BBVA Research

Is Europe´s Sovereign Debt crisis over?

IIF - Athens, Greece

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Is country risk in peripheral European countries overvalued?
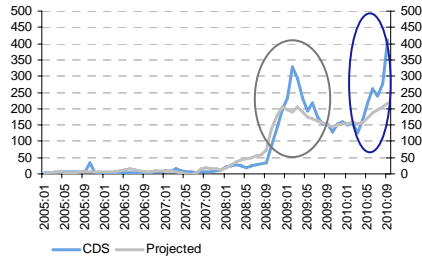
What else are markets pricing in?

What can be expected on the European sovereign crisis going forward?

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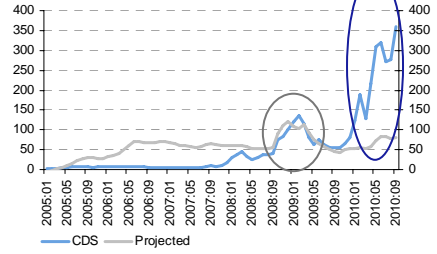## Is country risk in peripheral European countries overvalued ?

Ireland: CDS 5y
Source: BBVA Research
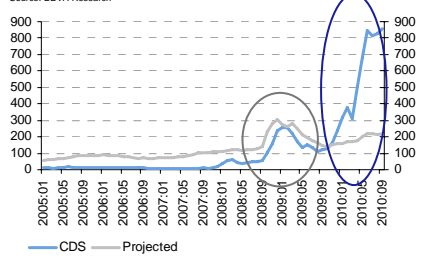
Portugal: CDS 5y
Source: BBVA Research

Greece: CDS 5y
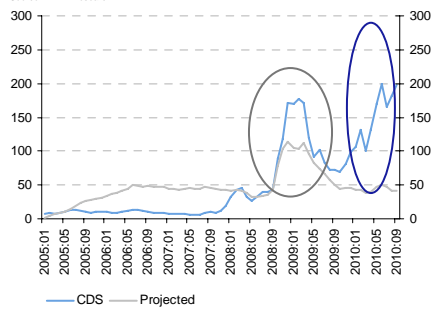Source: BBVA Research

CDS — Projected

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Is country risk in peripheral European countries overvalued ?

Italy: CDS 5y
Source: BBVA Research

Spain: CDS 5y
Source: BBVA Research

CDS — Projected   Current — Projected
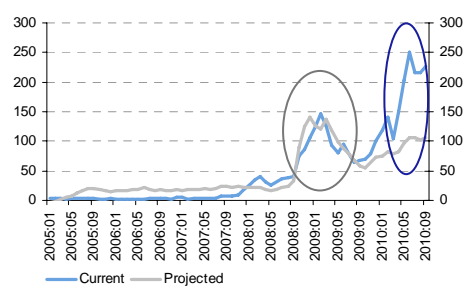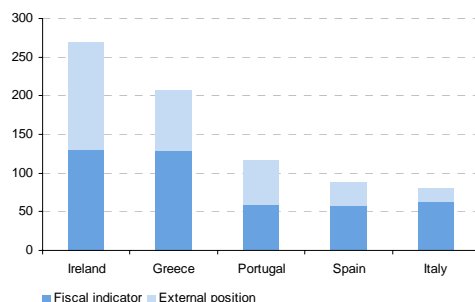
Is country risk in peripheral European countries overvalued ?

European sovereign countries: CDS 5y, fiscal and external determinants
Source: BBVA Research

External and fiscal imbalances are key in explaining CDS levels in our model

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Is country risk in peripheral European countries overvalued ?

- Our standard country risk panel model (39 countries, 6 years) for CDS which basically includes variables on fiscal and external imbalances, together with other macro variables, has worked reasonably well up to now.
- The model includes two components: global risk and idiosyncratic risk
- With such model, in the recent episode of sovereign crisis in Europe an overshooting of risk premia over fundamentals can be identified.

Other variables that could explain this overshooting:

1. Potential growth and growth model in coming years
2. Over-weighting of external vulnerability
3. Banking situation and national bailouts of banking systems (and other large companies)
4. Exchange rate rigidity

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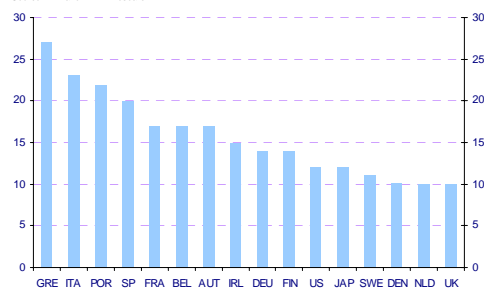
1 Potential growth and growth model in coming years

Need for Structural Reforms in Developed Countries
Source: IMF and BBVA Research

This index is composed of 3 components (medium term, long term, and average, see annex). Each one of these components ranges from 1 to 3.

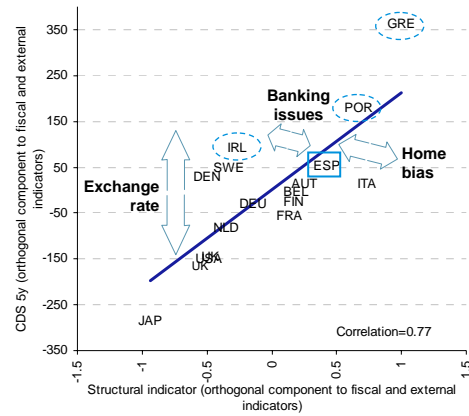1: less need for reforms, 3: greater need for reforms

Therefore the aggregate index ranges from 0 to 30

What else are markets pricing in?

1 Potential growth and growth model in coming years

Structural capacity and country risk
Source: BBVA Research

- Adding a structural growth indicator helps to explain the spread of Portugal and to a large extent Greece
- Ireland remains still an outlier

What else are markets pricing in?

2 Over-weighting of external vulnerability

Markets' Sensitivity to External Variables
Source: BBVA Research
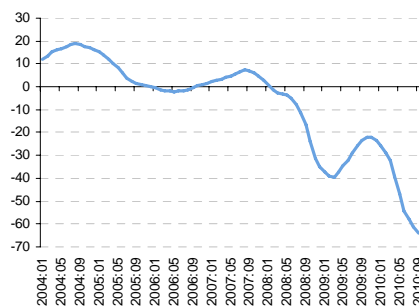
External debt, NFAs and sovereign CDS
Source: BBVA Research

(The size of the circle represents the level of External debt)

In the face of financial markets closure and liquidity problems, external dependency has been over-weighted

What else are markets pricing in?

2 Over-weighting of external vulnerability

Ireland and Spain: 5yr CDS spread to Italy
(5-yr CDS in bps)
Source: Bloomberg and BBVA Research

News on the Irish banking system

S&P downgrades Ireland to Aa-

Split of Anglo Irish Bank
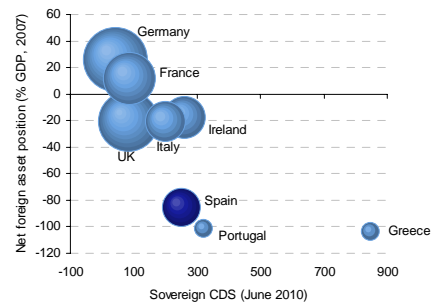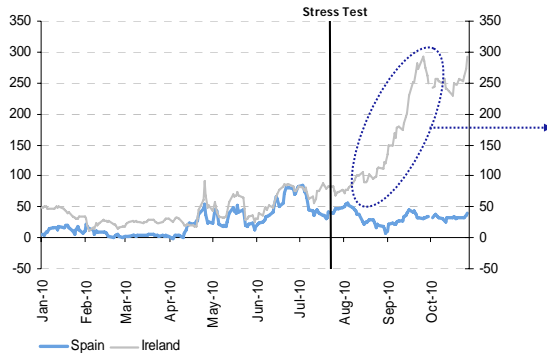
Fitch downgrades Anglo Irish Bank to BBB+

Government announces estimation of the cost of the crisis and the bail-out of Anglo Irish

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What else are markets pricing in ?

3 Banking situation and national bailouts of banking systems (and other large companies)

	Ireland	Spain	
Big size of it's financial system	649%	328%	Assets/PIB
Solvency issues	20%	1.5%	Capital injections/PIB
Stress tests low credibility (I): small coverage	50%	100%	% of guaranteed assets
Stress tests low credibility (II): Estimated fail credits too optimistic	1%	4%	Fail credits, % of assets
Pending liquidity injections after the stress tests	14	2	bn EUR
Liquidity (I): High dependence on the ECB	5.7%	2.6%	% average assets since 2008
Liquidity (II): Big maturities in the short-run	2.2%	1.2%	Maturities to dec. 2010, % of assets

What else are markets pricing in ?

3 Banking situation and national bailouts of banking systems (and other large companies)

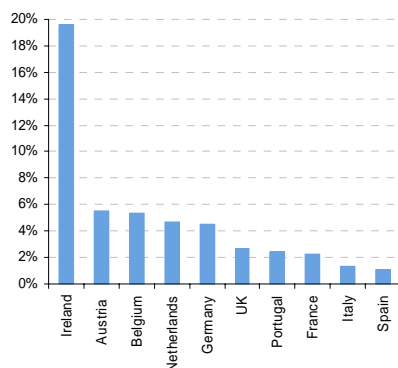**Public Capital Injections** (% GDP)
Source: BBVA Research

Weighted average Tier 1 ratios stressing sovereign exposure (including banking book)
* Six largest institutions
Source: CEBS, supervisory authorities, banks and BBVA Research
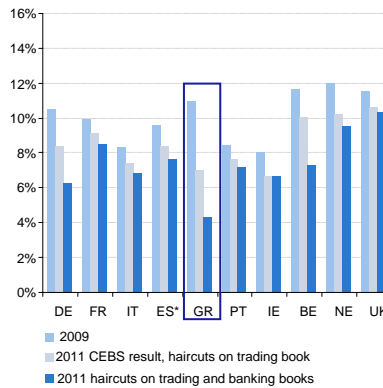
■ 2009
■ 2011 CEBS result, haircuts on trading book
■ 2011 haircuts on trading and banking books

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What can be expected on the European sovereign crisis going forward?

Our View on Determinants of Country Risk

	Market prob. of default 5 years ahead * Oct 2010	Fiscal vulnerability	External vulnerability	Growth weakness	Banking problems	Overall relative to market view
Greece	**69%**	High	High	Medium	Medium	=
Ireland	**51%**	High	Medium	Low	High	=
Portugal	**47%**	Medium	High	High	Medium	—
Spain	**30%**	Medium	High	Medium	Low	=
Italy	**26%**	High	Low	High	Low	—

* Assuming a 70% recovery rate

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| Need for Structural Reforms																	
Medium Term	**DEU**	**FRA**	**NLD**	**BEL**	**ITA**	**SP**	**POR**	**GRE**	**AUT**	**FIN**	**IRL**	**DEN**	**SWE**	**UK**	**US**	**JAP**	**Avg.**
Labour market inefficiency	2	3	2	2	3	3	3	3	2	1	1	1	2	1	1	1	1.9
Business regulations	2	2	1	3	2	3	2	3	2	2	1	1	1	1	1	2	1.8
Network regulations	1	2	1	1	2	1	2	3	1	2	3	1	1	1	1	2	1.6
Retail sector regulation	1	2	1	3	2	2	2	3	3	2	1	2	1	1	2	1	1.8
Profesional services regulations	3	2	1	2	3	2	2	3	2	1	1	1	1	1	1	1	1.7
Long Term																	
Institutions and contracts	1	2	1	2	3	2	3	3	1	1	2	1	2	1	2	2	1.8
Huma capital	2	2	1	1	3	3	3	3	2	1	1	1	1	2	2	1	1.8
Infraestructure	1	1	1	2	3	1	2	3	2	2	3	1	1	1	1	1	1.6
Innovation	1	1	1	1	2	3	3	3	2	2	2	1	1	1	1	1	1.6
Average	1.6	1.9	1.1	1.9	2.6	2.2	2.4	3.0	1.9	1.6	1.7	1.1	1.2	1.1	1.3	1.3	1.7
Total	14	17	10	17	23	20	22	27	17	14	15	10	11	10	12	12	

Source: IMF and BBVA Research

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Fiscal vulnerability

Europe: Fiscal deficit and debt forecast (% GDP)

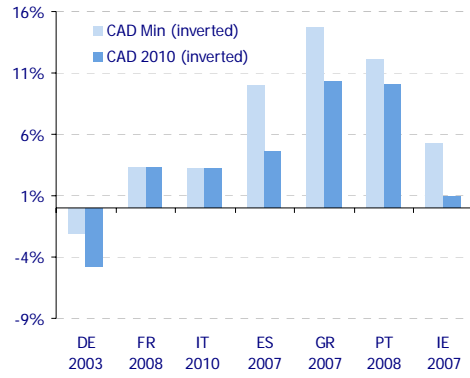Source: National governments. Data refered to Maastricht´s definition

Including NAMA

Public debt l(left)   Public deficit (right)
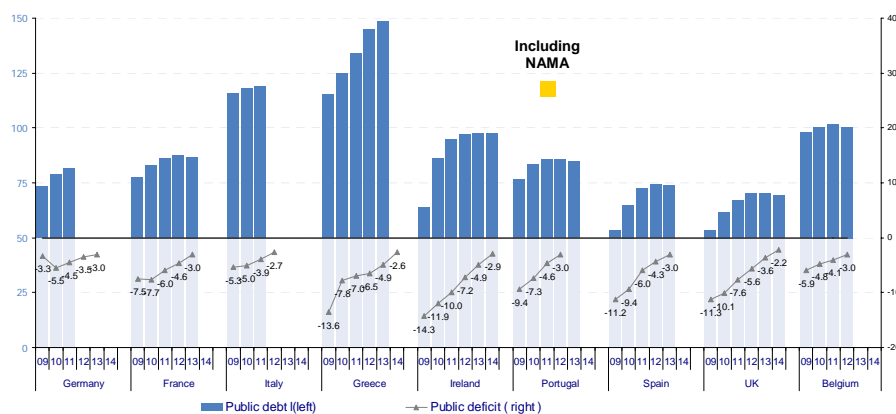
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External vulnerability

Current account deficit (% GDP)
Source: AMECO and BBVA Research

- CAD Min (inverted)
- CAD 2010 (inverted)

| | DE 2003 | FR 2008 | IT 2010 | ES 2007 | GR 2007 | PT 2008 | IE 2007 |

Annex

Growth weakness

GDP Growth forecasts
Source: BBVA Research

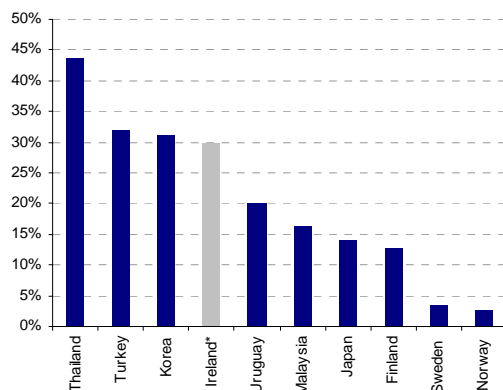| DEU | FRA | ITA | SPA | PRT | GRC | IRL | BEL | GBR |
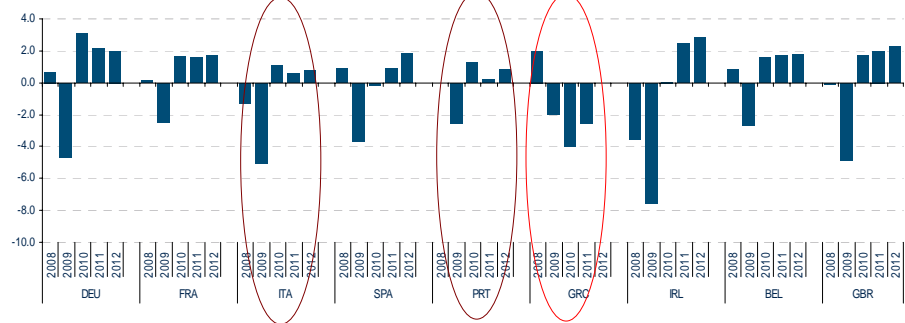
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Banking problems

Gross Fiscal Cost of Latest Crises (% GDP)
* Recapitalisation cost
Source: IMF and BBVA Research

Annex: Model country risk

1) General Description

- The model allows assessing structural sovereign risk of any country included in the sample and it also allows estimating idiosyncratic risk from any other country, whether it is or not in the sample

- It allows disaggregating the estimated risk in two independent components:

  - Global Risk: associated to common factors that affect simultaneously many different countries, but allowing a differential impact on each country

  - Idiosyncratic Risk: The part of risk associated to specific country factors

2) Methodology

- The dependent variable used to proxy for a given country Sovereign Risk is the monthly average of the Credit Default Swaps (CDS)

- The methodology combines three different statistical methodologies in three sequential steps. 1) We construct two compound indexes that summarize the information coming from different idiosyncratic variables that are highly correlated among them. 2) We estimate a State-Space model in order to separate the observed CDS of a given country into two different components: a global risk component and an idiosyncratic risk component. 3) We use the output of the State-Space model to re-estimate the contributions of the idiosyncratic variables to the total observed country risk, through a Tobit-Panel model

Annex: Model country risk

3) Variables and Estimated Equation

- The variables that define the idiosyncratic component are:

  – The GDP growth rate

  – The inflation rate: Widely used in the literature as a proxy for macro stability

  – Rule of Law de Kaufman: A commonly accepted measure of governance. It's an indicator that summarizes institutional and political stability

  – Fiscal Position Indicator: fiscal balance and public debt

  – External Position Indicator: current account and external debt

- The final estimated equation is:

$$Country\ Risk_{i,t} = Global\ Risk(Estimated)_t \cdot Lambda_i + \beta 1\ X_{1,i,t} + \ldots + \beta r\ X_{1,i,t} + \delta_i + \upsilon_{i,t}$$

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