
<b>Spanish Government's forecast April 2011</b>				
GDP	-0.1	1.3	<b>2.3</b>	2.4
Budget balance	-9.2	<b>-6</b>	-4.4	-3
Revenue	37.7	36.7	37	37.5
Expenditure	45	42.7	41.4	40.5
Interest	1.9	2.2	2.5	2.7
Primary balance	-7.3	-3.8	-1.9	-0.3
Private consumption	1.2	0.9	1.4	1.6
Public consumption	-0.7	-1.3	-0.8	-0.6
Investment	-7	-1.3	2.7	3.7
Exports	10.3	8.3	7.9	7.2
Imports	5.4	3	4.1	4.7
Current account balance	-3.9	-3.4	-2.7	-2
Rate of unemployment	20.1	19.8	18.5	17.3
<b>Spanish Government's forecast April 2012</b>				
GDP		0.7	<b>-1.7</b>	0.2
Private consumption		-0.1	-1.4	-1.1
Public consumption		-2.2	-8.0	-4.6
Investment		-5.1	-9.0	-0.5
Exports		9.0	3.5	6.9
Imports		-0.1	-5.1	1.3
Current account balance		-3.4	-0.9	0.8
Rate of unemployment		21.6	24.3	24.2
Budget balance		<b>-8.5</b>	-5.3	-3
Growth of Spanish exports markets		4.8	2.4	5.4

**Source: Ministry of Finance.**

Contrary to the Government's expectations, GDP did not grow at 1.3% in 2011 and will not grow at 2.3% in 2012, but the rate in 2011 was 0.7% (0.5 percentage points lower) and it is

<sup>14</sup> The 3-equations model, underlying the austerity option, requires the nominal interest rate to change in the same direction as inflation, though to a greater extent, for a stable solution for output and inflation. In graphical terms, this condition grants a negatively sloped aggregate demand. However, when an economy is heavily indebted, and the interest rate is given from the outside and it does not change when inflation changes, as is the case for the Spanish economy, such a stability condition does not hold. Falling inflation (because of falling nominal wages) reduces the purchasing power of households reducing consumption, as debt servicing is in nominal terms; and falling inflation for a given (and non-falling) nominal interest rate leads to a rising real interest rate. Of course, declining inflation is a competitive devaluation which (under normal circumstances) positively affects exports. Yet, it looks like the latter will not compensate for the negative consequences of the former.

now expected to grow at -1.7% in 2012. Because of the lack of GDP growth, the target for the budget deficit could not be met (it has been 8.5% GDP instead of the 6% forecast). Private consumption and investment will recover neither in 2012, nor in the next year. And exports will not grow as expected in 2012, mostly because our neighbouring countries will implement austerity policies as well, as indicated by the bottom row in the table above. Consequently, fiscal consolidation will shrink output, and will also shift the rate of unemployment upwards by roughly 5 percentage points.

And the absence of a central bank playing the role of lender of last resort, particularly providing guarantees to bank deposits, will make public debt will to rise as the National Treasury assumes that role, because the rate of non-performing loans will increase *pari passu* with unemployment.

### **So is there any possibility of recovery? Some concluding remarks.**

Problems at the EMU level require solutions at the EMU level. The main problem of the Spanish economy is that of lack of effective demand, as a consequence of the aforementioned excessive private indebtedness, in a context of high (private) indebtedness to the rest of the world, when international financial markets are frozen. The Spanish authorities, forced by the European Commission, have reacted as if the cause of the crisis was the public deficit, out of control because of lack of discipline, and low competitiveness, because wages have outstripped productivity during a long period of time. Consequently, politicians have opted for fiscal austerity and competitive devaluation. In this chapter, we have argued that this economic policy will not bring Spain back to pre-downturn figures, either for output or employment. Furthermore, austerity will shrink GDP and thus public revenue, making it harder to settle debts and this will make the spread with German bonds too high.

The alternative to austerity is expansive fiscal policy. However, this Keynesian option is not free of obstacles if it is implemented at the nation state level: the possibility of default for the government is very real if public debt goes beyond a certain threshold, so that public deficit may cause crowding out; and existing competitive problems may make the economy derail if the economy returns to a path of prosperity.

So, if an expansive strategy, which appears to be what is really needed, will not work when put in practice at the level of a nation state, what about implementing it at a European level? Many authors have suggested that the chief problem in the Euro Zone is current account imbalances within countries sharing the euro as a single currency (see for instance Hein *et al.* 2011 and Uxó *et al.* 2011). To this we should add that this is taking place in a context of generalized low aggregate demand. An adequate economic policy would consist of two elements. On the one hand, a proactive fiscal policy at the EMU level, managed by a true European fiscal authority –something which needs to be created– and an ECB providing financial support for public deficit. On the other hand, a realignment of the price levels within the EMU, mostly by increasing, temporarily, nominal wages above productivity in the surplus countries, something which would have two effects. First, it would lead to a functional redistribution in favour of labour in these countries, and second, it would help periphery European countries restore competitiveness without requiring deflationary policies.

A fully fledged political union would make this economic policy easier to implement. However, a fully political union appears to be unlikely, even in the long run. Although this *ideal* solution is far from achievable, some small steps may help. As De Grauwe, *op.cit.* suggests, a European Monetary Fund, Eurobonds and some coordination on fiscal and wage policies could help restore prosperity in the EMU.

If a European solution is not possible, should we not think about leaving the European project?

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