Investment Focus:
The Pain in Spain
Five Reasons Why Spain’s Problems Are Worse than the Market Anticipates

1. Spain’s national debt is 50% greater than the headline numbers
   - Spain’s debt-to-GDP balloons from 60% to 90% of GDP with regional and other debts

2. Spain’s housing prices will fall by an additional 35%
   - Spain built one house for every additional person added to the population during the past two decades; the fall will decrease GDP by ~2% each of the next two years

3. Spain has “zombie” banks with massive loans to developers and to homeowners
   - Banks have not begun to realize losses and are vastly undercapitalized

4. Spain’s economy has not stabilized and will continue to deteriorate
   - Spain has the highest unemployment in the developed world, one of the highest overall debt loads, and the most uncompetitive labor market in Europe

5. The EU will not have the firepower or political will to bail out Spain
   - Rescue fund headline numbers are misleading and count capital that is not yet committed
The Market Will Question Spain’s Solvency as Its Problems Compound Each Other

- These problems will reveal themselves in the next 12 months
  - Spain’s true debt burden will pass the 90% “tipping point” identified by Rogoff and Reinhart
  - Housing prices will fall further and faster than anticipated (consensus is 15%; CAM estimate is 35%)
  - Banks underestimate the residential real estate loan defaults (consensus estimate is 2.8% vs. CAM estimate of 11%)
  - Expected housing price depreciation and loan defaults will deepen Spain’s recession (additional 2% contraction in 2012 and 2013)
  - Spain will need to refinance €186.1 Billion in 2012 alone

- 10-year Credit Default Swap (CDS) on the Kingdom of Spain will move higher as these surprises are announced
Spain’s Credit Default Will Widen More than Other Peripheral European Countries
Spain’s National Debt Is 50% Greater than the Headline Numbers

Debt to GDP (As of YE ’11)

Source: IMF

Spain's Det to GDP is closer to 90% than 60%

Sources: Bank of Spain Statistical Bulletin for National, Regional and Local Debt; Bloomberg for Sovereign Guaranteed debt
Spain’s Housing Prices Will Fall by an Additional 35%
Spain Has “Zombie” Banks with Massive Loans to Developers and to Homeowners

Total Loans
Billions of Euro YE 2011

Doubtful Loans
Billions of Euro YE 2011

Source: Bank of Spain
Spain’s Economy Has Not Stabilized and Will Continue to Deteriorate

1 in 4 Spaniards is out of work. Youth unemployment is 50%.
Europe Will Not Have the Firepower or Political Will to Bail Out Spain

- Numbers as high as €940bn have been touted for the combined European Stability Mechanism (ESM) and European Financial Stability Fund (EFSF)
  - Germany would increase from €211bn to €401bn
  - This has not yet been approved by the Bundestag or the Constitutional Court – both barely approved the initial allocation
- The ESM relies not only on unapproved financing from Germany, but calls initial capital from Portugal, Ireland and even Greece
- The size of the bail out funds is insufficient if Spain and Italy lose access to the debt markets
  - Spain alone would take 60% of the available funds
Summary: CDS on the Kingdom of Spain

- **Rationale**: We began buying Spain CDS in Q4 2011 because the country has significant structural problems within its economy, a debt load that is higher than the headline number, and a banking system with unrealized losses.

- **Instrument**: 10-year CDS on the Kingdom of Spain

- **Cost / Capital Commitment**: 3.5% of notional per annum – effectively an option premium on the default of Spain during the next 10 years.

- **Expected Return**: Should the Spanish crisis flare up in 2012 as we expect, we can generate a 300% return on the annual premium.
Spain’s Debt Is 50% Greater than the Headline Numbers
Spain’s Debt-to-GDP Is Higher than Officials State and Will Likely Continue to Increase

- A fuller account of Spain’s debt-to-GDP places the burden at over 92% from the official rate of 61%
- Official projected budget deficit levels of 5.3% in ‘12 and 3.0% in ‘13 are unlikely to be met
  - Admitted deficits would add 8.3% of GDP to the debt by YE ‘13
  - Levels are likely to be missed so additional debt is likely to be higher by more than 10%
- GDP itself is likely to be lower than official forecasts as a vicious combination of increased austerity, falling asset prices and high unemployment take hold
  - IMF forecasts a fall of 1.7% in ‘12 and 0.3% in ‘13
  - Given a negative wealth effect for rapidly falling housing prices, we expect GDP to be lower – ~3% in ‘12 and ~1% in ‘13
- By YE ‘13 debt-to-GDP will be close to 110%
There are several sources of additional debt:

- Spain and the regional governments have €87.5bn of unpaid bills.
- There are state corporations with explicitly guaranteed debt of €55.9bn.
- Debt held by the social security fund equals €56.6bn.
- In total these would bring debt-to-GDP to 90%.
There are agencies and banks that have been explicitly guaranteed by the Kingdom of Spain:

- The ICO (Instituto de Credito Ofical) is a state backed lender – no maximum draw
- FROB (Fondo de Reestructuracion Ordenada Bancaria) is a fund for the restructuring of banks - maximum draw could be €27bn
- FADE is the (Fundo de Amortizacion del Deficit Electrico), which covers the amount by which Spain fails to cover electricity costs – Maximum draw €22bn
- The banks are getting guarantees so that they can post this funding to the ECB – no maximum draw
- AIF (Administrador de Infraestructuras Ferroviarias) operates the rail network in Spain

At these current draw amounts, debt-to-GDP would increase by 14.8%

Cumulatively Spain approaches 100% debt-to-GDP
Spain’s Surplus in the 2000’s Coincided with a Building Boom

Spain budget balance as a percentage of GDP
Only the Rosiest Projections Reach the 3% Deficit Goal for 2013

- The Government had agreed with the European Union to meet a 2012 deficit of 4.4%
  - On March 2\textsuperscript{nd}, the government adjusted the target to 5.8%
  - It has since agreed to 5.3%
- Even this looks aggressive
Even the IMF Does Not Foresee Spain Getting to a Primary Surplus Any Time Soon
Controlling Costs Is Difficult Because of Regional Government Spending

- Autonomous and local governments have their own politics and are often at odds with the central government
  - This makes getting their deficits down prone to regional politics
- Recently, the central government agreed to pay €35bn of local and regional debt
Regional Government Debt Is Not Counted in the Country’s Overall Debt-to-GDP

- As opposed to almost all other European countries, Spain’s healthcare is paid by the regions, with limited central government interference.

- As the population ages and healthcare costs escalate, the fiscal pressure on the regions will become more intense.

- Some regions have started to look to the central government to fund healthcare directly.
Spain’s Housing Prices Will Fall by an Additional 35%
Compared to the US, the Housing Bubble in Spain Was Extreme

- We estimate that housing prices will have to fall at least 35%
- During the bubble years (‘00-’08), Spain built one new home for every person it added to the population
- In relation to the US, housing prices rose 30% higher and have yet to fall to where US housing was at the peak
- Also during this time, housing prices compounded at 12% while wages only went up 4% per annum
  - Should wages fall to be in line with Germany, house prices would need to fall over 50% to be back at pre-bubble relationship
- While the ratio of people to homes in the US stayed basically constant, in Spain it fell
  - Spain now has only 1.7 people to fill each home – lowest of major developed countries
- Households in Spain have an enormous 80% of wealth in real estate – 24% own second homes
  - As the population ages, they will need to sell these holdings for retirement – Who will be the buyer?
Housing Prices Have Outstripped Wages
Spain Has Overbuilt its Housing Stock Relative to its Growth in Population

- Demographic changes such as fewer people per dwelling and more recent second home buyers will compound the problem
- Implies that Spain has significant excess housing

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**Spain added one home per person for almost two decades**

Sources: IMF, Ministerio de Fomento, Asociacion Hipotecaria Espanola

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**People per Dwelling**

Source: European Mortgage Federation, IMF, Ministry of Internal Affairs and Communications (Japan - years '09 & '10 Estimated)

- In comparison to the US 25.0% overbuilt = 6.45mm units
- In comparison to Japan 17.1% overbuilt = 4.42mm units
- In comparison to Europe 9.4% overbuilt = 2.44mm units

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**European construction and housing overbuilding 2001-09, percentage of long-term average 1970-2000**

Source: Center for European Policy Studies
Housing Has Been a Great Investment in Spain, but It Is Not Affordable Now

Figure 3: Return on main Spanish asset classes

Figure 15: Spain has one of the highest Housing Prices to Income per capita ratios in the world

Source: Bank of Spain, BIS, CNMV, Housing Ministry (adjusted), Bloomberg

Source: OECD
Strong Investment Returns on Housing Have Boosted Home Ownership Rates

- High investment returns tend to draw people in
  - Thus creating a “bubble” and diminishing returns
  - Also encouraging speculative borrowing
  - High rates of homeownership can also reduce labor mobility

- Over time housing excesses diminish the credit quality of the country itself
Retirees Will have to Sell their Houses but There Are No Obvious Buyers

Households asset split (% of total assets)

Source: Oliver Wyman

<table>
<thead>
<tr>
<th>Country</th>
<th>Real Estate</th>
<th>Other non-financial assets</th>
<th>Financial assets</th>
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<td>US</td>
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</table>

Already at homeownership age, with few buyers behind them

Population pyramids for Spain

Source: Long-Term Population Projection

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Prices Will Have to Drop Further Before Homes Become Affordable

US homes are far more affordable after the crisis

Spanish homes are 30% LESS affordable than’99

Source: National Association of Realtors

Source: Bank of Spain
A Fall in Housing Prices Will Reduce GDP

- If prices were to fall to match US - ~35%
- To match Spanish income growth -~30%
  - Including a fall in wages to bring in line with Euro labor costs -~45%
- To match ‘99 affordability -~30%
  - To match affordability in US -~55%
- Contributing factors
  - Possible increase in homeownership rate? – “NO” most already own
  - New buyers? – “NO” aging population and the need to convert homes to fund retirement
  - Tight inventory? – “NO” there are as much as 20% excess houses
- Conclusion – housing prices have to drop at least 1/3 from current levels
  - We believe that this will take place over 2-3 years as housing generally does not devalue faster than ~15% per annum
- The Bank of Spain estimates that the “Wealth Effect” is about a €0.03 reduction in consumption for a €1 fall in housing prices¹

A 15% decline in housing should reduce GDP by ~2% in both 2012 and 2013

¹“Housing boom and burst as seen from the Spanish Survey of Household Finances”, Olympia Bover
Spain Has “Zombie” Banks with Massive Loans to Developers and to Homeowners
Banks in Spain Are Holding Devastating Real Estate Losses

- We estimate that Spanish banks may need €200bn of additional capital – nearly 20% of GDP
- Given the losses experienced in the last housing crash of ‘93-‘94, we would expect losses to be much higher than the banks have admitted
  - This bubble was larger in scope and scale, yet mortgage losses are 50% what they were then – they should be much higher
- Spain has likely 50% of GDP in commercial real estate assets, many of these are to distressed builders and developers, with minimal recovery value likely
- Problem Loans are still below what was experienced in the early ‘90’s while corporate bankruptcies are 10x that period
- The LTRO has given Spanish banks some new financing, which they seem to have put into Spain sovereign debt
  - If prices on this debt falls even by 0.5%, the banks will be asked for additional collateral – this was a similar situation to MF global
  - Banks’ government holdings are now 33% greater then their tangible equity
  - While banks can be more profitable by adding additional leverage, they would still lose money on their current asset base
Mortgages Default Rates Will Rise Dramatically

During the last housing boom mortgage default rates peaked about 5.5%

Given the enormous jump in housing prices and unemployment, default rates could double or more

Source: OECD

Default Rates - Current Crisis
Source: Asociacion Hipotecaria Espanola
Spanish Banks Hold Large Exposures to Commercial Real Estate

Not only do German banks have 2/3 the CRE exposure, Germany's economy is 2.5x times bigger than Spain.

Because the left hand graph does not include non-EBA banks, it underestimates the size of the exposure by 60%.
16% of Euro CMBS Is in “Special Servicing”
Current Crisis Is Much Worse than ‘93-'94, but Loan Delinquencies Are Lower (So Far)

Corporate bankruptcies are 8x the amount during the ‘93-'94 crisis and 20% more than ‘09

We are likely not even near the peak of delinquencies and therefore defaults and losses
CAM Estimates that Bank Losses are Sizable With Even a Modestly Poor Economic Outlook

<table>
<thead>
<tr>
<th>Area</th>
<th>Total Loans</th>
<th>Default Rate</th>
<th>Loss on Default</th>
<th>Loss Euro Bn</th>
<th>Default Rate</th>
<th>Loss on Default</th>
<th>Rationale</th>
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<tr>
<td>Real Estate Services</td>
<td>€ 298.3</td>
<td>40%</td>
<td>75%</td>
<td>€ 89</td>
<td>2x current &quot;Doubtful&quot;</td>
<td>Effectively unsecured loans to businesses</td>
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<tr>
<td>Services Other Than Real Estate</td>
<td>€ 382.0</td>
<td>15%</td>
<td>75%</td>
<td>€ 43</td>
<td>Reflection of greatly increased bankruptcy rate</td>
<td>Effectively unsecured loans to businesses</td>
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<td>Personal Mortgages</td>
<td>€ 656.5</td>
<td>11%</td>
<td>50%</td>
<td>€ 36</td>
<td>2x '93-'94 default rates</td>
<td>Losses mitigated by recourse to borrower</td>
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<td>Construction</td>
<td>€ 98.5</td>
<td>40%</td>
<td>75%</td>
<td>€ 30</td>
<td>2x current &quot;Doubtful&quot;</td>
<td>Consideration to Real Estate already owned by banks</td>
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<tr>
<td>Consumer Other</td>
<td>€ 99.5</td>
<td>10%</td>
<td>75%</td>
<td>€ 7</td>
<td>Increase reflective of unemployment</td>
<td>Unsecured loans to consumers</td>
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<td>Industry</td>
<td>€ 143.2</td>
<td>10%</td>
<td>40%</td>
<td>€ 6</td>
<td>Reflective of weakening economy and austerity</td>
<td>Reflective of mix of secured and unsecured loans</td>
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<td>Consumer Durable</td>
<td>€ 37.7</td>
<td>10%</td>
<td>50%</td>
<td>€ 2</td>
<td>Increase reflective of unemployment</td>
<td>Secured loans to consumers</td>
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<td>Agriculture</td>
<td>€ 21.8</td>
<td>10%</td>
<td>50%</td>
<td>€ 1</td>
<td>Modest increase to current default rates</td>
<td>Estimate</td>
<td></td>
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Total: € 214

% of GDP: 19.97%
LTRO Has Relieved Funding Pressure, but Spreads Are Rising Again

CDS spreads on domestically focused Spanish banks
Banks Have Greatly Increased Exposure to Sovereign, Likely Via Leverage

When the market discovered how much exposure MF Global had to European Sovereigns, a de facto “bank run” occurred. Could the whole system be doing the same now?!?!
LTRO Allows Banks to Add New Assets Profitably, but Not Against Current Assets

Current spread is 223 bps

3Yr Spanish Govt Bond Yield
LTRO Funding Rate

IMF RoA Est
ECB RoA Est
LTRO

Versus the banks current assets, LTRO implies "negative carry"
Spain’s Economy Has Not Stabilized and Will Continue to Deteriorate
Spain’s Economy Has Intractable Problems

- Spain’s economy has enjoyed the lower interest rates that came with Eurozone membership
  - This translated into a building boom that masked the decline in competitiveness in the economy
  - At the peak there 1-in-7 people worked directly in construction (vs the US at 1-in-22) and this had a multiplier effect creating other jobs
- Since the advent of the Euro, Spain’s labor force has become increasingly uncompetitive
  - Labor costs have to fall 14% to match the Eurozone average and 30% to match Germany
- The structural defects in the labor market are only starting to be addressed
- Unemployment is at a developed country high of 24%, with youth unemployment at almost 50%
- The combined effect of falling asset prices, declining wages and high unemployment will have deleterious effects on consumer confidence and consumption
  - Consumption is 60% of the economy
Spain’s Labor Is Expensive

Unit Labor Costs since the introduction of the Euro – Source OECD
Spain Has the Worst Labor Restrictions

The World Bank has created an index of employment and wage rigidity with a scale of 0-100 (100 being the most rigid). The US is at 1, the UK is at 14, China is 24 but in terms of Europe, Italy is at 54, France is at 56 and Spain is at 63.

Source: ISI Group
Construction Jobs Are Not Coming Back

% of Workforce Involved in Construction

Source: Bloomberg
Exports Are Vulnerable to a European Slowdown

**Spanish Exports Rely on European Demand**

<table>
<thead>
<tr>
<th>Country</th>
<th>Absolutes (MM)</th>
<th>% of Total Exports</th>
<th>Extra-Euro zone (MM)</th>
<th>% of Total Exports</th>
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<tr>
<td>France</td>
<td>45,061</td>
<td>18.7%</td>
<td>United States</td>
<td>7,846</td>
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<td>Germany</td>
<td>25,779</td>
<td>10.7%</td>
<td>Turkey</td>
<td>4,708</td>
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<td>Portugal</td>
<td>21,986</td>
<td>9.1%</td>
<td>Switzerland</td>
<td>4,473</td>
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<td>Italy</td>
<td>21,610</td>
<td>9.0%</td>
<td>Poland</td>
<td>3,694</td>
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<td>United Kingdom</td>
<td>15,238</td>
<td>6.3%</td>
<td>China</td>
<td>3,391</td>
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<td>United States</td>
<td>7,846</td>
<td>3.3%</td>
<td>Mexico</td>
<td>3,373</td>
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<td>Netherlands</td>
<td>7,715</td>
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<td>6,920</td>
<td>2.9%</td>
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<td>Turkey</td>
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<td>Switzerland</td>
<td>4,473</td>
<td>1.9%</td>
<td>Czech Republic</td>
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Top 10 Export Partners: 161,335 66.9%  Top 10 Extra-Euro zone Export Partners: 37,308 15.5%

*Shaded cells indicate Euro zone members.
Source: IMF Direction of Trade Statistics, Knight Research

Sources: INE, Bank of Spain

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Spain’s Exports Are Getting Cheaper and Its Imports More Expensive

2008 net exports

Foodstuff

Oil

IMF Daily Commodity Price Indices
(Jan. 3, 2011 = 100)

Oil prices rising

Food prices falling

Source: Bloomberg L.P.
Manufacturing in Spain Is Weakening Even Relative to the Rest of Europe

Eurozone PMI and GDP

Spain PMI and Production

Sources: Markit, Eurostat.

Sources: Markit, INE
The IMF Projects Spain Will Be in Recession in 2012 and 2013

<table>
<thead>
<tr>
<th>Region</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>Revenue Change from September 2011 WEO Projections</th>
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<tr>
<td>Middle East and North Africa (MENA)</td>
<td>4.3</td>
<td>3.1</td>
<td>3.2</td>
<td>3.6</td>
<td>-0.3</td>
</tr>
<tr>
<td>Sub-Saharan Africa</td>
<td>5.3</td>
<td>4.9</td>
<td>5.5</td>
<td>5.3</td>
<td>-0.3</td>
</tr>
<tr>
<td>South Africa</td>
<td>2.9</td>
<td>3.1</td>
<td>2.5</td>
<td>3.4</td>
<td>-1.1</td>
</tr>
</tbody>
</table>

WEO = World Economic Outlook last published January 24, 2012

Only one of two countries in recession in 2013
Most severe change of any nation from the Sept '11 WEO to the Jan '12
Spain Has Lost Control of Interest Rates and Currency by Being in the Euro

Effective interest rates are 4% too high

The “currency” needs to fall 15%

Figure 3.2 Deviations from the Taylor Rule in Ireland, Spain and the US

Intra-European Real Effective Exchange Rates (1998=100)

Notes: TRt = CPIt + (average IR over the sample period) + 0.5*(CPIt - 2%) + 0.5*output gap, where TRt is the implied interest rate in period t, CPIt is the consumer price index and IR is the central bank’s official interest rate.

Sources: Data on inflation and output gap from the IMF World Economic Outlook Database and calculating the implied interest rate according to the formula.

Source: Center for Economic Policy Research
Spain Has Too Much Overall Debt Which Is Owned by Foreigners

These two countries have control of their own currency

Net external debt as a % of GDP (YE '10)

Source: McKinsey Global Institute & The World Bank
Europe Will Not Have the Firepower or Political Will to Bail Out Spain
The Headline Numbers for the European Firewall Are Unrealistic and Misleading

- The headline numbers on the combined European firewall is as large as €940bn
- This counts €220bn of funds already committed to Portugal, Ireland and Spain
- Germany would owe a total of €401bn – they currently only have approval both by the Bundestag and the Constitutional Court for €211bn
- Greece would owe €20bn – impressive for a country that just was bailed out
- Spain would owe €176bn – which is 16% of GDP and 154% of the expected Government tax revenues for 2012
- Obviously if Spain needs to be bailed out the size of the Fund will be much smaller than the headline
Details on the Firewall Size Are Uncertain

- There are two rescue mechanisms
  - European Financial Stability Facility (EFSF) – commitments from members are undrawn until needed and funds to this point have been lent directly to national governments
    - German commitment capped at €211bn which has been approved by the legislature and the Constitutional Court
  - European Stability Mechanism (ESM) – Initial drawn capital has been set at €80bn which will be funded by the members, additional capital can be drawn up to a total of €500bn
    - Unclear at this point if weak countries will have to pay the initial funding
    - Initial capital call equals ~0.9% of GDP – would this count against the budget deficit? The €9.5bn capital call on Spain equals almost 10% of LTM government revenues
    - German commitment capped at €190bn which if is part of the €211bn has been approved
  - If the programs are to run concurrently, would Germany need approval by the Bundestag? Would it face another challenge in the Constitutional Court?
If Spain Unravels, the Size of the Problem Grows and the Rescue Funds Shrink

- Should all of the GIIPS countries be forced to drop out of ESM and EFSF, roughly 1/3 of the commitments would disappear.

- Should Spain lose complete access to the markets like Greece, Ireland and Portugal have, the worst case funding needs are very large:

<table>
<thead>
<tr>
<th>Maturing Debt</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bills</td>
<td>60.4</td>
<td>21.1</td>
</tr>
<tr>
<td>Bonds</td>
<td>45.1</td>
<td>60.4</td>
</tr>
<tr>
<td>International bonds</td>
<td>3</td>
<td>1.5</td>
</tr>
<tr>
<td>ICO</td>
<td>10.4</td>
<td>15.4</td>
</tr>
<tr>
<td>FROB</td>
<td>3</td>
<td>2.1</td>
</tr>
<tr>
<td>FADE</td>
<td>2.1</td>
<td>2.7</td>
</tr>
<tr>
<td>Deficit (estimated by CITI)</td>
<td>70.1</td>
<td>43.8</td>
</tr>
<tr>
<td>Bank debt guaranteed by Spain</td>
<td>26.1</td>
<td>5.5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>220.2</strong></td>
<td><strong>152.5</strong></td>
</tr>
<tr>
<td><strong>Sum for '12 and '13</strong></td>
<td>372.7</td>
<td></td>
</tr>
</tbody>
</table>

- In this worst case, Spain would take up nearly 60% of the fully drawn headline numbers – leaving less for Italy, Portugal, Ireland and Greece.