BBVA | RESEARCH

Country Risk Quarterly Report

BBVA Research

Cross-Country Emerging Markets Unit

December 2012

Summary

Financial Markets & Global Risk Aversion

- **The Western Central Banks "actions" drove financial tensions back to normal in both US and European Markets**. Emerging Markets among the most benefited by Central Bank actions. **Some Emerging Markets (EM) enters in the low tension area**
- **Capital Flows continued to improve** from the sharp drop in Q2, particularly in Emerging Markets

Sovereign Markets & Ratings Update

- **Sovereign markets continued to benefit from the Big Central Banks moves in September**. **Spain and Italy leading the correction** but risk premiums still high
- **The rating agencies convergence play continued** with Emerging Markets upgrades overcoming some minor downgrades adjustments in the EU Periphery. Some EM entering in the investment grade area (Turkey)
- **Sovereign rating downgrade pressures (from implicit CD Swaps quotes) are still alive in EU and some Emerging Europe countries**. **Latam moves to the "upgrade" area while Asia remains neutral**

Our own country risk assessment

- **The Big Centrals Banks "Push" eased financial tensions (including sovereign) contributing to relax the Ratings Downgrade Cycle**
- **Despite the adjustments (de-leveraging, external and fiscal) important vulnerabilities remain in the Developed Countries**. The combination of problems in the stock variables (still high Public and Private debt) combined with liquidity constraints makes them vulnerable to sudden changes in investor sentiment
- **The Emerging Markets have benefited from the "push" factors reinforced by solid fundamentals**. **Emerging Europe** continue with its adjustment but **remains the most vulnerable region**. **Latam and Asia continue to be the less risky areas, with the potential for further ratings upgrades in some of the big countries** (México and Turkey). However, **there are some warning signals to monitor**. Credit and housing prices are starting to accelerate and our CD Swaps equilibrium models show that some emerging markets are now near or below equilibrium posing some risk for correction.

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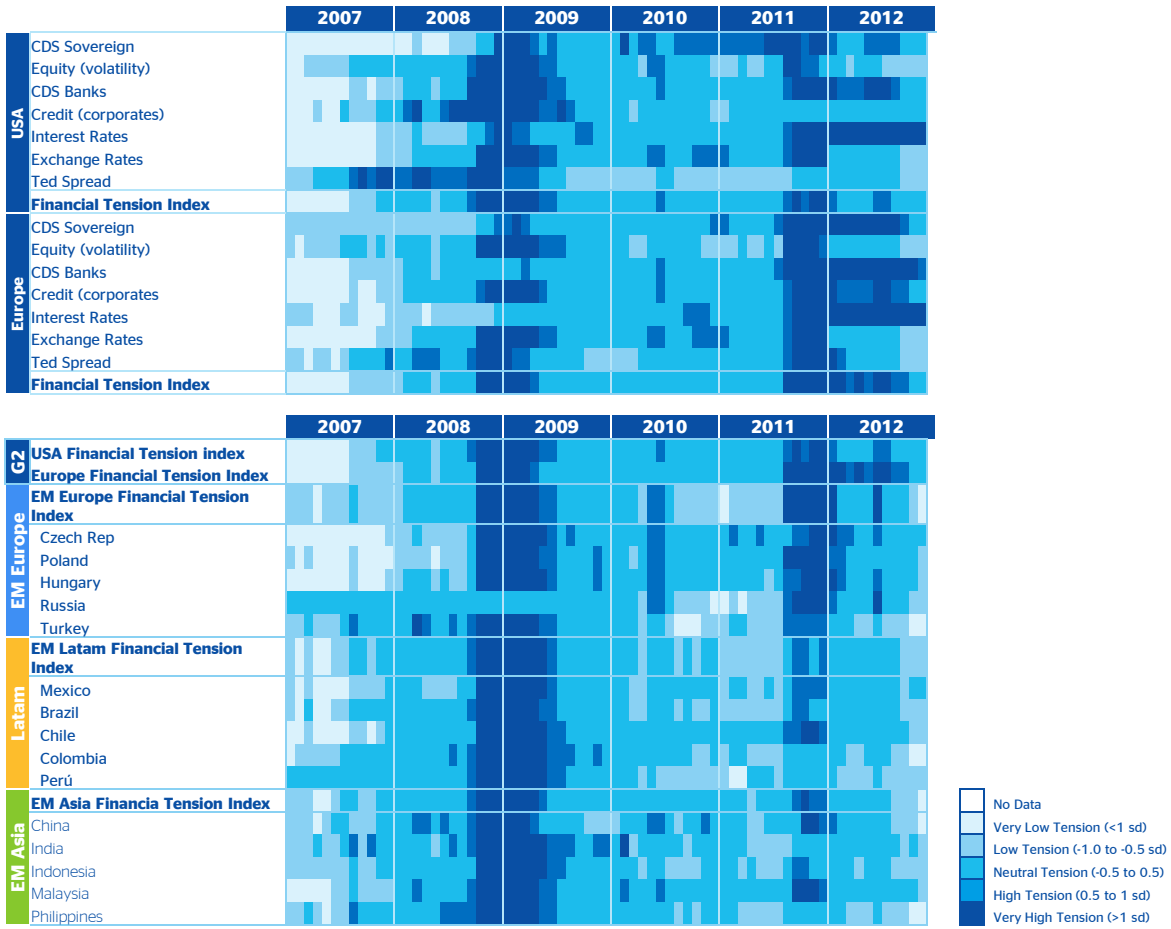
Section 1

Financial Markets Stress

BBVA Research Financial Stress Map

Source: BBVA



- The Western Central Banks "Put" drives financial tensions back to normal in both US and European Markets. But some segments still "under pressure" (banks and interest rates).

- Emerging Markets among the most benefited markets during the quarter. The Central Banks actions leads EM Europe below the neutral area thanks to the diminishing Euro convertibility risk. Asian and to a lesser extent Latam financial pressure enter also in the very low tension area.

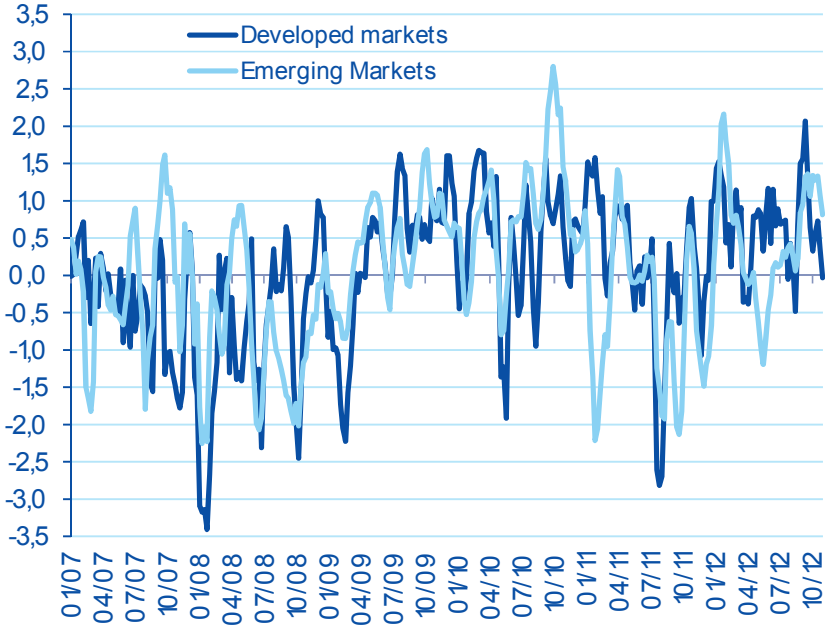
Section 1

Capital Flows Update

Equity & Bond Fund Flows 2007-2012

(country basis; standardized units of 4wMA over the 2007-2012 period)

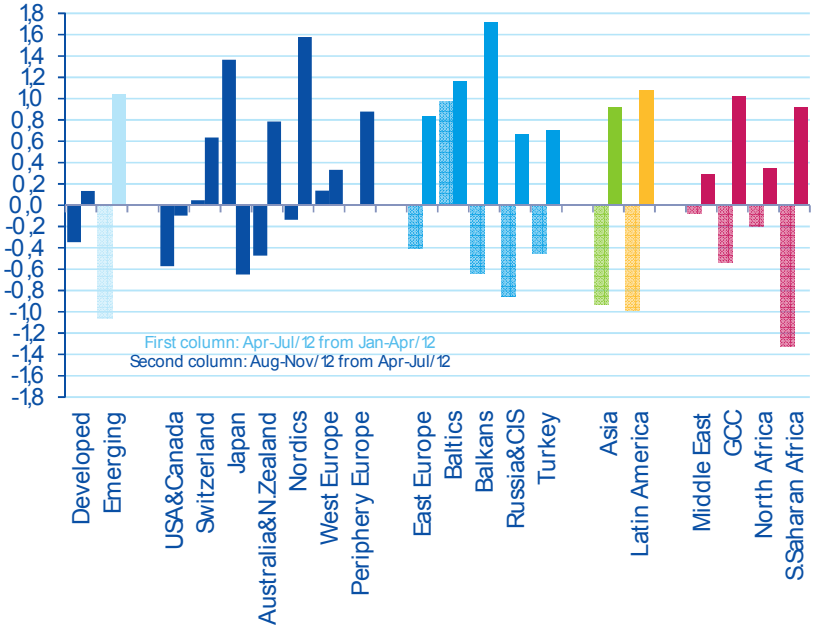
Source: EPFR and BBVA Research



Equity & Bond Fund Flows2012

(change of averages between periods; standardized units over the 2007-2012 period)

Source: EPFR and BBVA Research



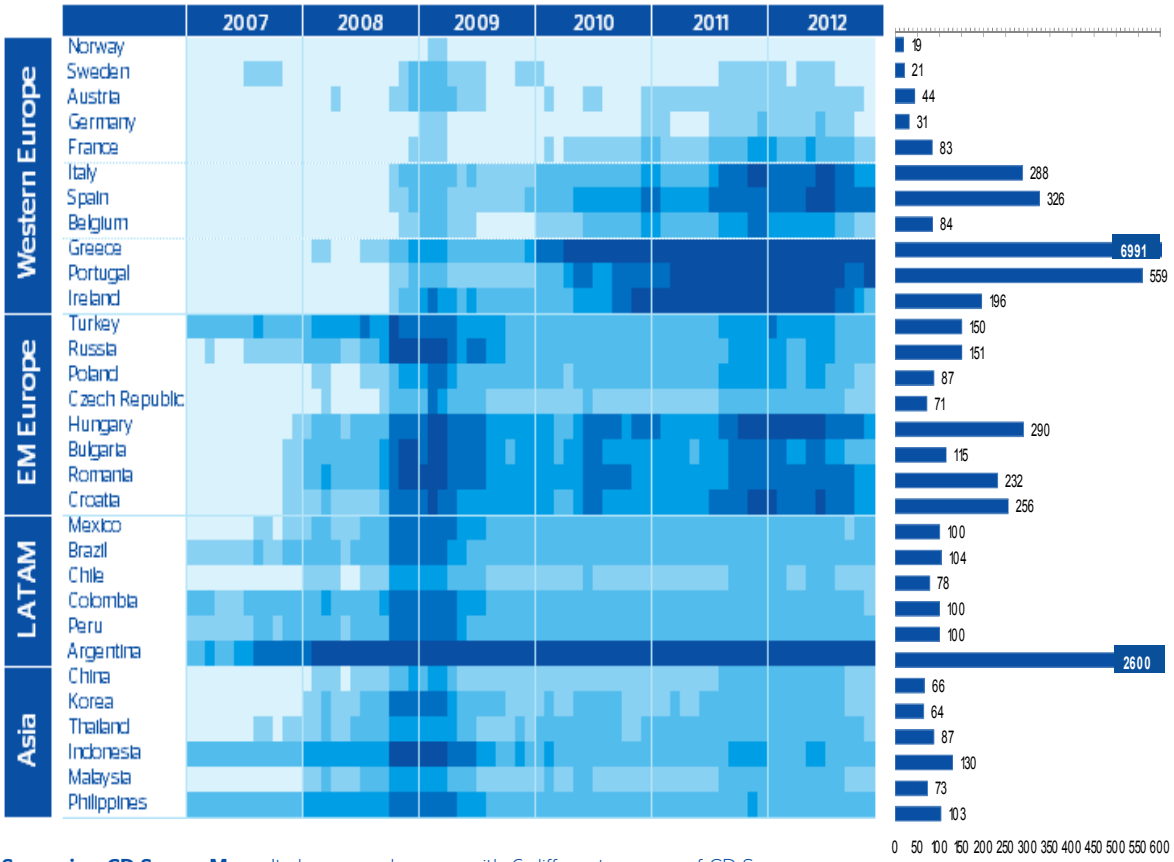
- **Bold actions by the ECB and the Federal Reserve have boosted risk appetite since August and a new wave of flows has gone into emerging economies and commodity exporters,** offsetting negative sentiment in Q2.
- **Among EMs, Latin America, Asia and Russia have inverted large outflows into significant inflows,** while improvement has been remarkable as well for Eastern Europe, Turkey and GCC countries. Social and political unrest limited gains for the MENA region.

Section 2

Sovereign Markets Update

Sovereign CDS spreads

Source: Datastream and BBVA Research



November 2012

End of Month

Sovereign CD Swaps Map: It shows a color map with 6 different ranges of CD Swaps quotes (darker >500, 300 to 500, 200 to 300, 100 to 200, 50 to 100 and the lighter below 50 bp)

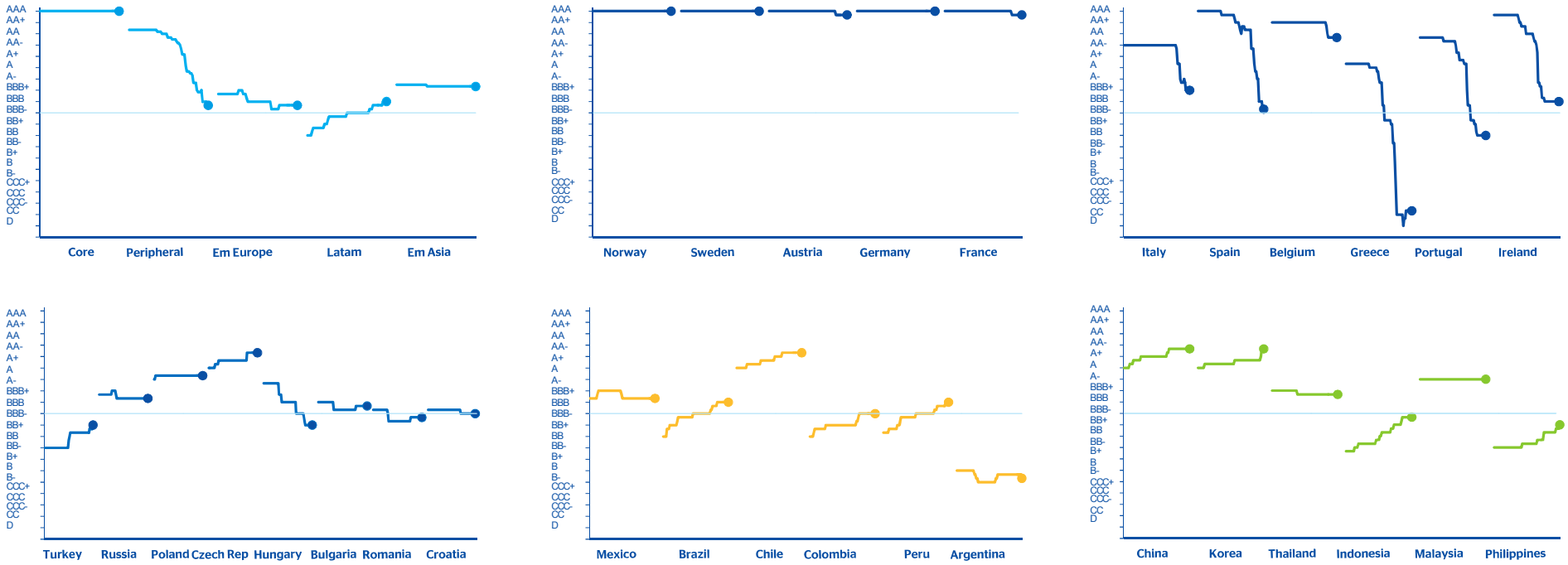
- Europe's CD Swap spreads continued to tighten supported by Central Bank Stimulus and measured announced in September.
- Eastern Europe sovereign CD Swaps among the most benefited by Western Europe improvement.. Turkey´s supported by Fitch upgrade.
- Latin America sovereign CD Swaps remained at relatively safe levels and decreasing. Argentina´s decision triggered a significant CD Swap increase.
- Asian sovereigns continued to tighten remaining also in the below 100 bp area.

Section 2

Sovereign Credit Ratings Update

Sovereign Rating Index 2007-2012

Source: BBVA Research by using S&P, Moodys and Fitch Data



Sovereign Rating Index: An index that translates the three important rating agencies ratings letters codes (Moody´s, Standard & Poor´s and Fitch) to numerical positions from 20 (AAA) to default (0) . The index shows the average of the three rescaled numerical ratings.

- **Developed Economies: The Rating Agencies downgrade cycle moderated somehow with some but not generalized new downgrades**. Spain experienced a new downgrade (S&P) and France lost the AAA (Moody´s)
- The **Emerging markets experienced mixed results.** There were some new upgrades (Turkey and Philippines) while Hungary and Argentina were downgraded

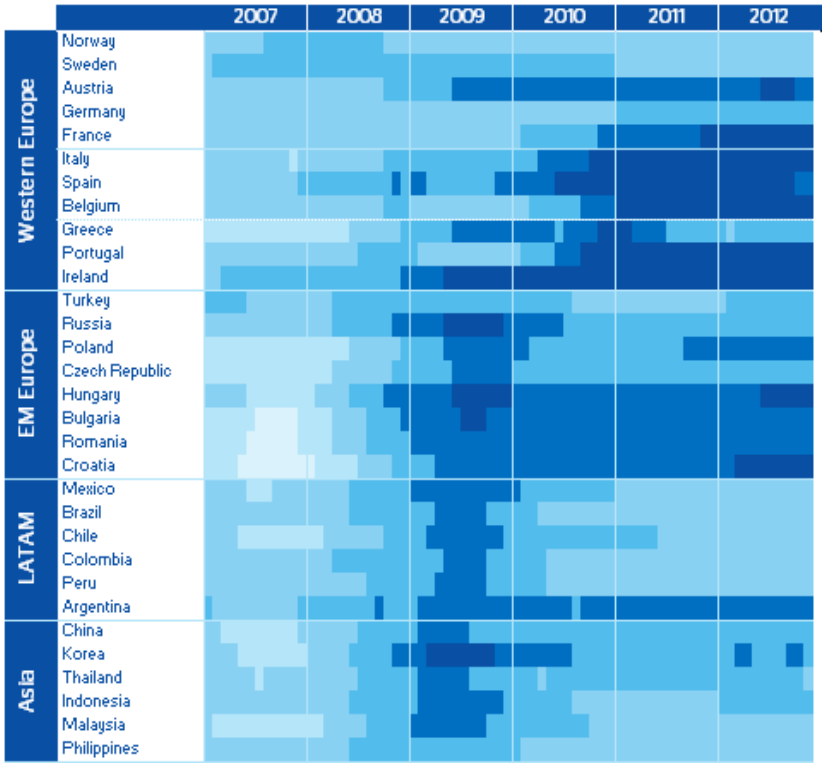
Section 2

Sovereign downgrade Pressures Map

Rating Agencies Downgrade Pressure Map

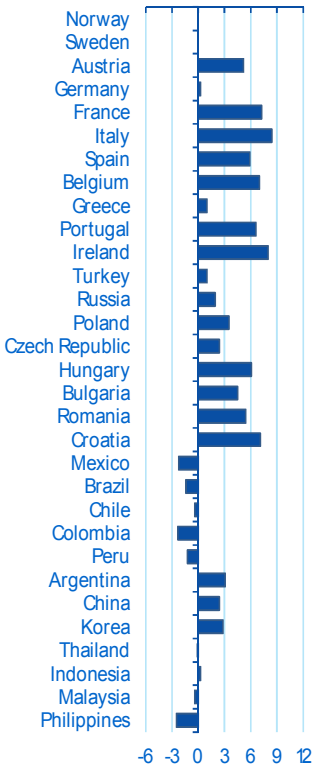
(actual minus CDS-implied sovereign rating, in notches)

Source: BBVA Research



November 2012

Updated 28th November



- Implicit ratings by CD Swaps still signalling potential downgrade pressure in some European Countries. France and the rest of the EU periphery still quoting potential downgrades.
- In Eastern Europe Hungary, Bulgaria, Romania and Croatia shows medium pressure.
- Latin America sovereign CD Swaps start to signal some "Upgrade" pressures (Colombia & México)
- Asia in neutral. Philippines enter in the upgrade pressure.

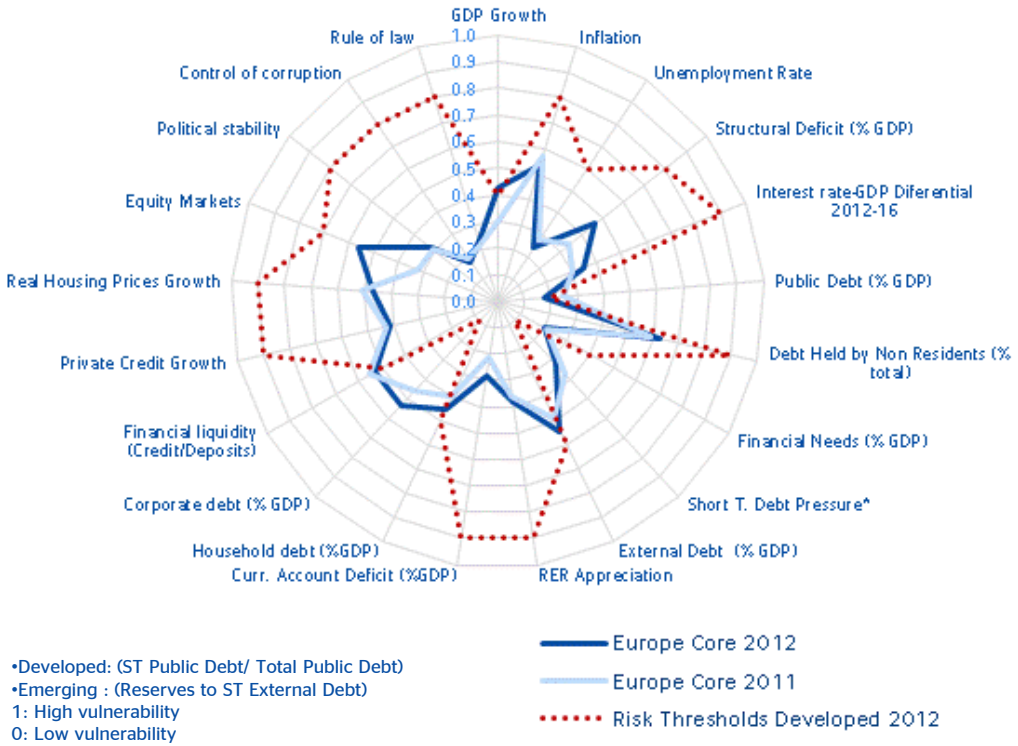
Downgrade Pressure Map: The map shows the difference of the current ratings index (numerically scaled from default (0) to AAA (20)) and the implicit ratings according to the Credit Default Swaps. We calculate implicit probabilities of default (PDs) from the observed CDS and the estimated equilibrium spread. For the computation of these PDs we follow a standard methodology as the described in Chan-Lau (2006) and we assume a constant Loss Given Default of 0.6 (Recovery Rate equal to 0.4) for all the countries in the sample. We use the resulting PDs in a cluster analysis to classify each country at every point in time in one of 20 different categories (ratings) to emulate the same 20 categories used by the Rating Agencies.

Section 3

Regional Risk Update: Core Europe

Europe Core Countries: Vulnerability Radar 2012

(all data for 2012, Relative position for the Emerging Developed countries. Max Risk=1, Min Risk=0)
*Include Austria, Belgium, France, Germany, Denmark, Norway and Sweden
Source: BBVA Research



•Developed: (ST Public Debt/ Total Public Debt)
•Emerging : (Reserves to ST External Debt)
1: High vulnerability
0: Low vulnerability

De-leveraging is diminishing risks from Excess credit and housing prices. Institutional factors remains an asset

Worsening Economic Growth perspectives

Public and Private Debt levels near the risk thresholds in some countries with the potential to trigger some problems

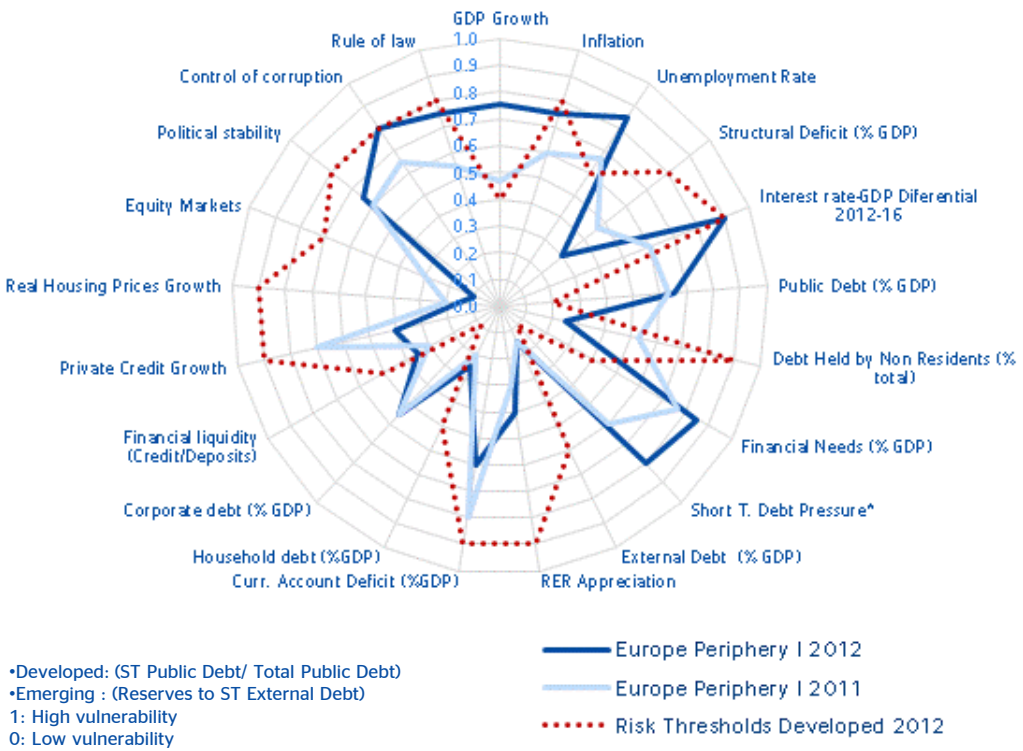
Vulnerability Radar: Shows a static and comparative vulnerability for different countries. For this we assigned several solvency , liquidity and macro variables and we reorder in percentiles from 0 (lower ratio among the countries to 1 maximum vulnerabilities.) Furthermore Inner positions in the radar shows lower vulnerability meanwhile outer positions stands for higher vulnerability.

Section 3

Regional Risk Update: Western Europe

Europe Periphery I: Vulnerability Radar 2012

(all data for 2012, Relative position for the Developed Market countries. Max Risk=1, Min Risk=0)
*Include Spain and Italy
Source: BBVA Research



•Developed: (ST Public Debt/ Total Public Debt)
•Emerging : (Reserves to ST External Debt)
1: High vulnerability
0: Low vulnerability

✓ Structural Budgets improve
Housing & Credit excesses cleaning up
External adjustment on their way

? Some worsening in institutional factors

✗ Activity and employment worsens
Liquidity problems still alive
Still high public and private debt

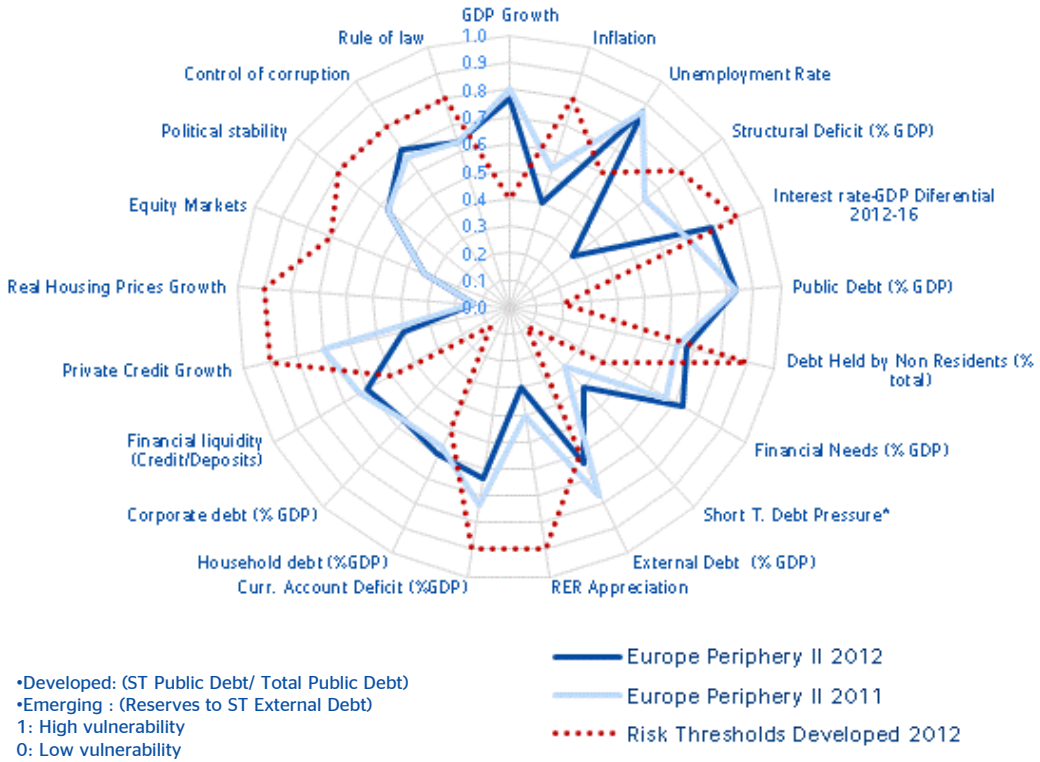
Vulnerability Radar: Shows a static and comparative vulnerability for different countries. For this we assigned several solvency , liquidity and macro variables and we reorder in percentiles from 0 (lower ratio among the countries to 1 maximum vulnerabilities.) Furthermore Inner positions in the radar shows lower vulnerability meanwhile outer positions stands for higher vulnerability.

Section 3

Regional Risk Update: Western Europe

Europe Periphery II: Vulnerability Radar 2012

(all data for 2012, Relative position for the Developed Market countries. Max Risk=1, Min Risk=0)
*Include Greece, Ireland and Portugal
Source: BBVA Research



•Developed: (ST Public Debt/ Total Public Debt)
•Emerging : (Reserves to ST External Debt)
1: High vulnerability
0: Low vulnerability

Structural Budgets improve
Housing & Credit excesses cleaning up
Strong real exchange rate adjustment

External improvement continues but
Current account and external debt still high

Very high levels of public debt
Under Assistance (liquidity problems)
Still high public and private debt and Banks funding gaps

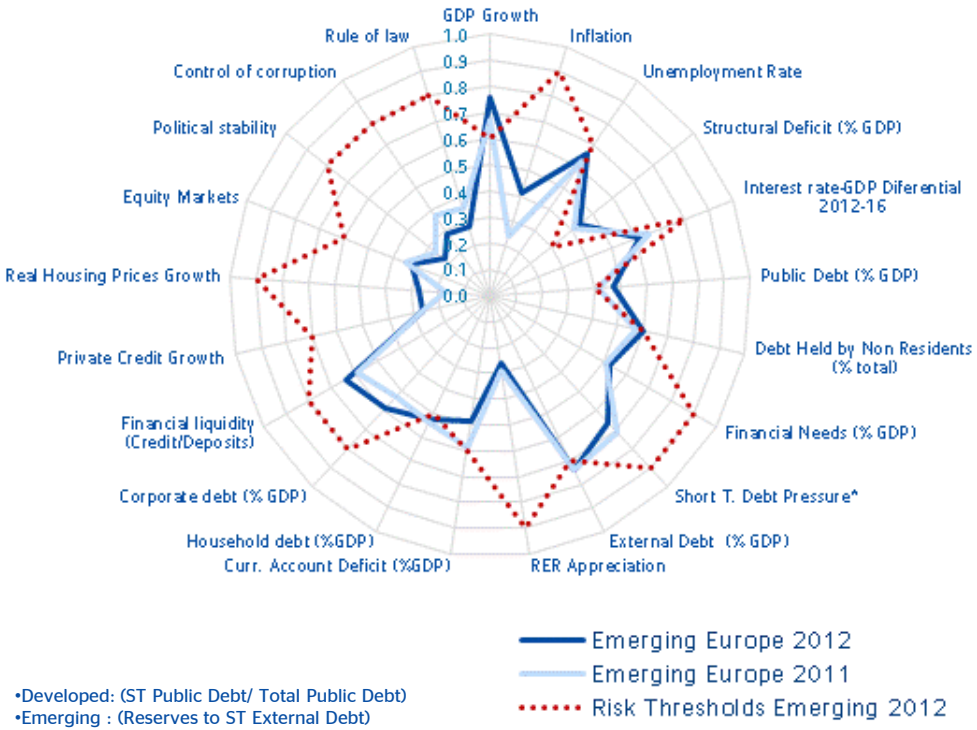
Vulnerability Radar: Shows a static and comparative vulnerability for different countries. For this we assigned several solvency , liquidity and macro variables and we reorder in percentiles from 0 (lower ratio among the countries to 1 maximum vulnerabilities.) Furthermore Inner positions in the radar shows lower vulnerability meanwhile outer positions stands for higher vulnerability.

Section 3

Regional Risk Update: Emerging Europe

Emerging Europe: Vulnerability Radar 2012

(all data for 2012, Relative position for the Emerging Market countries. Max Risk=1, Min Risk=0)
Source: BBVA Research



•Developed: (ST Public Debt/ Total Public Debt)
•Emerging : (Reserves to ST External Debt)
1: High vulnerability
0: Low vulnerability

Institutional low risk readings relative to EM markets
Rapid de-leveraging and real exchange rate adjustment

Activity and employment still weak
Extenal Debt near Risk Thresholds

Fiscal remains near risk thresholds
High Private debt levels

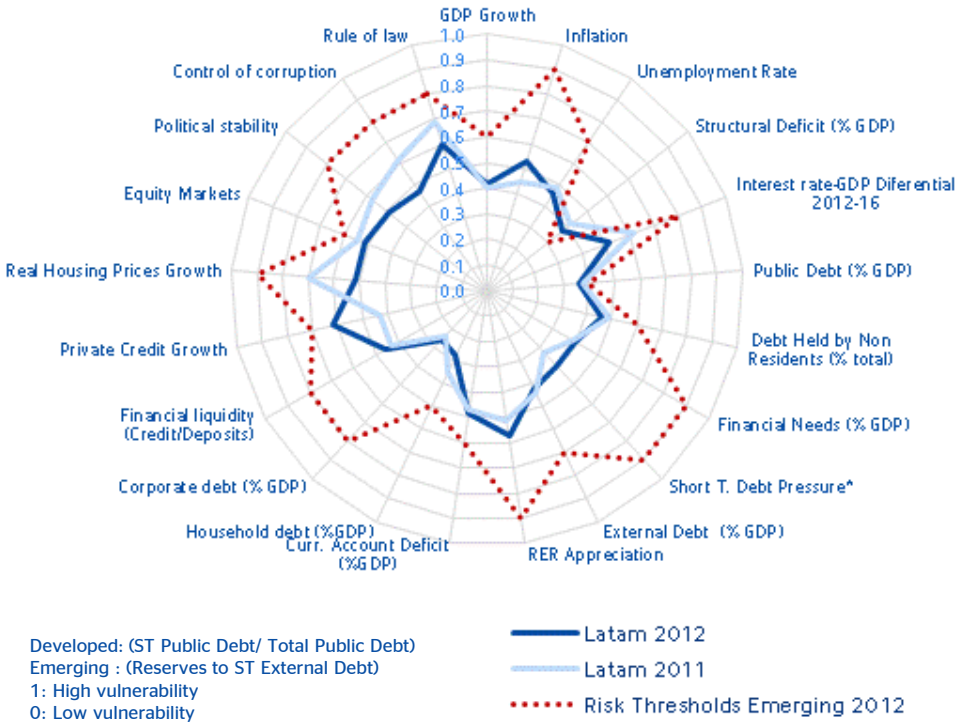
Vulnerability Radar: Shows a static and comparative vulnerability for different countries. For this we assigned several solvency , liquidity and macro variables and we reorder in percentiles from 0 (lower ratio among the countries to 1 maximum vulnerabilities.) Furthermore Inner positions in the radar shows lower vulnerability meanwhile outer positions stands for higher vulnerability.

Section 3

Regional Risk Update: Latam

Latam: Vulnerability Radar 2012

(all data for 2012, Relative position for the Emerging Market countries. Max Risk=1, Min Risk=0)
Source: BBVA Research



Developed: (ST Public Debt/ Total Public Debt)
Emerging : (Reserves to ST External Debt)
1: High vulnerability
0: Low vulnerability

Solid Macro indicators & ample Liquidity buffers. Low Private debt and improving Institutionals

Excess Credit and Housing Prices need to be monitored

Structural fiscal balances should improve as some public debt levels near the EM threshold risks

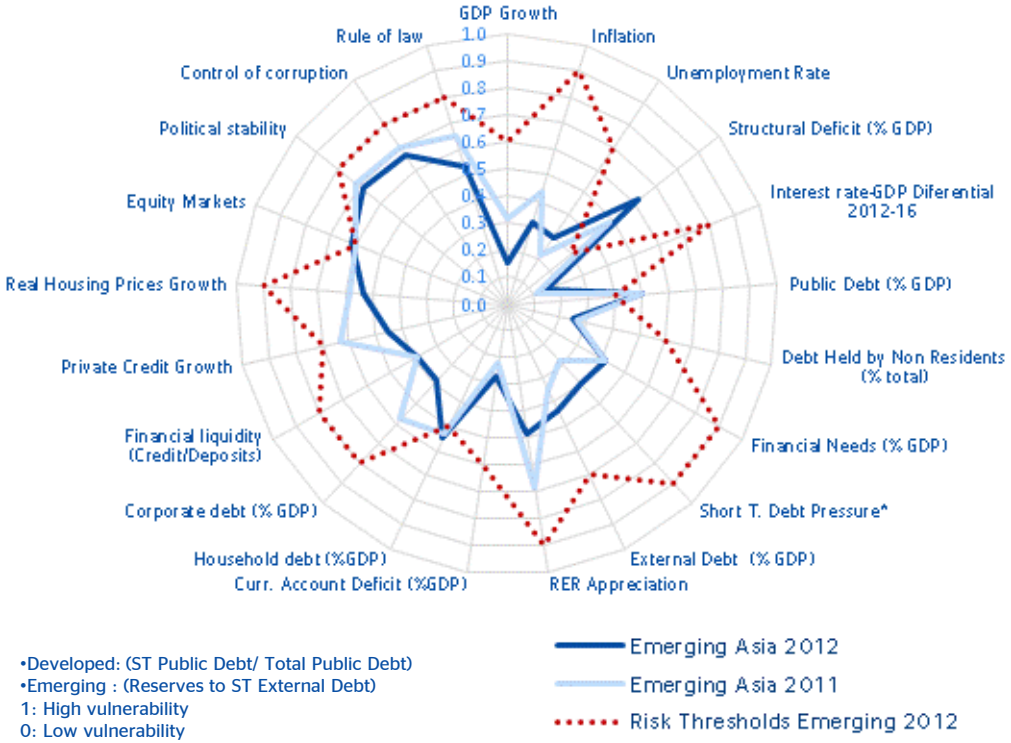
Vulnerability Radar: Shows a static and comparative vulnerability for different countries. For this we assigned several solvency , liquidity and macro variables and we reorder in percentiles from 0 (lower ratio among the countries to 1 maximum vulnerabilities.) Furthermore Inner positions in the radar shows lower vulnerability meanwhile outer positions stands for higher vulnerability.

Section 3

Regional Risk Update: Asia

Emerging Asia: Vulnerability Radar 2012

(all data for 2012, Relative position for the Emerging Market countries. Max Risk=1, Min Risk=0)
Source: BBVA Research



•Developed: (ST Public Debt/ Total Public Debt)
•Emerging : (Reserves to ST External Debt)
1: High vulnerability
0: Low vulnerability

Solid Macro indicators & ample Liquidity buffers. Strong external positions
Credit growth moderates

Some improvements in institutional indicators

Structural fiscal balances above risk thresholds. Household Debt still high for EM standards

Vulnerability Radar: Shows a static and comparative vulnerability for different countries. For this we assigned several solvency , liquidity and macro variables and we reorder in percentiles from 0 (lower ratio among the countries to 1 maximum vulnerabilities.) Furthermore Inner positions in the radar shows lower vulnerability meanwhile outer positions stands for higher vulnerability.

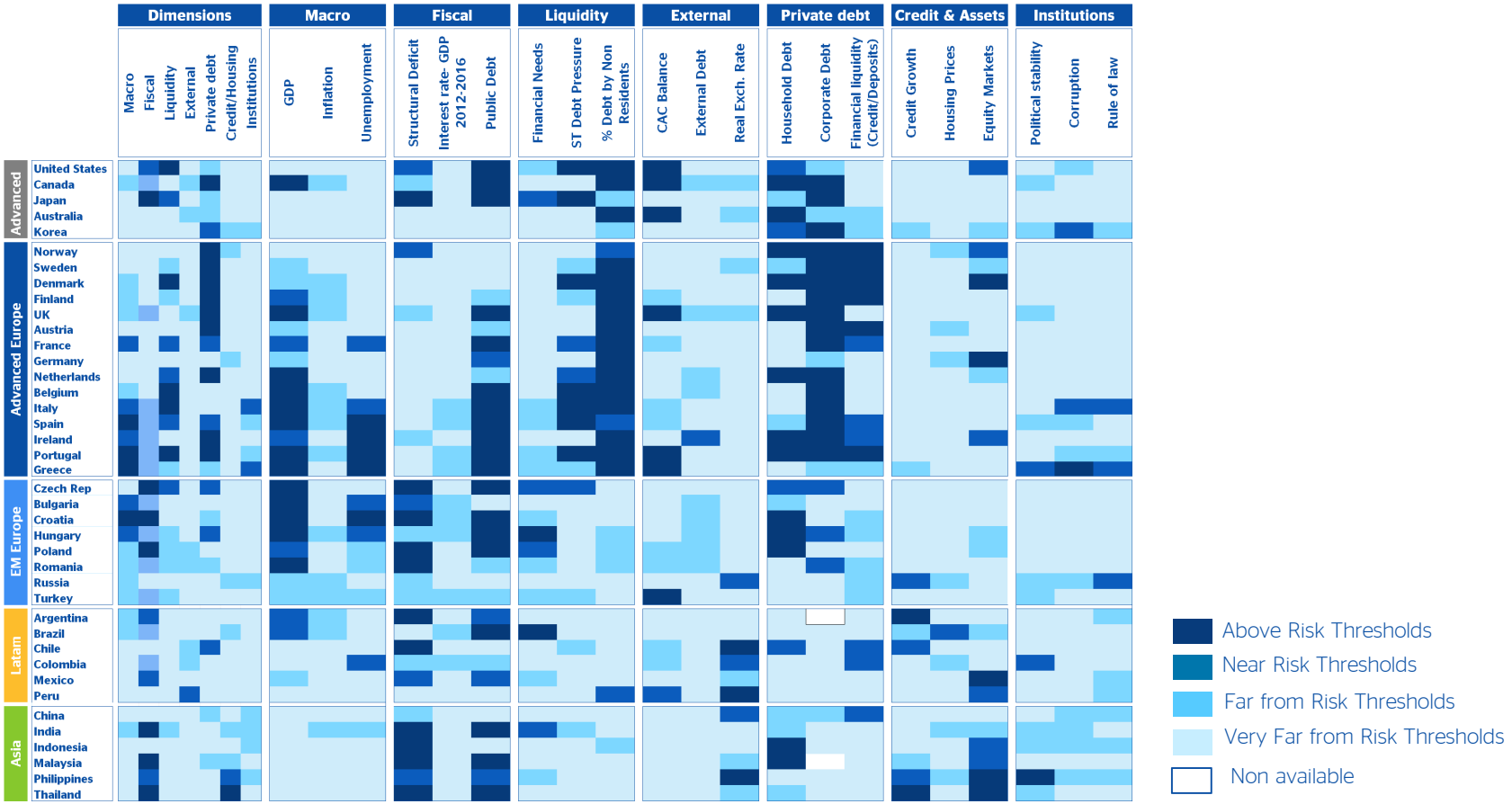
Section 3

Regional Risk Update: World Risk Map

Distance to Risk Map

(Darker colours stands for indicators above risk thresholds lighter for safe or high distance to risk thresholds)

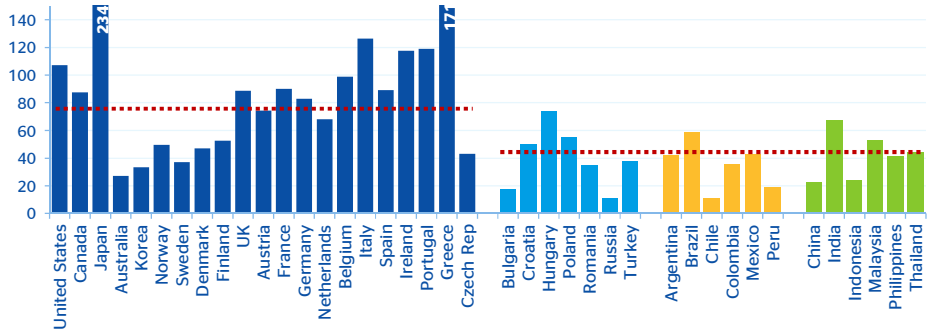
Source: BBVA Research



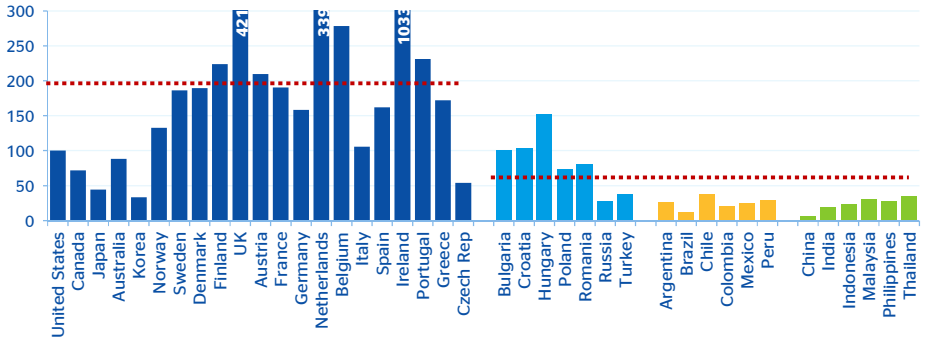
Section 3

Public and Private Debt Chart Gallery

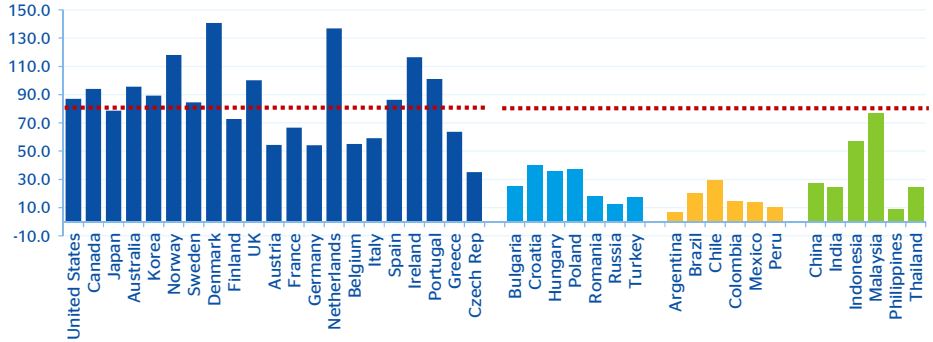
Gross Public Debt 2012
(% GDP)
Source: BBVA Research and IMF



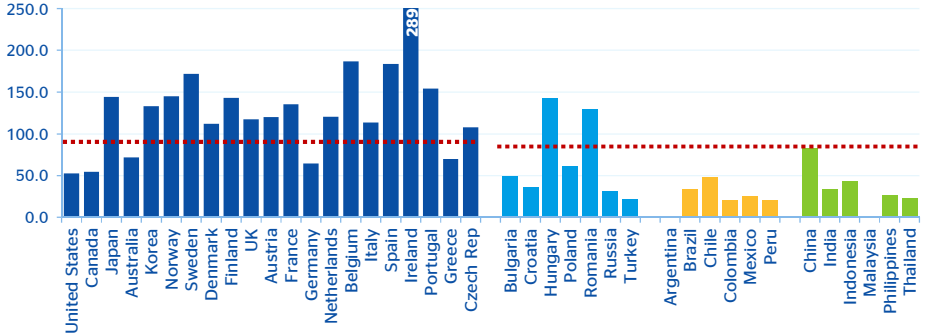
External Debt 2012
(% GDP)
Source: BBVA Research and IMF



Household Debt 2012
(% GDP)
Source: BBVA Research and BIS



Corporate Sector Debt 2012
(% GDP)
Source: BBVA Research and BIS



Risk Thresholds

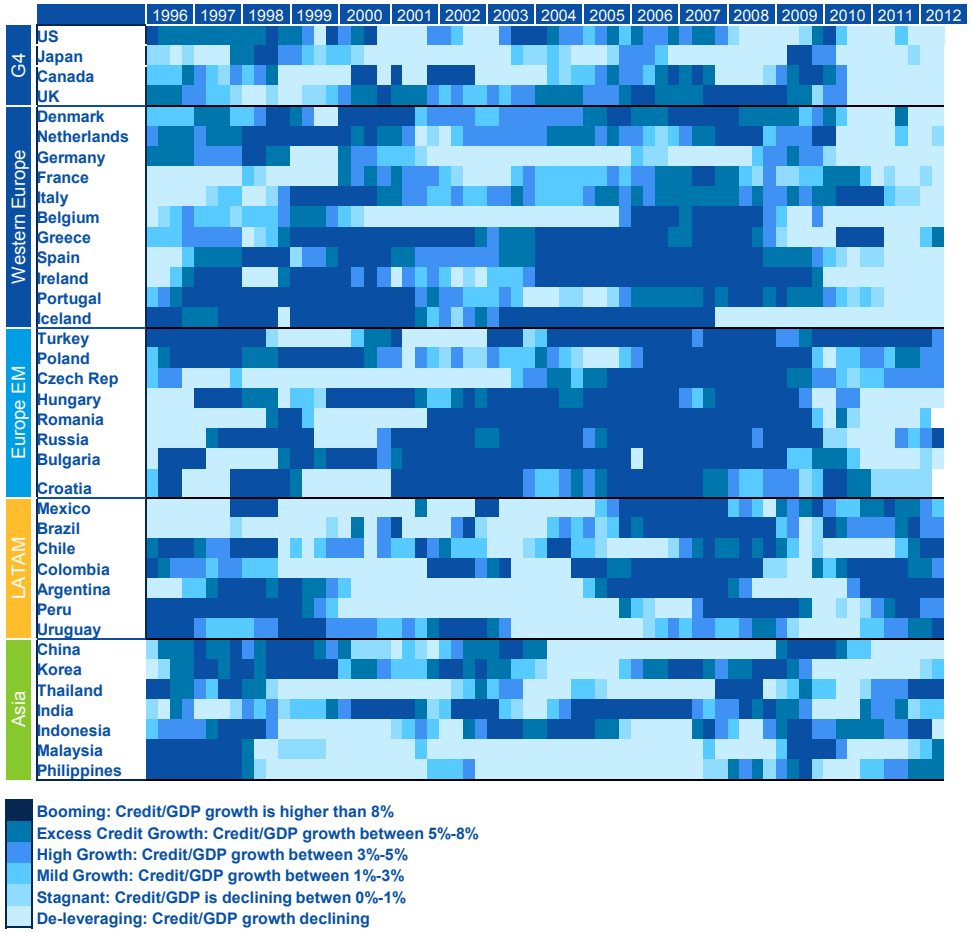
Section 3

Private Credit Pulse

Private credit colour map (1996-2012 Q2)

(yearly change of private credit-to-GDP ratio)

Source: BBVA Research and Haver



- Advanced economies private sector credit growth continue to correct.
- In Eastern Europe Turkey´s credit start to moderates after two years booming. First signs of acceleration in Russia.
- Latam credit to private sector continued to be robust with some booming signs in some countries.
- Mixed signals from Asian credit growth. China's maintain the adjustment while some signs of acceleration appeared in Philippines and Thailand.

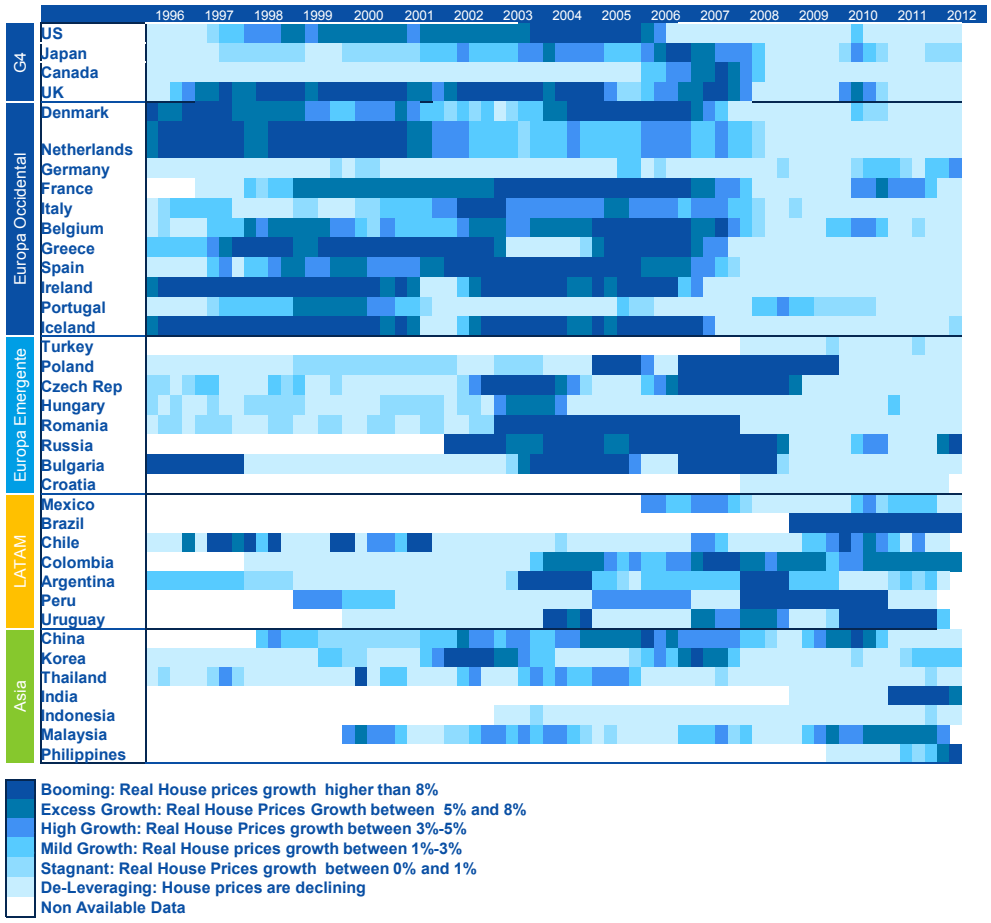
Section 3

Real Housing Prices Pulse

Real Housing prices colour map (1996-2011)

(yearly change of real housing prices)

Source: BBVA Research, BIS and Globalpropertyguide

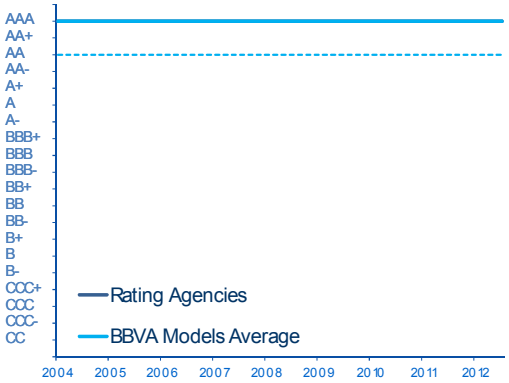


- Most of the Advanced Real State Markets still de-leveraging with some signs of recovery in Germany and Japan. French incipient recovery cooled off.
- In Eastern Europe Turkey moderates real housing prices growth while some pick up appeared in Russia.
- In Latam, Brazil leads the overheating followed somehow by Colombia. México, Peru and Uruguay moderates.
- Asian Real State prices diverge. Some overheating signs in India with Malaysia moderating. China´s real house prices stabilises after months of correction.

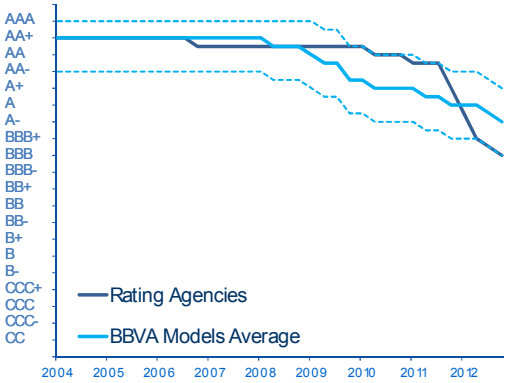
Section 3

Regional Risk Update: Western Europe

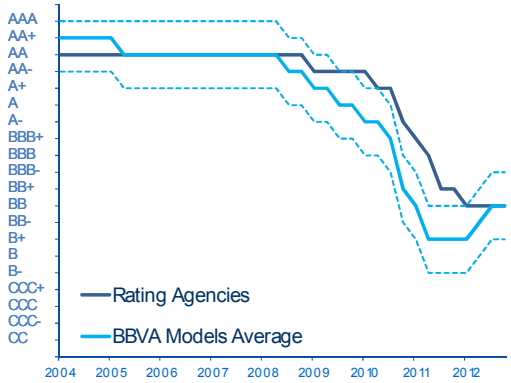
Europe Core: Sovereign Rating
(Rating agencies and BBVA scores +-1std dev)
Source: Standard & Poors, Moody´s, Fitch and BBVA Research



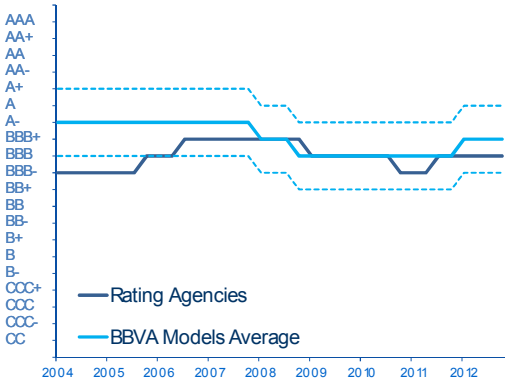
Europe Periphery I: Sovereign Rating
(Rating agencies and BBVA scores +-1 std dev)
Source: Standard & Poors, Moody´s, Fitch and BBVA Research



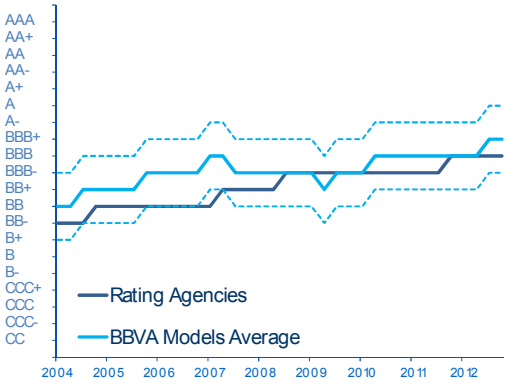
Europe Periphery II: Sovereign Rating
(Rating agencies and BBVA scores +.1 std dev)
Source: Standard & Poors, Moody´s, Fitch and BBVA Research



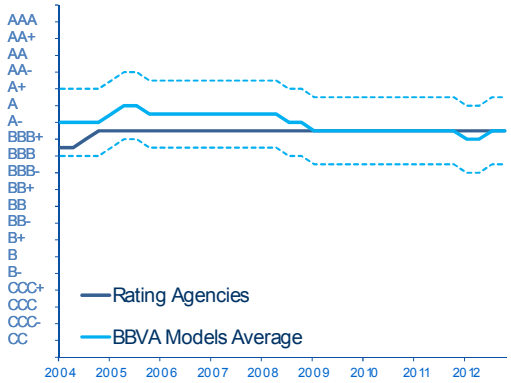
EM Europe: Sovereign Rating
(Rating agencies and BBVA scores)
Source: Standard & Poors, Moody´s, Fitch and BBVA Research



Latam: Sovereign Rating
(Rating agencies and BBVA scores)
Source: Standard & Poors, Moody´s, Fitch and BBVA Research



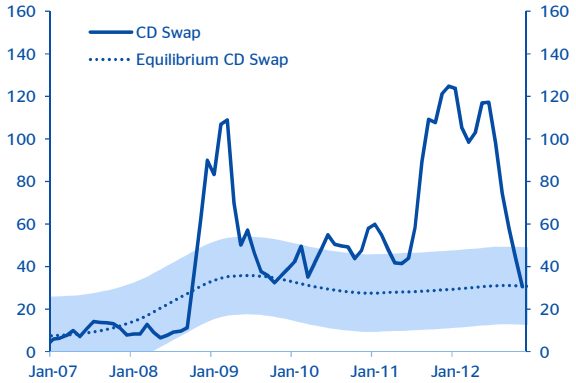
Emerging Asia: Sovereign Rating
(Rating agencies and BBVA scores)
Source: Standard & Poors, Moody´s, Fitch and BBVA Research



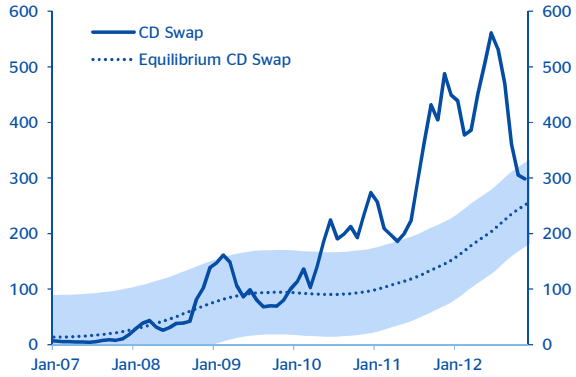
Section 3

Regional Risk: CD Swaps Update

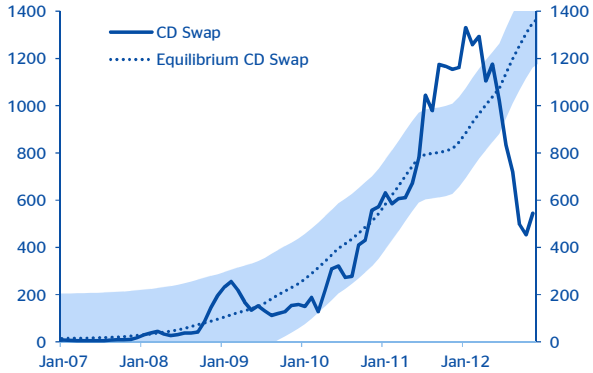
Europe Core: CD Swap 5 year
(equilibrium: average of 4 alternative models + 0.5 Standard deviation)



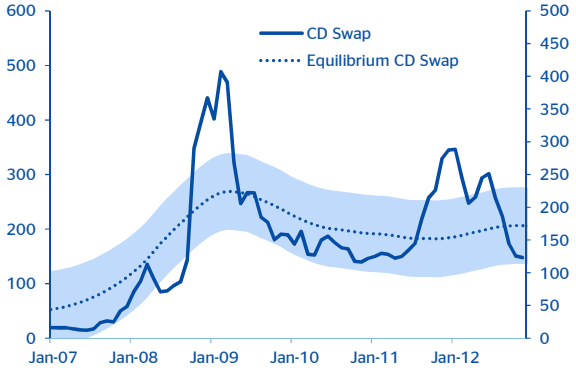
Europe Periphery I: CD Swap 5 year
(equilibrium: average of 4 alternative models + 0.5 Standard deviation)



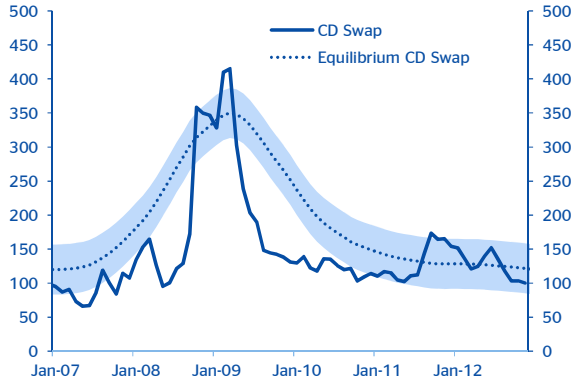
Europe Periphery II: CD Swap 5 year
(equilibrium: average of 4 alternative models + 0.5 Standard deviation)



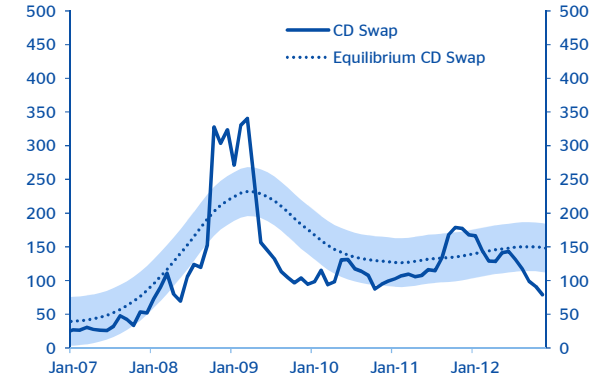
EM Europe: CD Swap 5 year
(equilibrium: average of 4 alternative models + 0.5 Standard deviation)



LATAM: CD Swap 5 year
(equilibrium: average of 4 alternative models + 0.5 Standard deviation)



EM Asia: CD Swap 5 year
(equilibrium: average of 4 alternative models + 0.5 Standard deviation)



Section 3

Vulnerability Indicators: Developed Economies

Vulnerability Indicators* 2012: Developed Countries

Source: BBVA Research, Haver, BIS, IMF and World Bank

	Fiscal Sustainability			External Sustainability			Liquidity Management			Macroeconomic Performance			Credit and housing			Private debt			Institutional		
	Structural Primary Balance (1)	Interest rate GDP growth differential 2012-16	Gross Public Debt (1)	Current Account Balance (1)	External Debt (1)	RER Appreciation (2)	Gross Financial Needs (1)	Short Term Public Debt (3)	Debt Held by non Residents (3)	GDP Growth (4)	Consumer prices (4)	Unemployment Rate (5)	Private Credit to GDP Growth (4)	Real Housing Prices Growth (4)	Equity Markets Growth (4)	Household Debt (1)	NF Corporate Debt (1)	Financial liquidity (6)	WB Political Stability (7)	WB Control Corruption (7)	WB Rule of Law (7)
United States	-4.7	-1.4	107	-3.1	100	-3.4	26	16	30	2.1	2.0	8.2	-1.7	-1.1	23.1	87	52	70	-0.5	-1.2	-1.6
Canada	-2.6	0.0	88	-3.4	72	3.6	16	14	21	1.9	1.8	7.3	-1.9	1.0	6.0	94	55	106	-1.0	-2.0	-1.8
Japan	-9.5	-0.5	234	1.7	45	-0.7	59	21	7	2.2	0.1	4.5	-1.4	-0.6	2.0	79	144	47	-1.0	-1.5	-1.3
Australia	-0.5	-0.9	27	-3.5	89	8.4	5	9	51	3.2	1.8	5.2	-2.9	-1.5	9.4	96	72	124	-0.9	-2.2	-1.8
Korea	1.4	-1.3	33	1.9	33	3.5	1	10	14	2.3	2.2	3.1	1.4	1.2	13.9	89	133	132	-0.2	-0.5	-1.0
Norway	-8.8	-3.4	50	15.2	132	1.8	-9	8	26	3.1	1.0	3.1	-2.0	6.1	28.6	118	145	156	-1.3	-2.2	-1.9
Sweden	-1.3	-1.2	37	7.2	186	4.6	5	12	46	1.2	1.4	7.5	-2.2	-4.1	17.8	85	172	301	-1.3	-2.2	-1.9
Denmark	-1.7	-0.1	47	5.0	190	-4.4	12	17	41	0.5	2.6	5.6	-5.0	-8.1	40.8	141	112	420	-1.1	-2.4	-1.9
Finland	0.5	-1.2	53	-1.6	224	-3.9	9	14	91	0.2	2.9	7.6	1.6	-4.4	3.7	73	143	153	-1.4	-2.2	-2.0
UK	-2.8	-0.7	89	-3.3	421	4.6	15	8	31	-0.4	2.7	8.1	-9.6	-0.7	12.0	100	117	112	-0.4	-1.5	-1.7
Austria	0.0	0.3	74	1.9	209	-1.5	9	8	83	0.9	2.3	4.3	-2.8	7.9	7.3	54	120	166	-1.2	-1.4	-1.8
France	-0.8	0.0	90	-1.7	190	-4.4	19	15	64	0.1	1.9	10.1	-1.6	-2.1	12.5	67	135	144	-0.6	-1.5	-1.5
Germany	1.3	-0.1	83	5.4	159	-5.1	8	10	62	0.9	2.2	5.2	-2.1	3.5	31.2	54	65	69	-0.9	-1.7	-1.6
Netherlands	-1.1	0.4	68	8.2	339	-3.4	14	15	56	-0.5	2.2	5.2	0.1	-7.2	15.3	137	121	119	-1.1	-2.2	-1.8
Belgium	1.1	0.1	99	-0.1	278	-2.0	19	17	58	0.0	2.8	7.4	-0.6	-1.5	-34.3	55	187	78	-0.9	-1.6	-1.4
Italy	4.7	3.0	126	-1.5	106	-2.8	30	22	35	-2.3	3.0	10.6	-1.5	-5.2	1.7	59	114	94	-0.6	0.0	-0.4
Spain	-2.2	2.9	89	-1.4	162	-1.2	23	17	28	-1.4	2.5	24.9	-7.0	-10.6	-9.8	86	184	142	-0.1	-1.1	-1.2
Ireland	-2.3	1.0	118	1.8	1033	-6.4	16	6	61	0.4	1.4	14.8	-6.2	-17.3	31.0	117	289	147	-1.0	-1.5	-1.8
Portugal	1.0	2.6	119	-2.9	231	-1.4	27	19	54	-3.0	2.8	15.5	-6.7	-4.6	-5.9	101	154	159	-0.7	-1.1	-1.0
Greece	0.9	3.5	171	-5.8	172	-1.7	29	13	56	-6.0	0.9	23.8	5.8	-13.3	-7.4	64	70	123	0.1	0.1	-0.6

*Vulnerability Indicators: (1) % GDP (2) Deviation from 4 years average (3) % of total debt (4) % year on year (5) % of Total Labor Force (6) Financial System Credit to Deposit (7) Index by World Bank Governance Indicators

Section 3

Vulnerability Indicators: Emerging Economies

Vulnerability Indicators* 2012: Emerging Countries

Source: BBVA Research, Haver, BIS, IMF and World Bank

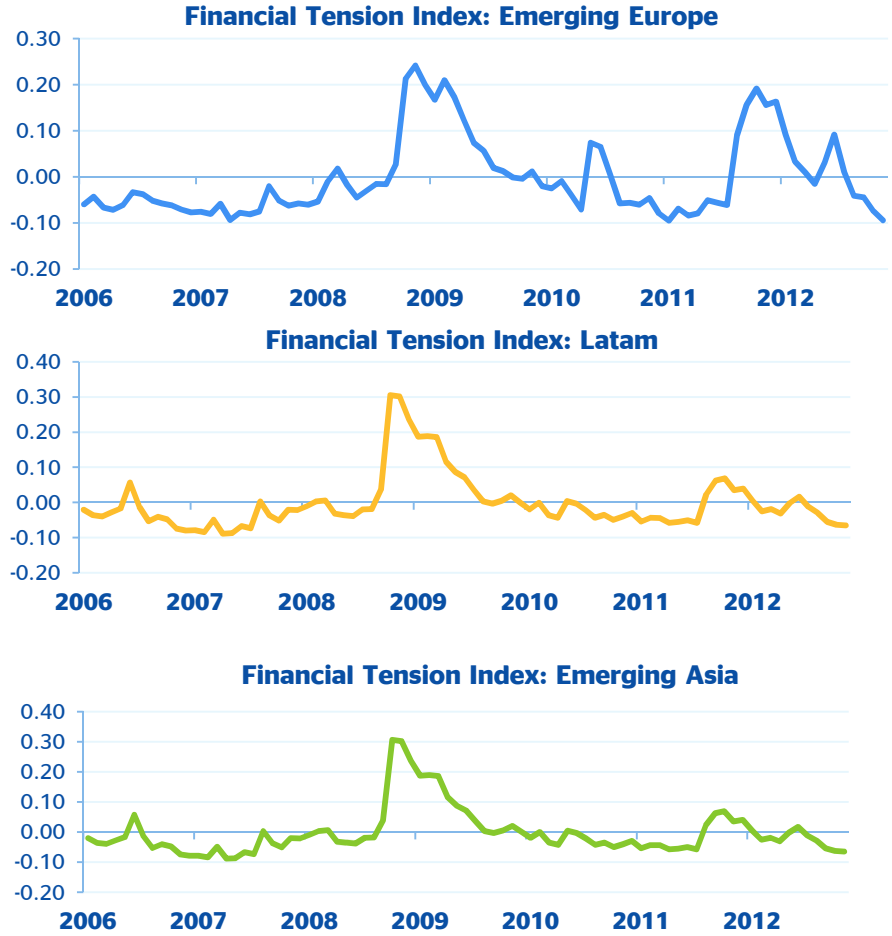
	Fiscal Sustainability			External Sustainability			Liquidity Management			Macroeconomic Performance			Credit and housing			Private debt			Institutional		
	Structural Primary Balance (1)	Interest rate GDP growth differential 2012-16	Gross Public Debt (1)	Current Account Balance (1)	External Debt (1)	RER Appreciation (2)	Gross Financial Needs (1)	Short Term External Debt to Reserves	Debt Held by non Residents (3)	GDP Growth (4)	Consumer prices (4)	Unemployment Rate (5)	Private Credit to GDP Growth (4)	Real Housing Prices Growth (4)	Equity Markets Growth (4)	Household Debt (1)	NF Corporate Debt (1)	Financial liquidity (6)	WB Political Stability (7)	WB Control Corruption (7)	WB Rule of Law (7)
Bulgaria	0.2	0.3	18	-0.3	101	-0.4	3	1.2	40	1.0	1.9	11.5	-10.2	-7.0	-6.6	25	49	96	-0.3	0.2	0.1
Czech Rep	-0.8	0.0	43	-2.4	54	-1.9	12	21	34	-1.0	3.4	7.0	3.1	-2.2	2.1	35	108	88	-1.1	-0.3	-1.0
Croatia	-3.1	1.3	50	-1.2	103	-2.9	11	2.0	34	-1.1	3.0	14.2	0.0	0.0	-7.5	40	36	119	-0.5	0.0	-0.2
Hungary	1.8	1.7	74	2.6	153	0.2	17	1.1	67	-1.0	5.6	10.9	-5.6	-17.2	17.8	36	143	132	-0.7	-0.3	-0.8
Poland	-0.3	-0.2	55	-3.7	74	-0.7	12	1.3	50	2.4	3.9	10.0	3.1	-18.1	14.3	37	61	109	-1.1	-0.5	-0.7
Romania	0.9	-0.7	35	-3.7	80	-5.1	11	1.8	54	0.9	2.9	7.2	2.1	-12.2	9.2	18	130	120	-0.1	0.2	0.0
Russia	1.0	-1.8	11	5.2	29	5.3	1	7.3	17	3.7	5.1	6.0	9.5	9.6	6.7	12	31	117	0.9	1.1	0.8
Turkey	1.2	0.6	38	-7.5	38	-0.3	9	0.9	29	3.0	8.7	9.4	3.8	-0.3	11.2	17	21	131	0.9	-0.1	-0.1
Argentina	-2.0	-5.8	42	0.1	27	-3.0	6	8.3	32	2.1	9.9	7.2	10.3	-4.5	-0.5	7	--	75	-0.2	0.4	0.6
Brazil	3.1	1.4	59	-2.2	13	-5.4	18	10.0	4	1.6	5.5	5.4	4.7	14.7	13.1	20	34	82	0.0	-0.2	0.0
Chile	-0.7	-1.5	11	-3.6	38	6.7	0	0.5	15	5.0	2.5	6.5	9.4	-1.3	8.8	29	48	179	-0.6	-1.6	-1.4
Colombia	0.8	0.4	36	-3.3	21	5.0	5	3.7	28	4.3	3.2	10.7	3.3	7.2	3.8	14	20	201	1.3	0.3	0.3
Mexico	0.2	-0.2	43	-0.9	26	1.3	11	4.6	30	3.7	4.0	4.8	1.9	-0.2	22.0	14	25	74	0.7	0.4	0.5
Peru	2.3	-3.0	19	-3.8	29	7.5	-1	15.0	72	6.0	3.8	7.0	4.3	-1.4	18.3	10	20	90	0.7	0.2	0.6
China	0.7	-7.2	22	2.3	6	4.9	8	7.9	...	7.6	2.6	4.1	-0.4	-4.3	-11.2	27	82	154	0.7	0.7	0.5
India	-5.9	-3.6	68	-4.3	19	-0.8	14	0.3	6	5.6	9.0	8.5	1.9	6.0	14.0	25	33	78	1.2	0.6	0.1
Indonesia	-0.2	-1.3	24	-2.1	23	-1.8	3	2.8	53	6.2	4.6	6.2	-3.1	-0.9	20.1	57	43	86	0.8	0.7	0.7
Malaysia	-3.3	-3.2	53	7.5	31	1.2	7	4.4	3	4.5	1.8	3.2	5.0	3.8	18.0	77	--	88	-0.2	0.0	-0.5
Philippines	0.3	-1.5	41	3.0	28	6.9	10	10.3	...	5.5	3.4	7.0	7.7	13.9	33.7	9	26	63	1.4	0.8	0.5
Thailand	-2.3	-5.5	44	-0.2	34	1.0	9	4.8	7	5.0	3.1	0.6	17.4	-2.9	41.8	25	23	98	1.0	0.4	0.2

*Vulnerability Indicators: (1) % GDP (2) Deviation from 4 years average (3) % of total debt (4) % year on year (5) % of Total Labor Force (6) Financial System Credit to Deposit (7) Index by World Bank Governance Indicators

Special Topic: Emerging Markets Regional Financial Tension Indicators

Emerging Economies: Financial stress indicators

Source: Bloomberg and BBVA Research

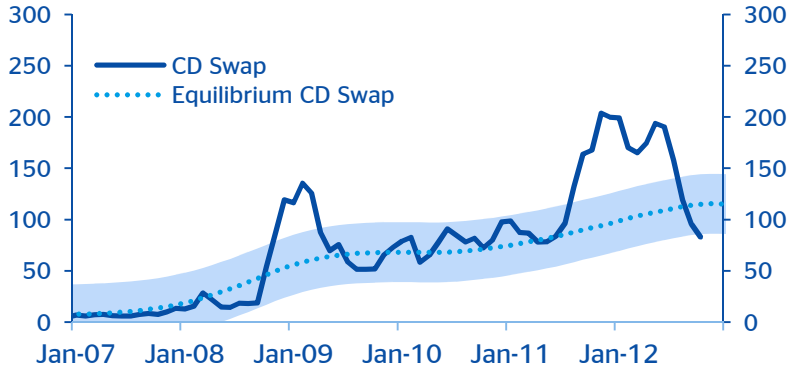


Introducing the new Emerging Markets Financial Tension Indicators

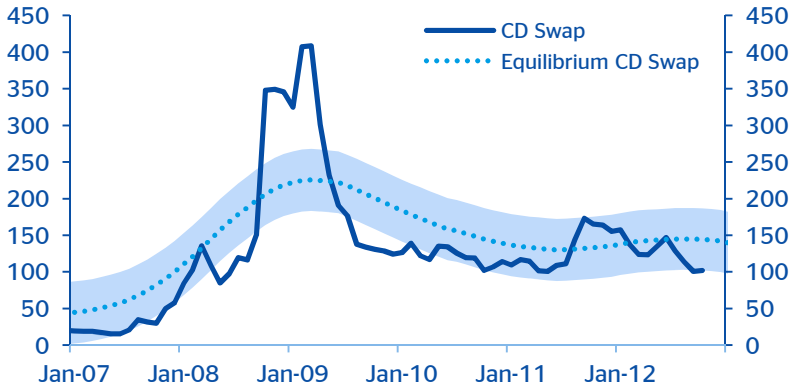
- The financial crisis that began in the summer of 2007 has resulted in one of the major global crisis, both in dimension and duration, since the Depression of the 1930s. Tensions have been registered in banking systems, stock markets and exchange rates, generating significant drops in activity levels in both developed and emerging economies.
- Against this background, the need to monitor the financial tensions arose, and for that reason, we constructed financial tension indicators (FTI) for three aggregates of emerging economies (EM). The advantage of utilizing such an index is the ability to monitor more accurately the financial stress episodes.
- The financial stress index is constructed using principal component analysis, a statistical method of extracting factors responsible for the co-movement of group of variables. We assume that financial stress is the primary factor influencing this co-movement, and by extracting this factor (the first principal component) we are able to create an index.
  - We construct FTIs for three EM aggregates: LatAm, EMEA and Asia. LatAm aggregate includes: Brazil, Chile, Colombia, Mexico and Peru. EMEA aggregate includes: Czech Republic, Hungary, Poland, Russia and Turkey and Asia aggregate includes: China, India, Indonesia, Korea, Malaysia, Philippines, Thailand, and Taiwan.
  - Firstly, using principal component analysis a FTI is constructed for each country, using the following series: 5y sovereign CDS, stock market volatility, exchange rate volatility and short term interest rate volatility; considering that each of these variables captures some aspect of financial stress. Secondly, we construct a FSI for each EM aggregate considering the main stock index market capitalization of each country within the aggregate.
- According with our FTIs, emerging economies were most affected by Lehman Brother´s collapse than by the current European debt crisis, as Lehman episode resulted in a severe credit crunch which caused series dislocation in the wholesale funding markets with high levels of contagion.

Special Topic: Introducing Our New Equilibrium Risk Premium Approach

Developed Economies: CD Swap 5 year (median)
(equilibrium:average of 4 alternative models + 0.5 Standard deviation)



Emerging Economies: CD Swap 5 year (median)
(equilibrium:average of 4 alternative models + 0.5 Standard deviation)



Introducing our new Equilibrium Risk Premium approach

Despite the recent debate about the equilibrium risk premium (ERP) finding an appropriate one is not an easy task. The ERP is a non observable variable and consequently have to be estimated. Estimation of non observable variables depends on the specification of the model (e.g. the output gap is different depending on the model used to extract the potential output). Besides, the existence of non-linearities and expectations can further complicate the estimation of the ERP(1):

- The existence of Non-linearities can influence the resulting ERP. Thus, increasing public debt from 80% to 100% could have significantly higher effect in the ERP than the same increase from very low levels of debt (e.g an increase from 20% to 40%).
- Expectations about the explanatory variables can influence the ERP. The holder of a bond should worry not only about the actual state of the explanatory variables but also about the expected path of them which can significantly affect the debt dynamics of the country. In this sense this models account for "multiple equilibria" phenomena.
- The combination of Non-linearities and Expectations can introduce sharp changes in the estimated ERP. This is specially the case of non contingent liabilities shock (unexpected sharp increases in debt arising from hidden liabilities or re-capitalizations schemes though public debt).

To account for these issues we have extended our original model with three new models to increase robustness in our ERP estimates. Below we describe the models included in our methodology:

- **The Panel Data linear Model (LM):** This is our original model in which we estimate the ERP taking into account the equilibrium global risk aversion (measured by the equilibrium US Baa spread or GRA), GDP growth (Y), Inflation (π), public debt (D) and a synthetic measure of institutional variables (I). Additionally, as an important share of public debt in Emerging Markets is external we extend the model for these countries with the level of external debt (XD) and a liquidity variable (International Reserves to imports or R):

$$(1)\ CDS_{i,t} = \delta_i + \beta \cdot GRA_{i,t} + \delta \cdot Y_{i,t} + \varphi \cdot \pi_{i,t} + \theta \cdot D_{i,t} + \gamma I_{i,t} + \mu XD_{i,t} \cdot EM + \alpha R_{i,t} \cdot EM + \varepsilon_{i,t}$$

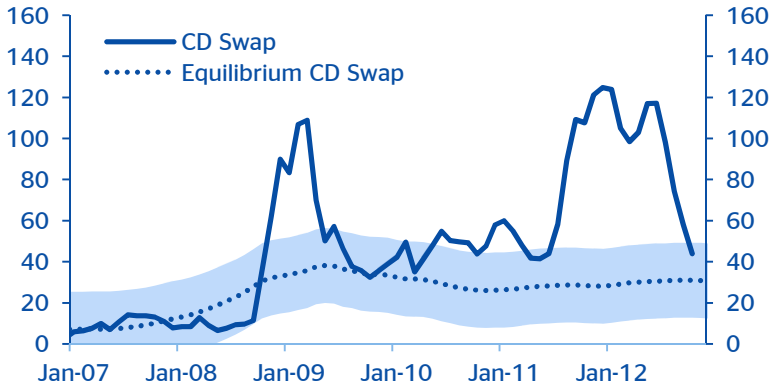
- **The Panel Data Quadratic Model (QM):** The specification of the model is similar to the linear one but we include an extra non linear term in both public debt (for developed economies) and external debt (for Emerging Countries) to account for non-linearities in debt:

$$(2)\ CDS_{i,t} = \delta_i + \beta \cdot GRA_{i,t} + \delta \cdot Y_{i,t} + \varphi \cdot \pi_{i,t} + \theta \cdot D_{i,t} + \mu \cdot D_{i,t}^2 + \gamma I_{i,t} + \mu XD_{i,t}^2 \cdot EM + \alpha R_{i,t} \cdot EM + \varepsilon_{i,t}$$

Special Topic: Introducing Our New Equilibrium Risk Premium Approach

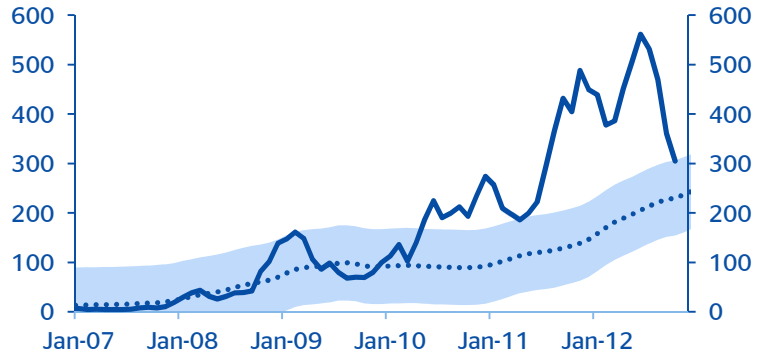
Europe Core: CD Swap 5 year (Central Europe & Nordics)

(equilibrium:average of 4 alternative models + 0.5 Standard deviation)



Europe Periphery I: CD Swap 5 year (Spain & Italy)

(equilibrium:average of 4 alternative models + 0.5 Standard deviation)



Introducing our New Equilibrium Risk Premium Approach

- **The Panel Data Expectations Model (EM):** Bondholders take into account also expectations about key variables which can influence todays value of the RP. To asses for, we estimate the linear model but substittuing actual values of debt variables by one year ahead expectations:

$$(3)\ CDS_{i,t} = \delta_i + \beta \cdot GRA_{i,t} + \delta \cdot \dot{Y}_{i,t} + \varphi \cdot \pi_{i,t} + \theta \cdot D^{e}_{i,t+12} + \gamma I_{i,t} + \mu XD^{e}_{i,t+12} \cdot EM + \alpha R_{i,t} \cdot EM + \varepsilon_{i,t}$$

- **The Quadratic Expectations model (EQM)**: Finally we combine the expectations model with non linearities to account for expected big changes in the key variables.Thus we account for non contingent liabilities shocks such as the one that happened in Greece (after the publication of the "true" debt) or Ireland (where the re-capitalisation program resulted in a sharp increase in public debt):

$$(4)\ CDS_{i,t} = \delta_i + \beta \cdot GRA_{i,t} + \delta \cdot \dot{Y}_{i,t} + \varphi \cdot \pi_{i,t} + \theta \cdot D^{e}_{i,t+12} + \mu \cdot D^{e^2}_{i,t+12} + \gamma \cdot I_{i,t} + \mu XD^{e}_{i,t+12} \cdot EM + \cdots$$
$$\cdots \emptyset XD^{e^2}_{i,t+12} \cdot EM + \alpha R_{i,t} \cdot EM + \varepsilon_{i,t}$$

Finally, we combine these alternative models to compute our ERP. Instead of using a geometric average (25% for each model) we correct it by uncertainty in expectations model by limiting their weights to 30% (15% for both models 3 and 4) and increasing the model including real data to 70% (35% for model 1 and 2). Further, we use 0.5 standard deviation to build uncertainty bands around the un-weighted average of our ERP. Note that as our ERP is included in our methodology to compute our BBVA Researh Country Risk Forecasts it will modify slightly (the ERP accounts for 25% of the Score) our methodology althoug it will increase robustness.

References

(1) An interesting discussion about non linearities and expectations can be found in Di Cesare et al (2012)."*Recent estimates of sovereign risk premia for euro-area countries. Central Bank of Italy Ocassional Papers 128*

(2) A similar approach of introducing non linearities can be found in De Grauwe P. and Y. Ji (2012), "Mispricing of sovereign risk and multiple equilibria in the Eurozone", *CEPS Working Documents*, No. 361.

Annex

Methodology : Indicators and Maps

- **Financial Stress Map:** It stress levels of according to the normalized time series movements. Higher positive standard units (1.5 or higher) stands for high levels of stress (dark blue) and lower standard deviations (-1.5 or below) stands for lower level of market stress (lighter colors)
- **Sovereign Rating Index:** An index that translates the three important rating agencies ratings letters codes (Moody´s, Standard & Poor´s and Fitch) to numerical positions from 20 (AAA) to default (0) . The index shows the average of the three rescaled numerical ratings.
- **Sovereign CD Swaps Map:** It shows a color map with 6 different ranges of CD Swaps quotes (darker >500, 300 to 500, 200 to 300, 100 to 200, 50 to 100 and the lighter below 50 bps)
- **Downgrade Pressure Map:** The map shows the difference of the current ratings index (numerically scaled from default (0) to AAA (20)) and the implicit ratings according to the Credit Default Swaps. We calculate implicit probabilities of default (PDs) from the observed CDS and the estimated equilibrium spread. For the computation of these PDs we follow a standard methodology as the described in Chan-Lau (2006) and we assume a constant Loss Given Default of 0.6 (Recovery Rate equal to 0.4) for all the countries in the sample. We use the resulting PDs in a cluster analysis to classify each country at every point in time in one of 20 different categories (ratings) to emulate the same 20 categories used by the Rating Agencies. The map and the graph plot the difference between the actual sovereign rating index and the CDS-implied sovereign rating, in notches. Higher positives differences account for Downgrade potential pressures and negative differences account for Upgrade potential. We consider the +-3 notches area as the Neutral one
- **Vulnerability Radars & Risk Thresholds Map:**

  - A **Vulnerability Radar** shows a static and comparative vulnerability for different countries. For this we assigned several dimensions of vulnerabilities each of them represented by three vulnerability indicators. The dimensions included are: Macroeconomics, Fiscal, Liquidity, External, Excess Credit and Assets, Private Balance Sheets and Institutional. Once the indicators are compiled we reorder the countries in percentiles from 0 (lower ratio among the countries) to 1 (maximum vulnerabilities) relative to its group (Developed Economies or Emerging Markets). Furthermore Inner positions (near 0) in the radar shows lower vulnerability meanwhile outer positions (near 1) stands for higher vulnerability. Besides we compare the positions of the country with risk thresholds in red whose values have been computed according to our own analysis or empirical literature.

  - **The Distance to Risk Map**: Shows in different colours a summary table of vulnerability radars. Darker colours stand for indicators above risk thresholds (developed or emerging depending the country). Lighter colours reflect safe values in the sense of a high distance to the risk thresholds. Dimensions are computed as the geometric average of the three indicators included in each of the dimensions.

Annex

Methodology : Indicators and Maps

Risk Thresholds Table

Vulnerability Dimensions	Risk Thresholds Developed Economies	Risk Thresholds Emerging Economies	Risk Direction	Research
Macroeconomics				
GDP	1.5	3.0	Lower	BBVA Research
Inflation	4.0	10.0	Higher	BBVA Research
Unemployment	10.0	10.0	Higher	BBVA Research
Fiscal Vulnerability				
Ciclically Adjusted Deficit ("Strutural Deficit")	-4.2	-0.5	Lower	Baldacci et Al (2011). Assesing Fiscal Stress. IMF WP 11/100
Expected Interest rate GDP growth diferential 5 years ahead	3.6	1.1	Higher	Baldacci et Al (2011). Assesing Fiscal Stress. IMF WP 11/100
Gross Public Debt	73.0	43.0	Higher	Baldacci et Al (2011). Assesing Fiscal Stress. IMF WP 11/100
Liquidity Problems				
Gross Financial Needs	17.0	21.0	Higher	Baldacci et Al (2011). Assesing Fiscal Stress. IMF WP 11/100
Debt Held by Non Residents	84.0	40.0	Higher	Baldacci et Al (2011). Assesing Fiscal Stress. IMF WP 11/101
Short Term Debt Pressure				
Publi Short Term Debt as % of Total Publi Debt (Developed)	9.1		Higher	Baldacci et Al (2011). Assesing Fiscal Stress. IMF WP 11/100
Reserves to Short term debt (Emerging)		0.6	Lower	Baldacci et Al (2011). Assesing Fiscal Stress. IMF WP 11/100
External Vulnerability				
Current Account Balance (% GDP)	4.0	6.0	Lower	BBVA Research
External Debt (% GDP)	200.0	60.0	Higher	BBVA Research
Real Exchange Rate (Deviation from 4 yr average)	5.0	10.0	Higher	EU Commission (2012) and BBVA Research
Private Balance Sheets				
Household Debt (% GDP)	84.0	84.0	Higher	Chechetti et al (2011). "The real effects of debt". BIS Working Paper 352 & EU Comission (2012)
Non Financial Corporate Debt (% GDP)	90.0	90.0	Higher	Chechetti et al (2011). "The real effects of debt". BIS Working Paper 352 & EU Comission (2013)
Financial liquidity (Credit/Deposits)	130.0	130.0	Higher	EU Commission (2012) and BBVA Research
Excess Credit and Assets				
Private Credit to GDP (annual Change)	8.0	8.0	Higher	IMF Global Financial Stability Report
Real Housing Prices growth (% yoy)	8.0	8.0	Higher	IMF Global Financial Stability Report
Equity growth (% yoy)	20.0	20.0	Higher	IMF Global Financial Stability Report
Institutions				
Political Stability	0.2 (9th percentil)	-1.0 (8th percentil)	Lower	World Bank Governance Indicators
Control of Corruption	0.6 (9th percentil)	-0.7 (8th percentil)	Lower	World Bank Governance Indicators
Rule of Law	0.6 (8th percentil)	-0.6 (8 th percentil)	Lower	World Bank Governance Indicators

Annex

Methodology: Models and BBVA country risk

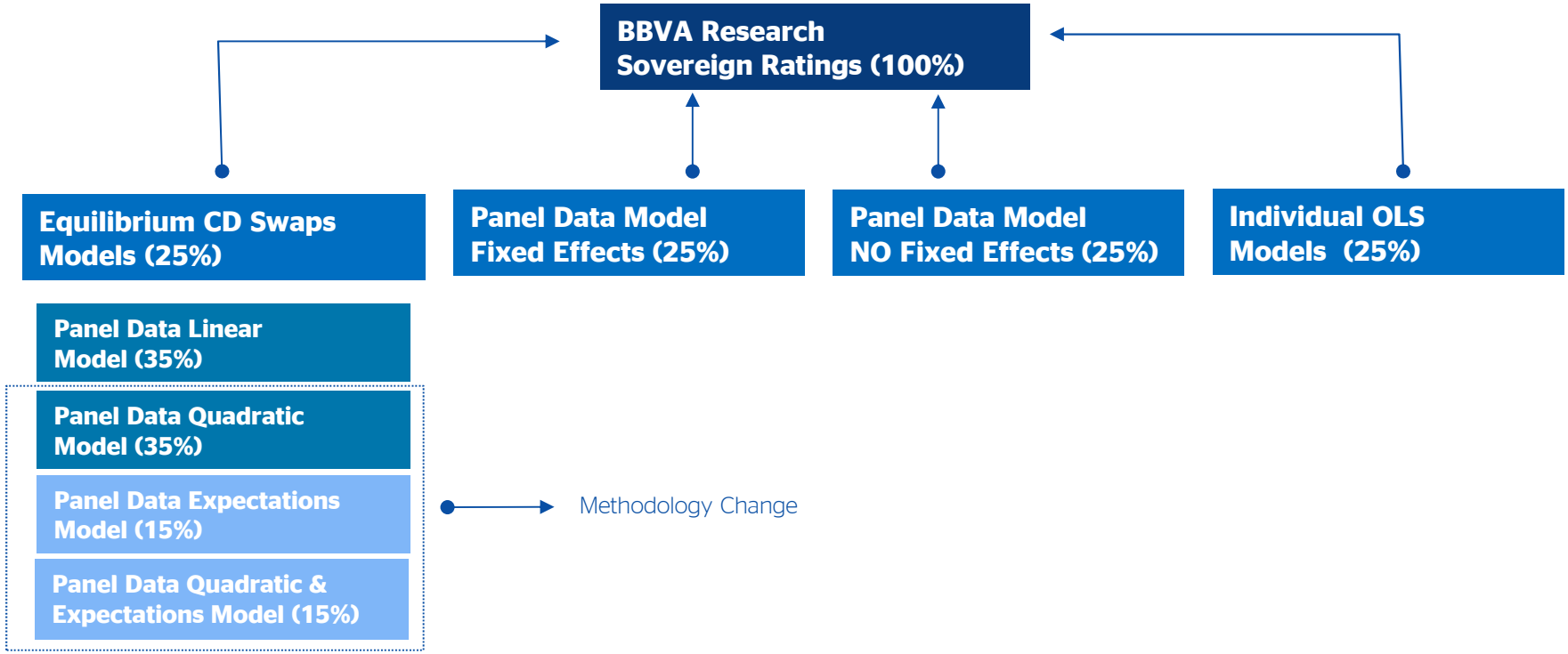
- **BBVA Research Sovereign Ratings Methodology:** We compute our sovereigns ratings by averaging four alternatives sovereign rating models developed at BBVA research:
  - **Credit Default Swaps Equilibrium Panel Data Models:** This model estimate actual and forecasts equilibrium levels of CD Swaps for 40 developed and emerging markets. The long run equilibrium CD Swaps are the result of four alternative panel data models. The average of these equilibrium values are finally are finally converted to a 20 scale sovereign rating scale. The CD Swaps equilibrium are calculated by a weighting average of the four CD Swaps equilibrium model estimations (30% for the linear and quadratic models and 15% for each expectations model to correct for expectations uncertainty). The weighted average is rounded by 0.5 standard deviation confidence bands. The models are the following
    - Linear Model (35% weight): Panel Data Model with fixed effects including Global Risk Aversion, GDP growth, Inflation, Public Debt and institutional index for developed economies and adding External debt and Reserves to Imports for Emerging Markets
    - Quadratic Model (35% weight): It is similar to the Linear Panel Data Model but including a quadratic term for public (Developed and emerging) and external debt (Emerging)
    - Expectations Model (15% weight): It is similar to the linear model but public and external debt account for one year expected values.
    - Quadratic Expectations Model (15% weight): Similar to the expectations model but including quadratic terms of public debt and external debt expectations
  - **Sovereign Rating Panel Data Ordered Probit with Fixed Effects Model:** The model estimates a sovereign rating index (a 20 numerical scale index of the three sovereign rating agencies) through ordered probit panel data techniques. This model takes into account idiosyncratic fundamental stock and flows sustainability ratios allowing for fixed effects , thus including idiosyncratic country specific effects
  - **Sovereign Rating Panel Data Ordered Probit without Fixed Effects Model:** The model estimates a sovereign rating index (a 20 numerical scale index of the three sovereign rating agencies) through ordered probit panel data techniques. This model takes into account idiosyncratic fundamental stock and flows sustainability but fixed effects are not included, thus all countries are treated symmetrically without including the country specific long run fixed effects.
  - **Sovereign Rating Individual OLS models:** These models estimates the sovereign rating index (a 20 numerical scale index of the three sovereign rating agencies) individually. Furthermore , parameters for the different vulnerability indicators are estimated taken into account the own history of the country independent of the rest of the countries.

Annex

Methodology: Models and BBVA country risk

BBVA Research Sovereign Ratings Methodology Diagram

Source: BBVA Research



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