BBVA | RESEARCH

Country Risk Quarterly Report

BBVA Research

Cross-Country Emerging Markets Unit

March 2014

Summary

Financial Markets & Global Risk Aversion

- **The focus of markets seems to have switched from the fears to the FED's tapering to more idiosyncratic factors**. Both regional and country specific factors are playing a higher role than before
- **The spillovers of the Ukraine and Russian crisis have been minor so far and highly concentrated in EM Europe** . Global Risk Aversion has reacted moderately but it is still on safe levels.
- **The correction of Emerging Markets assets is still alive but already in the undershooting phase.** However, some countries are more penalized by local factors.

Sovereign Markets & Ratings Update

- **The downward trend in risk premia of most developed markets have continued**. CDS spreads in Peripheral European countries (including Greece) have reached levels not observed since 2009. As consequence, **the gap between market implicit ratings and official ratings is dying out.**
- **The reversal in the EU periphery´s credit rating cycle seems to be confirmed by the upgrades of Ireland and Spain** by Moody's.
- **The decoupling of rating cycles between different emerging regions continues:** The Pacific Alliance countries confirm their strong momentum with the **upgrade of Mexico** by both Moody's and S&P. However, the negative trend in EM Europe continues as **Croatia was downgraded again**.

Our own country risk assessment

- **An increasing discrimination by both markets and rating agencies is being supported by a higher role of idiosyncratic factors** in the risk assessment. This is being reflected by diverging trends in risk premia and simultaneous upgrades and downgrades by rating agencies. The local "pull" factors are also playing a bigger role in the adjustment of EM capital flows although a revival of global factors can not be ruled out specially if tensions in Ukraine spike.
- **New risks scenarios have emerged from the Ukrainian-Russia situation. So far the risks are limited, although EM Europe currencies depreciation poses special risks in countries with a currency mismatch problem** (high shares of foreign currency denominated loans). **There are also potential channels of transmission to the rest of EM Europe.**
- **Our Early Warning System does not signal an excess of credit in Emerging Markets although some isolated cases should be monitored (i.e. China)**. However, our analysis also shows that **risk thresholds are dynamic, so policy makers should be alert to changes in risk thresholds once the US interest rates start to rise**

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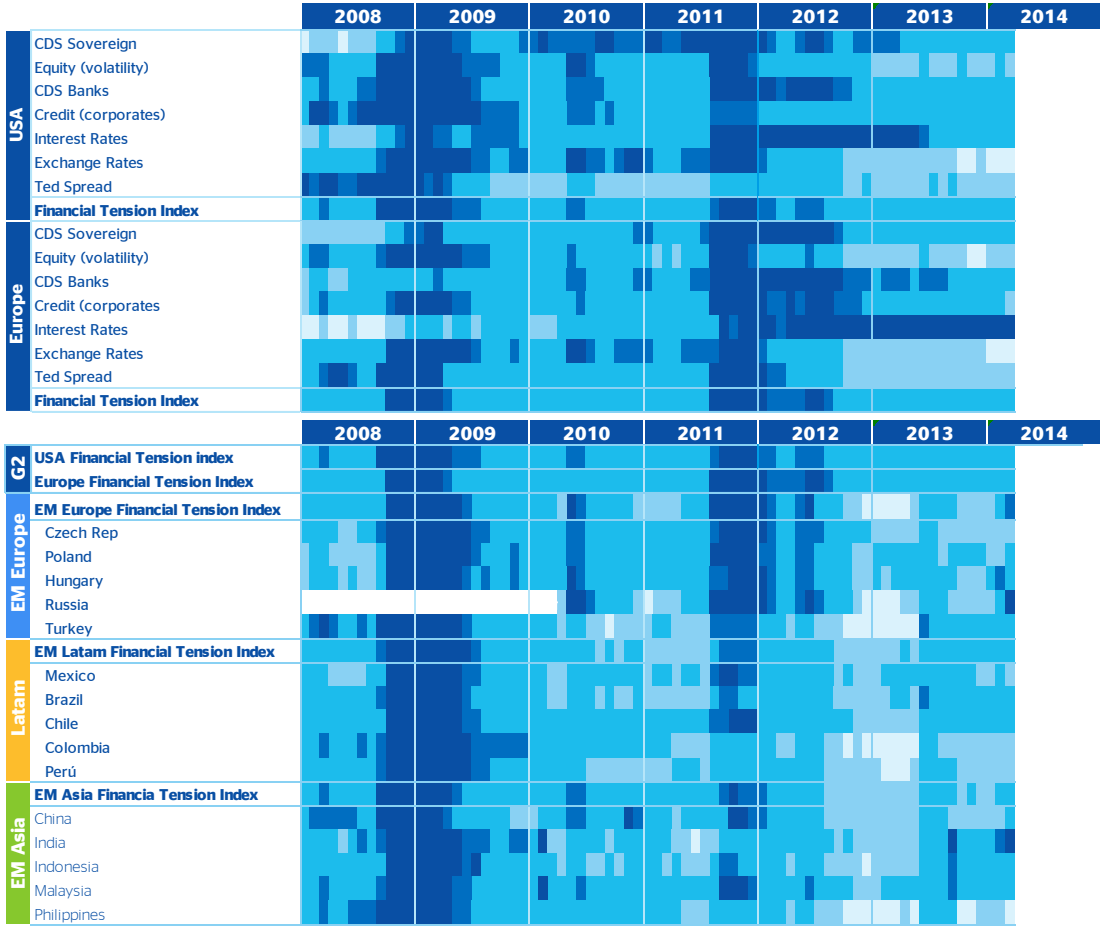
Section 1

Financial Markets Stress

BBVA Research Financial Stress Map

Source: BBVA



- **Financial Tensions in developed markets remain in the "neutral" area** despite the geopolitical tensions.
- **The entrance of some asset class in the "low tension" area could rise some valuation concerns but it´s still early to confirm** these worries.
- **The EM Europe** financial tensions index have **surged due to the political unrest in Ukraine and Russia**.
- **Latam remains somehow isolated** with Mexico and the Andeans showing some relaxation
- **Some financial tensions rises in China but specially in India**.

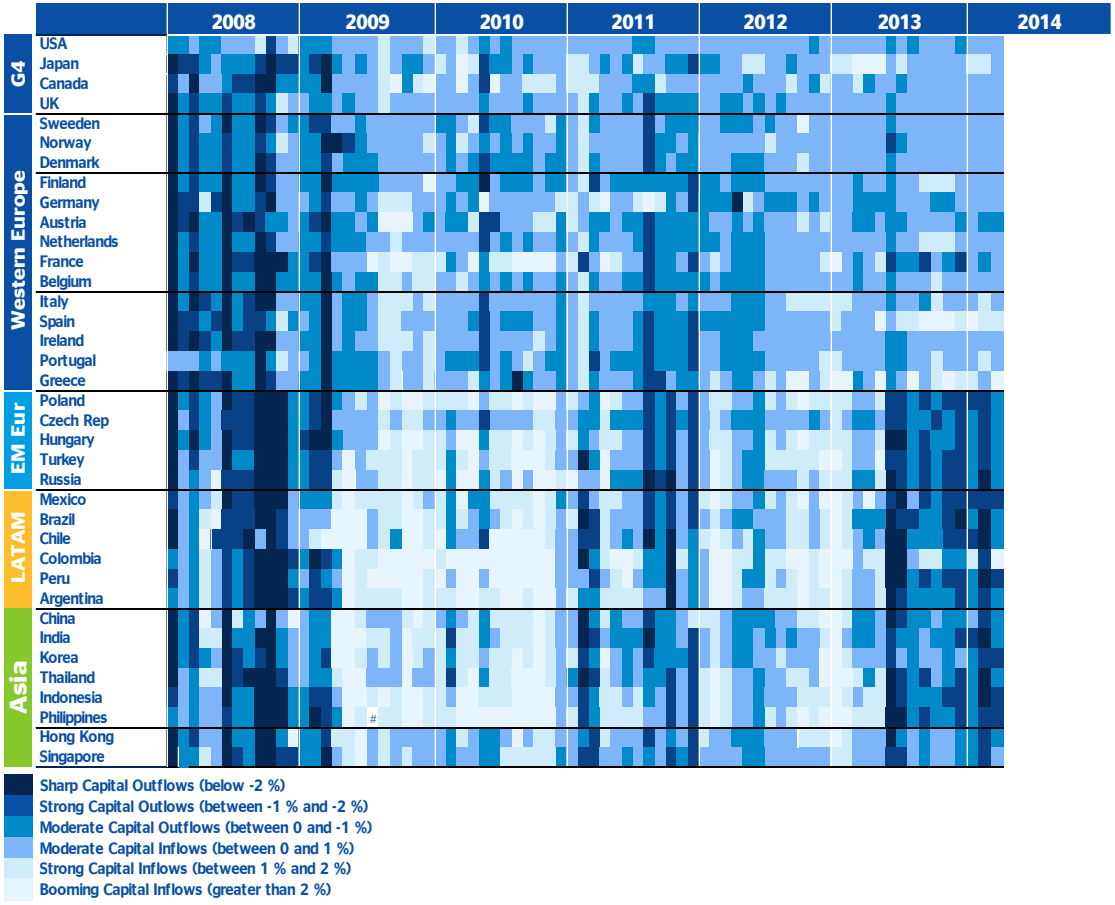
Section 1

Capital Flows Update

BBVA Country Portfolio Flows Map

(Country Flows over total Assets)

Source: BBVA Research



- **Portfolio re-allocation continued 1Q14 at a vivid pace, driving the correction** of previous excesses **into undershooting area. We estimate that cumulative EM flows are now near 12% below equilibrium**.

- **Excess correction has been asymmetric across countries**. Some countries are now near long run equilibrium levels (Turkey, Indonesia) while others have clearly undershoot (such as Russia or Brazil).

- Once the Fed's action was fully priced in, **idiosyncratic factors have played a greater role**.

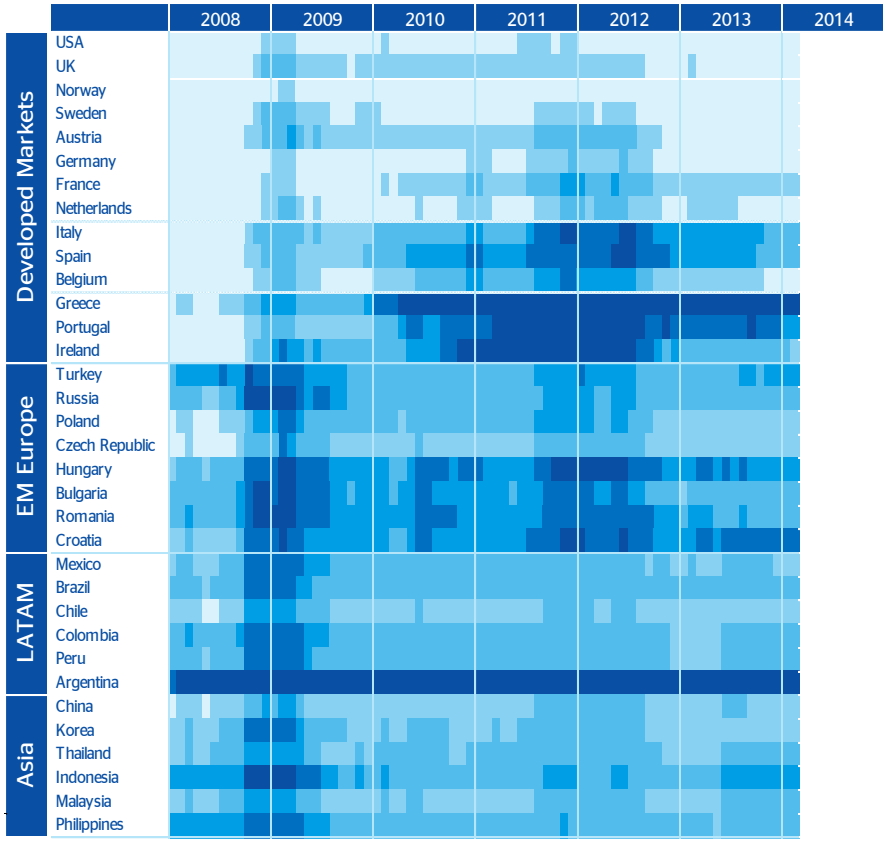
- **However, the recent Ukraine-Russian affair has led global factors to emerge** again. This **crisis has triggered some acceleration in the portfolio rebalancing**

Section 2

Sovereign Markets Update

Sovereign CDS spreads

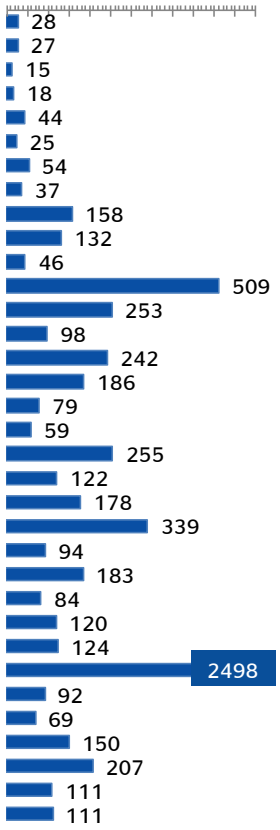
Source: Datastream and BBVA Research



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)

Feb. 2014

End of Month



- The evolution of **Developed markets spreads continued to improve** while **Emerging Markets discrimination increased**.
- **European periphery's CDS spreads continue decreasing** in the last quarter, and they are **currently at levels not observed since the onset of the Greek crisis in May 2010** or before.
- **EM Europe's CDS had a mixed performance**. **Turkey, Russia, Romania and Croatia** rose, while spreads of the rest of the area dropped (included Hungary) or remained stable.
- **Most Latin America sovereign CDS spreads tightened** with the exception of Argentina.
- **Asian sovereigns spreads remained stable or decreased.** However, **China and Thailand spreads deteriorated** 20 and 30 bps respectively.

Section 2

Sovereign Credit Ratings Update

Sovereign Rating Index 2008-2014

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 cycle seems to be changing its course for European peripheral countries**. Moody's upgraded Ireland and Spain by one notch.
- **Emerging Markets:** The outlook in Emerging Markets is quite mixed. **In Latam, Mexico was upgraded by S&P and Moody's. Croatia was downgraded again**, this time by S&P.

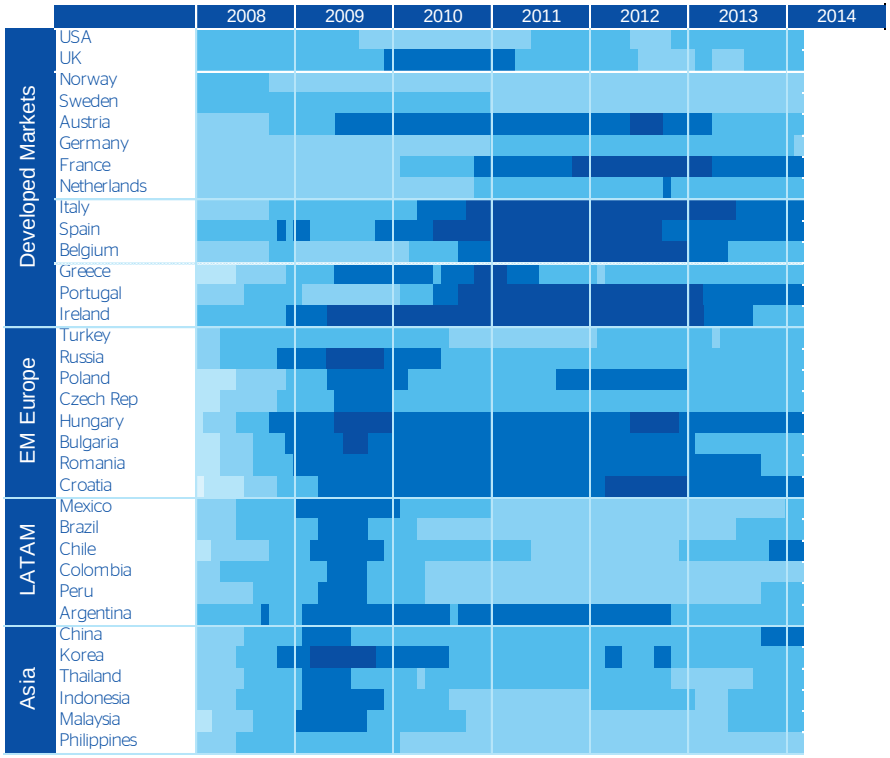
Section 2

Sovereign downgrade Pressures Map

Rating Agencies Downgrade Pressure Map

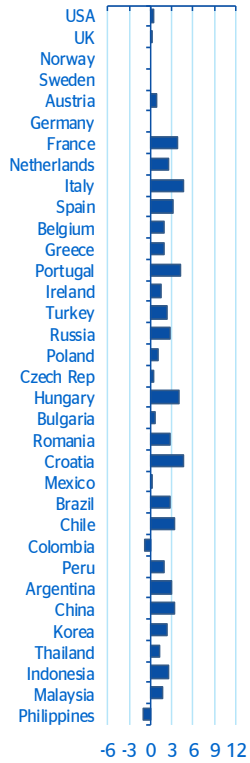
(actual minus CDS-implied sovereign rating, in notches)

Source: BBVA Research



Feb. 2014

End of Month



- **Divergences between official and market implicit ratings have tightened with most of the countries quoting near the official ratings**
- **The gaps between implicit and observed ratings in Europe's periphery are at a 3 year low** thanks to the decrease in most CDS spreads and the recent upgrade of some countries.
- In **Emerging Europe**, **downgrade risk is diverging:** it is increasing in Croatia, Russia and Turkey (although is still pretty small).
- **Downgrade pressure in Latin-America continues to be small**. It is the region with the lowest average gap.
- The situation is similar in **EM Asia**, where downgrade pressure is low, but there are growing downgrade pressures in **China.**

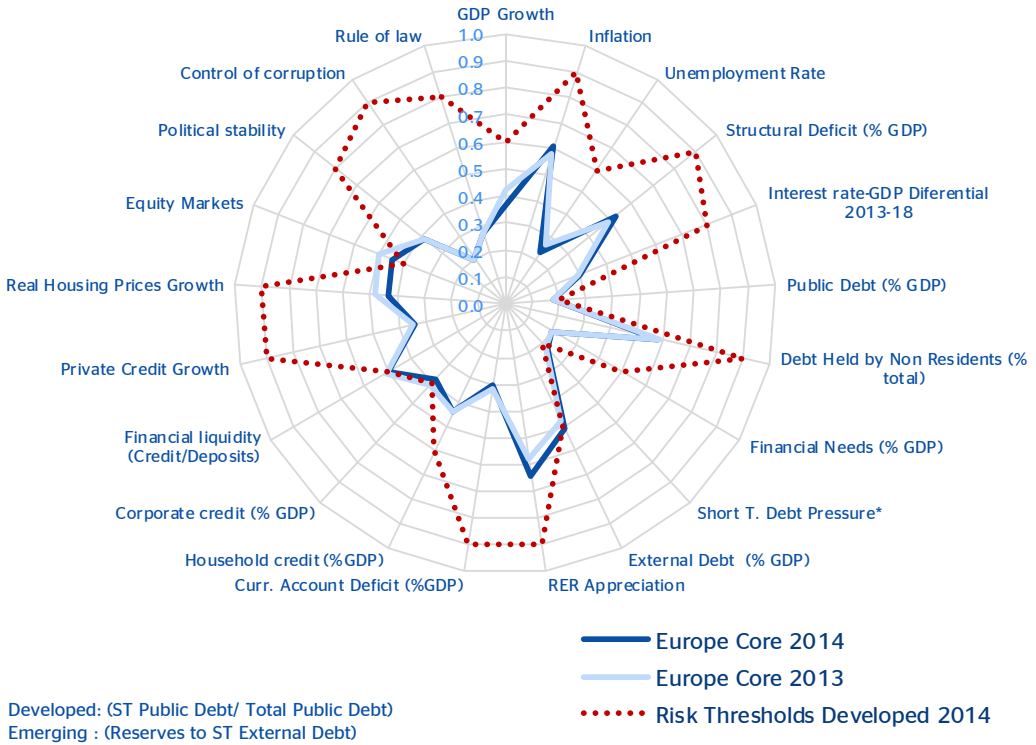
Downgrade Pressure Map: The map shows the difference of the current ratings index (numerically scaled from default (0) to AAA (20)) and the implicit ratings according to the Credit Default Swaps. We calculate implicit probabilities of default (PDs) from the observed CDS and the estimated equilibrium 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 2014

(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

Most Vulnerability indicators below the risk thresholds. Few changes with respect to 2013

Equity markets are slightly above the risk threshold raising valuation concerns

External debt levels and Real Exchange Rate appreciation should be monitored

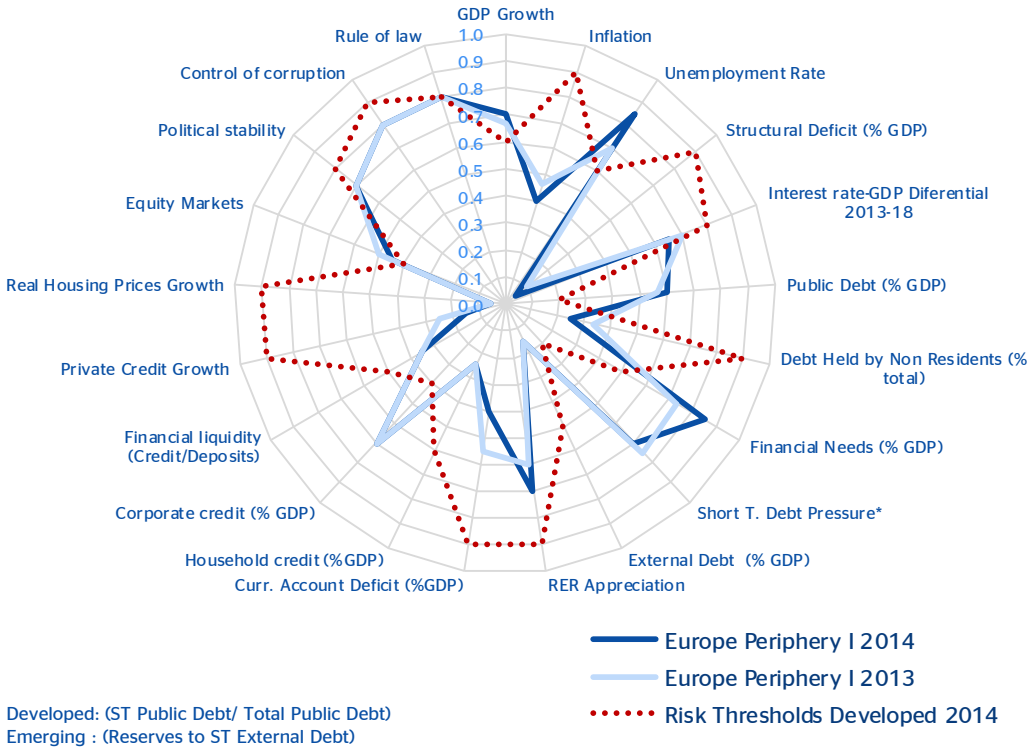
Vulnerability Radar: Shows a static and comparative vulnerability for different countries. For this we assigned several solvency , liquidity and macro variables and we reorder in percentiles from 0 (lower ratio among the countries to 1 maximum vulnerabilities.) Furthermore Inner positions in the radar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

Section 3

Regional Risk Update: Europe Periphery I

Europe Periphery I: Vulnerability Radar 2014

(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

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.

✓ Structural public balances, housing prices growth, and private credit growth continued to improve

? Real Exchange Appreciation could pose some risks

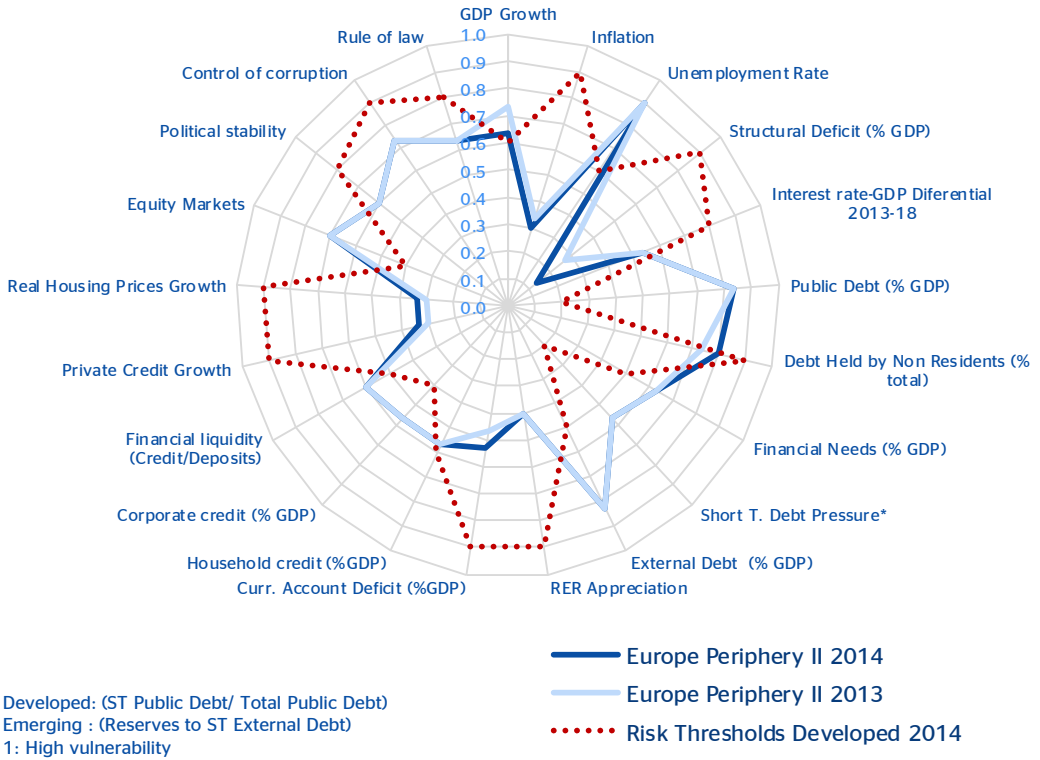
✗ Activity and employment indicators remain weak; Public Debt levels still rising

Section 3

Regional Risk Update: Europe Periphery II

Europe Periphery II: Vulnerability Radar 2014

(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 public deficits and private balance sheets gradually improving

Debt Held by non-residents is rising with respect to 2014. Financial needs still high

Public debt and External debt levels are still above risk levels. Unemployment rate still high

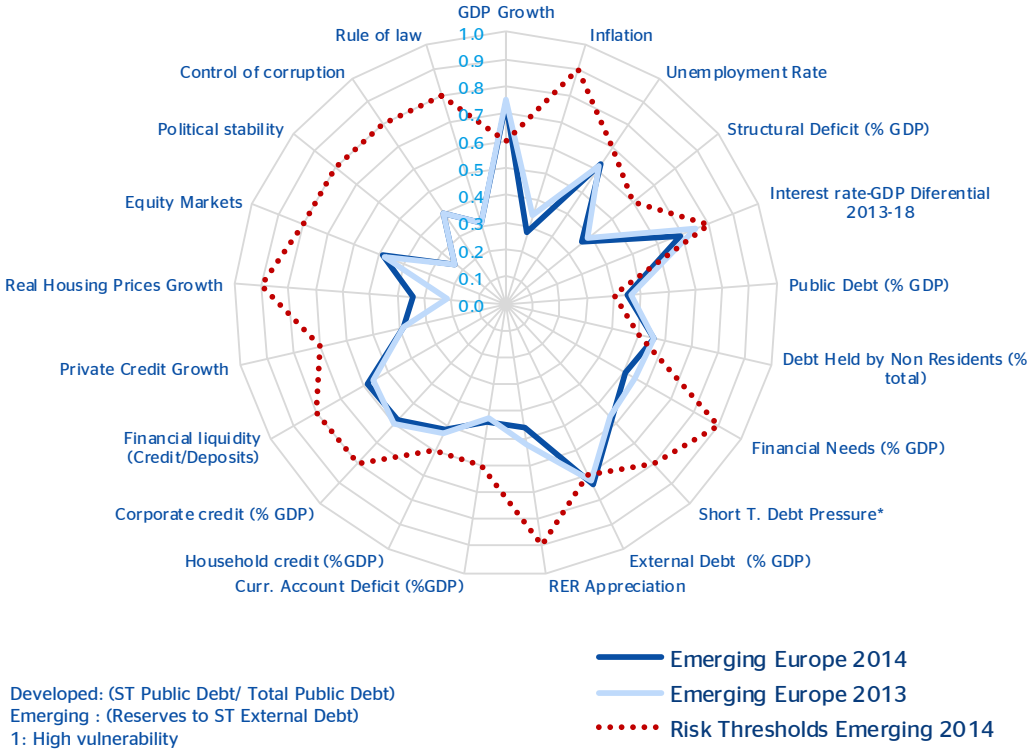
Vulnerability Radar: Shows a static and comparative vulnerability for different countries. For this we assigned several solvency , liquidity and macro variables and we reorder in percentiles from 0 (lower ratio among the countries to 1 maximum vulnerabilities.) Furthermore Inner positions in the radar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

Section 3

Regional Risk Update: Emerging Europe

Emerging Europe: Vulnerability Radar 2014

(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

Structural public balances and private credit at healthy levels

Financial liquidity vulnerable to investor sentiment changes

Public and external debt levels still higher than risk. Currency Mismatch (exchange rate + foreign exchange denominated loans)

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

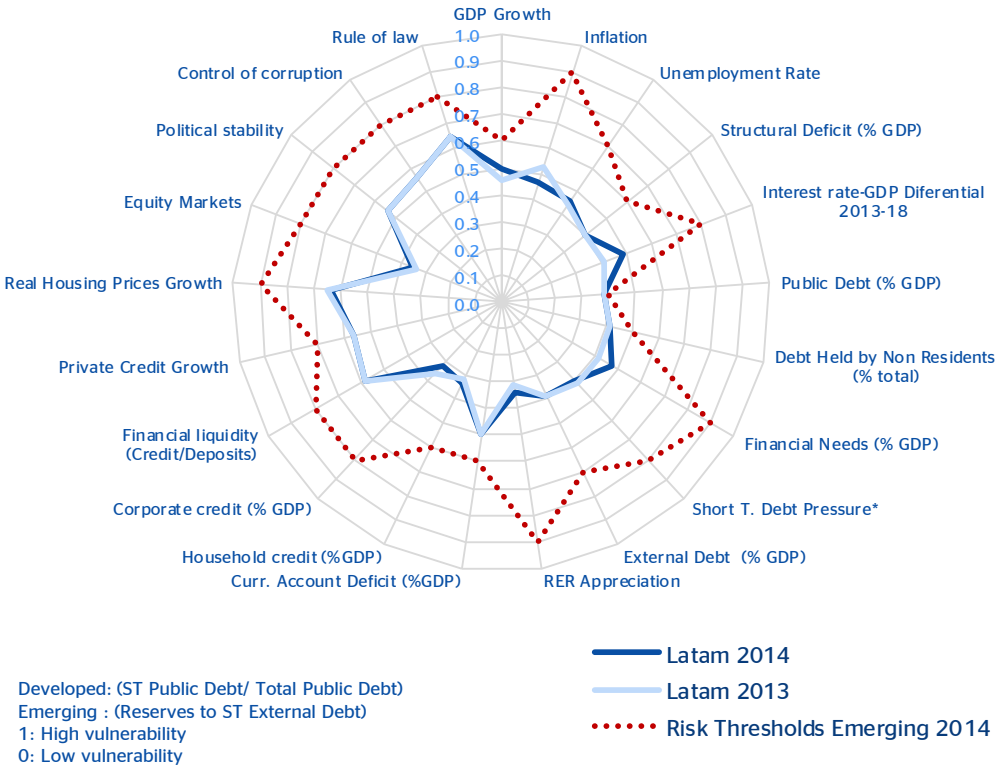
Section 3

Regional Risk Update: Latam

Latam: Vulnerability Radar 2014

(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

All vulnerability indicators are far from risk thresholds

Weaker economic growth in some countries. Slight deterioration in financial needs and interest rate-GDP differential

Current Account vulnerability relatively high in some countries

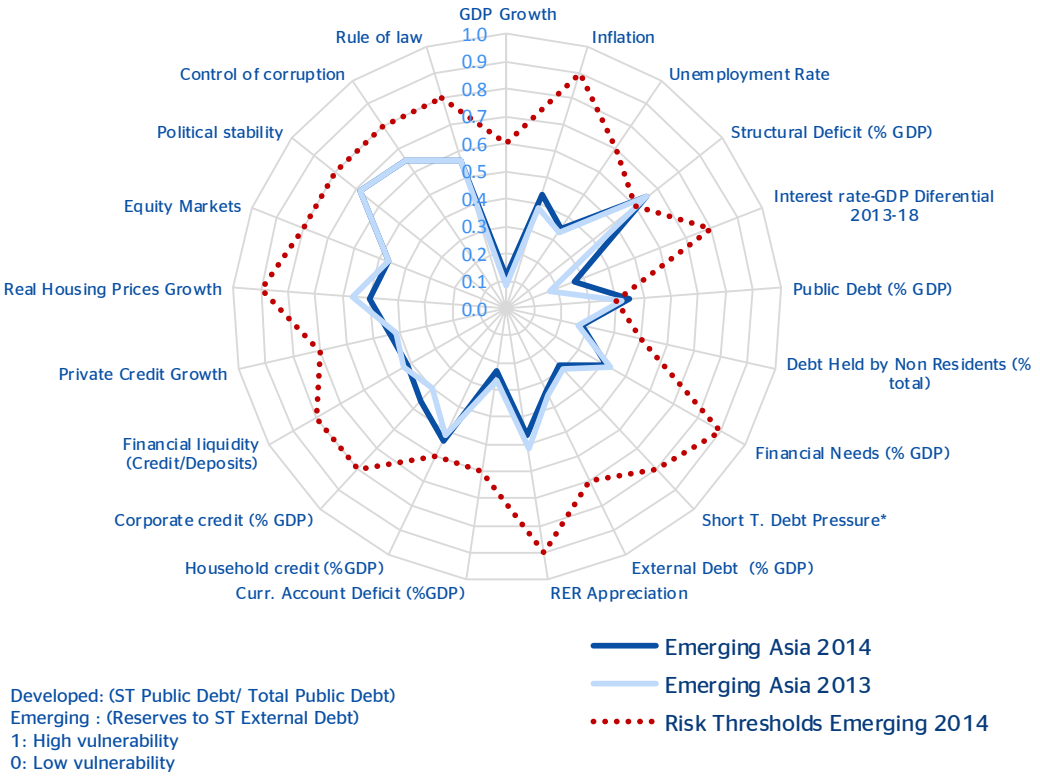
Vulnerability Radar: Shows a static and comparative vulnerability for different countries. For this we assigned several solvency , liquidity and macro variables and we reorder in percentiles from 0 (lower ratio among the countries to 1 maximum vulnerabilities.) Furthermore Inner positions in the radar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

Section 3

Regional Risk Update: Asia

Emerging Asia: Vulnerability Radar 2014

(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

Activity indicators still among the most solid among Emerging Markets

Private Credit and housing prices growth risks keep on rising in China

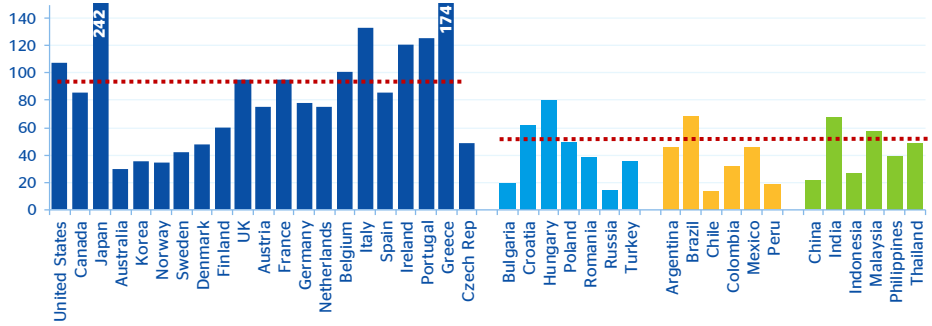
Structural fiscal deficits and public debt level above the risk thresholds in some countries

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

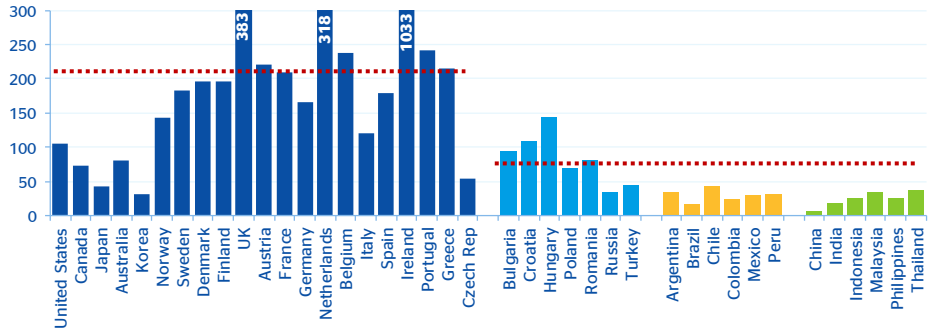
Section 3

Public and Private Debt Chart Gallery

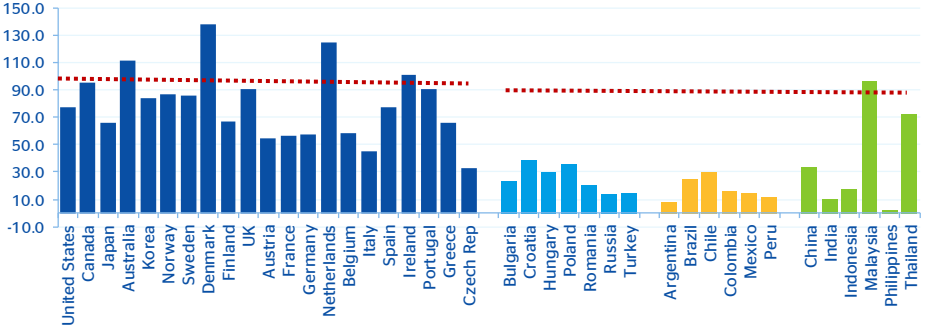
Gross Public Debt 2014
(% GDP)
Source: BBVA Research and IMF



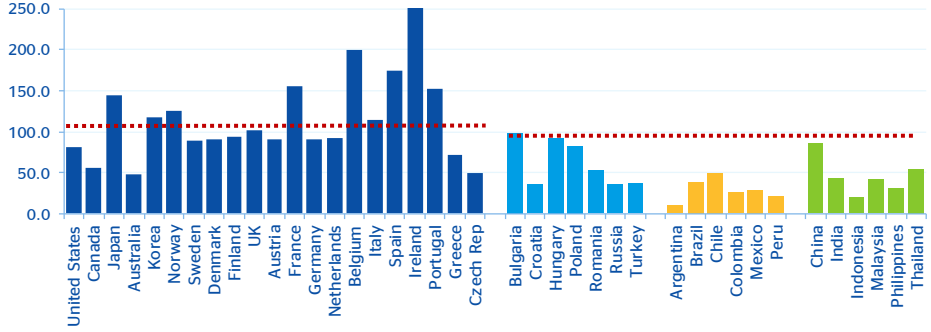
External Debt 2014
(% GDP)
Source: BBVA Research and IMF



Household Debt 2014
(% GDP)
Source: BBVA Research and BIS



Corporate Sector Debt 2014
(% GDP, excluding bond issuances)
Source: BBVA Research and BIS



Risk Thresholds

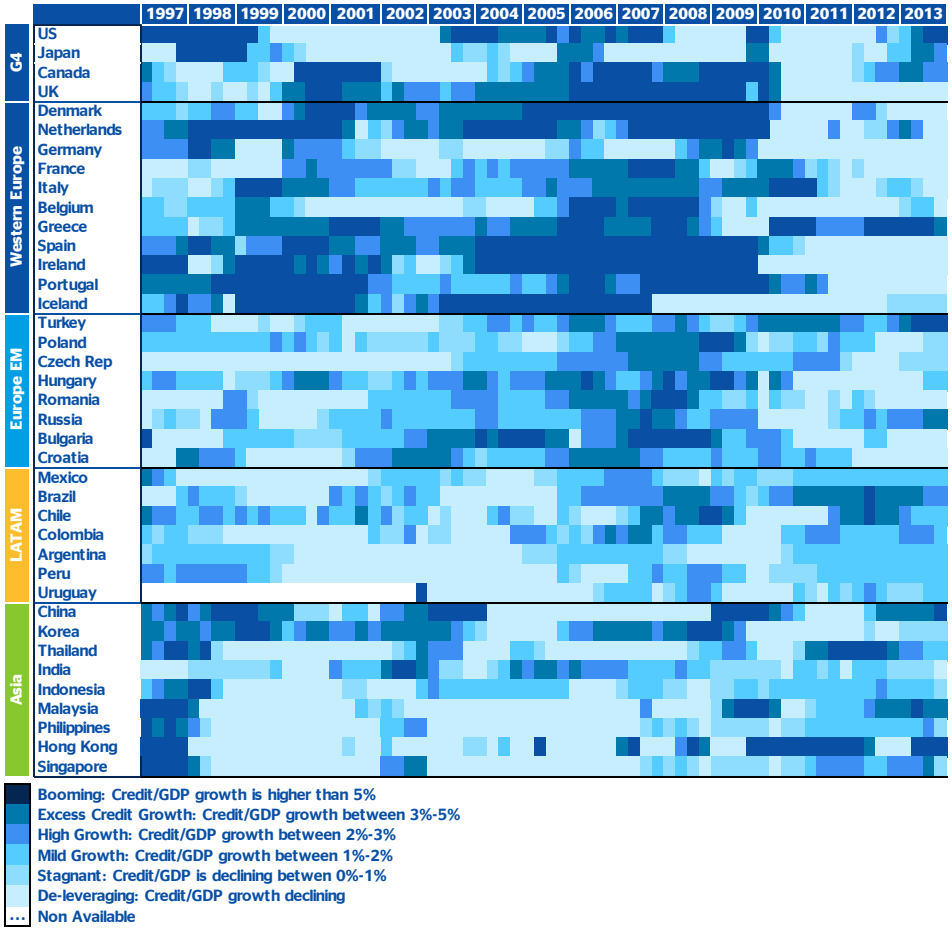
Section 3

Private Credit Pulse

Private credit colour map (1997-2013 Q4)

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

Source: BBVA Research and Haver



- **Credit-to-GDP ratio continues to recover rapidly in the US**. The incoming data shows that credit growth is **cooling off in Japan**. Most of **European countries maintain their de-leveraging process**.

- **In EM Europe, there is a clear decoupling**. The credit ratio is growing fast in Turkey and Russia, although in the former it is showing some signs of stabilizing. Meanwhile, de-leveraging continues in the rest of the countries.

- **Private credit growth continues to moderate in Latin America continues.** Most of the countries show safe growth levels, while Brazilian deceleration allows the country to avoid the booming area.

- In Asia, credit ratio growth continues to be **fast in China and specially in Hong Kong**. There are no signs of excess credit growth in the rest of the countries

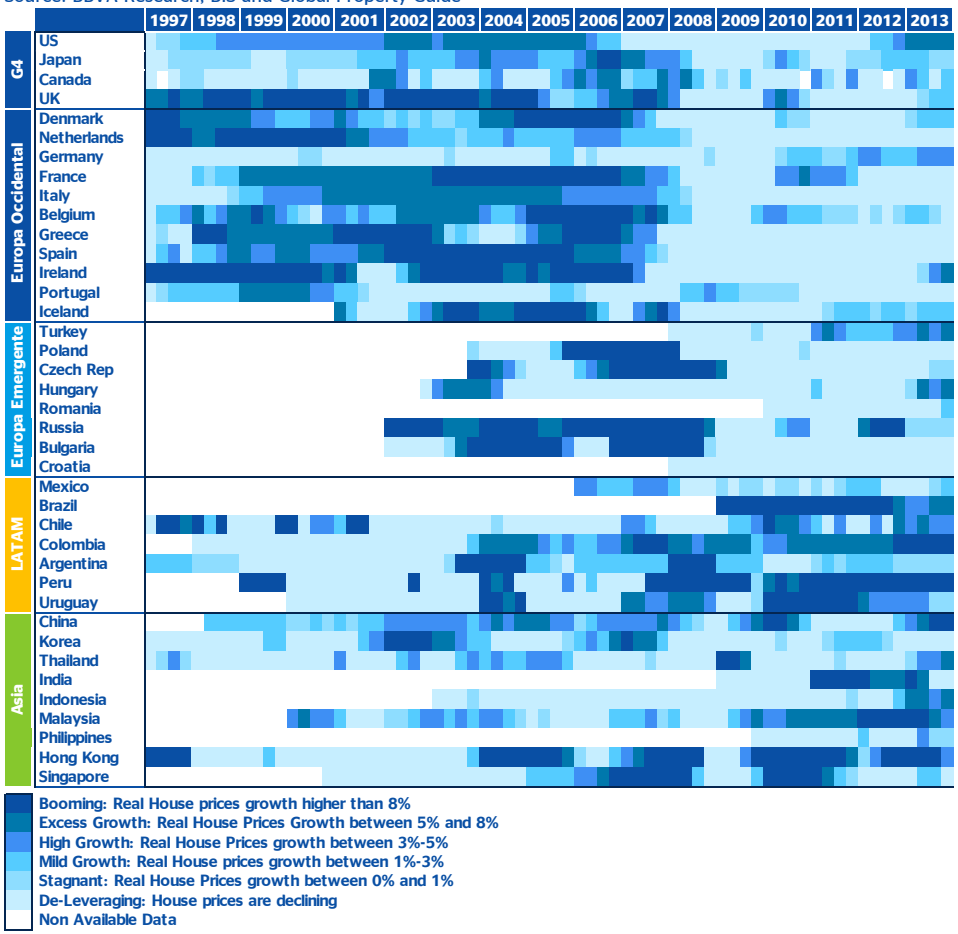
Section 3

Real Housing Prices Pulse

Real housing prices colour map (1997-2013 Q4)

(yearly change of real housing prices)

Source: BBVA Research, BIS and Global Property Guide



- Real housing prices growth in **US continue to gain momentum**. **Germany continues to lead housing prices growth in Europe**
- Similar to the growth of private credit, the housing market situation in EM Europe has **two clear groups**: While **prices have been growing faster in Turkey and Hungary, prices are stagnant or declining in the rest of the countries**.
- In **Latin America**, **prices are stagnant or declining in Mexico, Argentina and Uruguay**. By contrast, **real housing prices are growing faster in Colombia and Peru** and to a lesser extent in Chile
- **Housing Prices continue to surge in China. Growth is fast but decelerating in Indonesia, Philippines and Hong Kong.** Finally, housing prices growth is accelerating in Thailand and Malaysia.

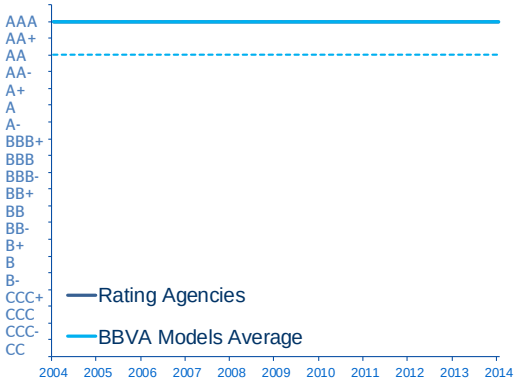
Section 3

Regional Risk Update: Western Europe

Europe Core: Sovereign Rating

(Rating agencies and BBVA scores +-1std dev)

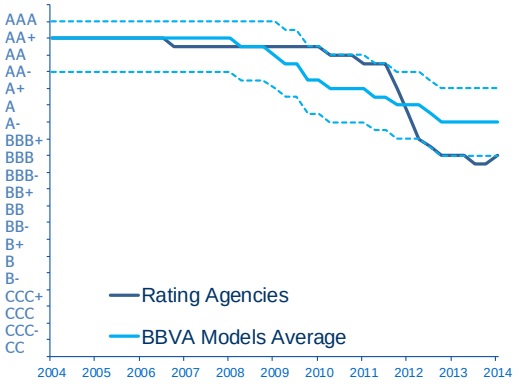
Source: Standard & Poors, Moody´s, Fitch and BBVA Research



Europe Periphery I: Sovereign Rating

(Rating agencies and BBVA scores +-1 std dev)

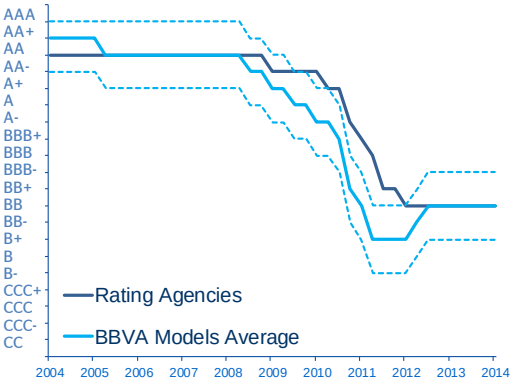
Source: Standard & Poors, Moody´s, Fitch and BBVA Research



Europe Periphery II: Sovereign Rating

(Rating agencies and BBVA scores +.1 std dev)

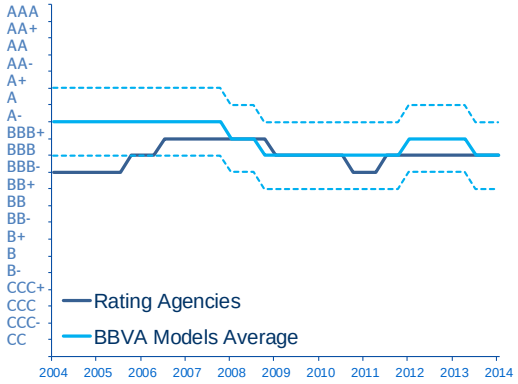
Source: Standard & Poors, Moody´s, Fitch and BBVA Research



EM Europe: Sovereign Rating

(Rating agencies and BBVA scores)

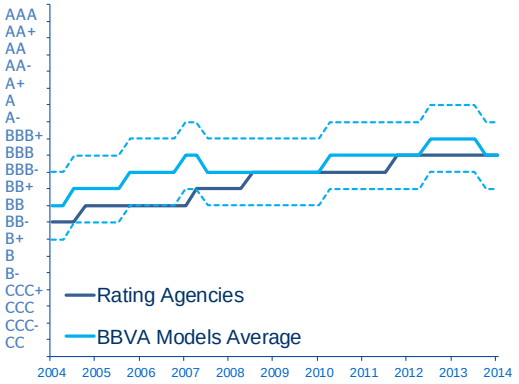
Source: Standard & Poors, Moody´s, Fitch and BBVA Research



Latam: Sovereign Rating

(Rating agencies and BBVA scores)

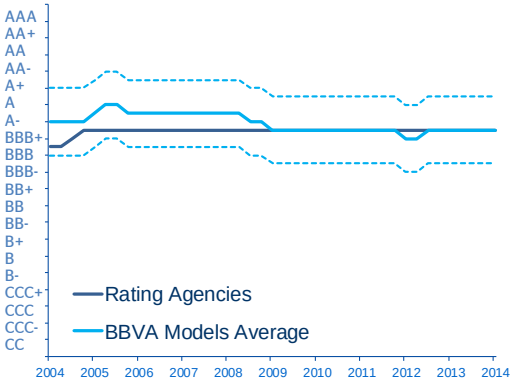
Source: Standard & Poors, Moody´s, Fitch and BBVA Research



Emerging Asia: Sovereign Rating

(Rating agencies and BBVA scores)

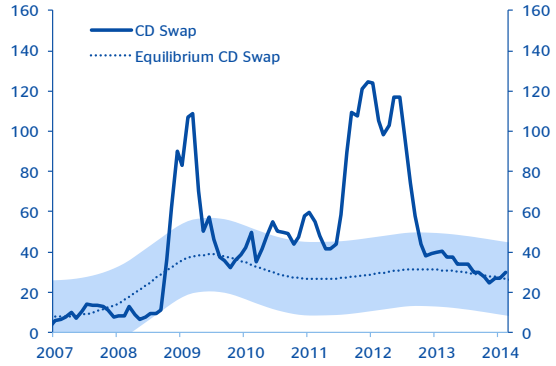
Source: Standard & Poors, Moody´s, Fitch and BBVA Research



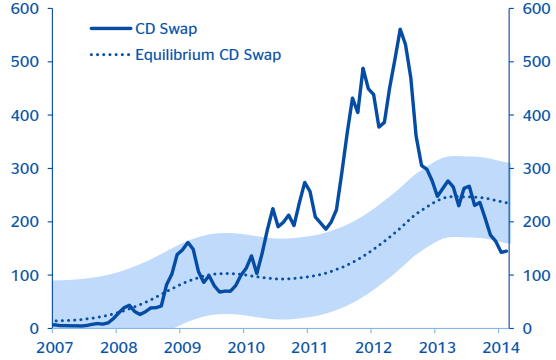
Section 3

Regional Risk: CD Swaps Update

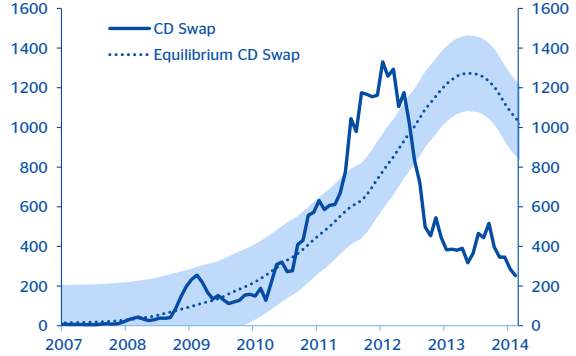
Europe Core: CD Swap 5 year
(equilibrium: average of 4 alternative models + 0.5 Standard deviation)



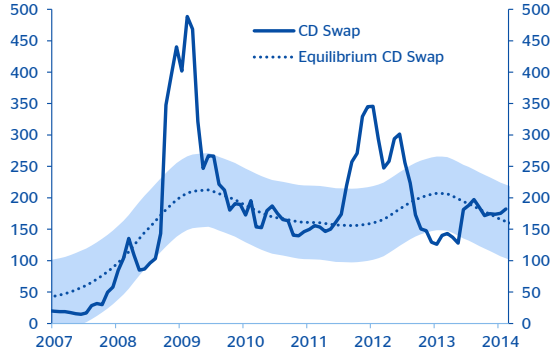
Europe Periphery I: CD Swap 5 year
(equilibrium: average of 4 alternative models + 0.5 Standard deviation)



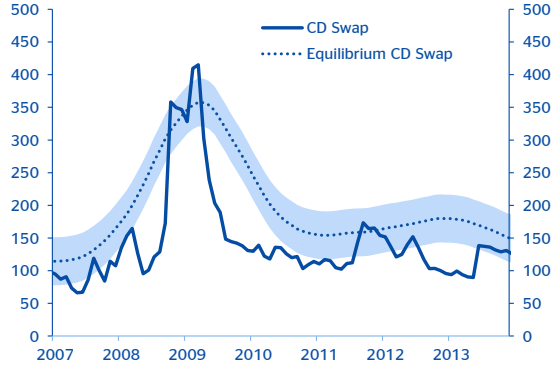
Europe Periphery II: CD Swap 5 year
(equilibrium: average of 4 alternative models + 0.5 Standard deviation)



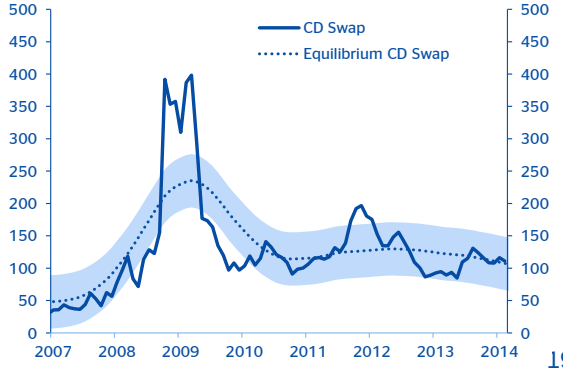
EM Europe: CD Swap 5 year
(equilibrium: average of 4 alternative models + 0.5 Standard deviation)



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* 2014: 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 2013-17	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	-1.2	-1.8	107	-1.9	105	-0.2	24	18	34	2.6	1.5	6.9	11.0	7.0	26.5	78	81	58	-0.6	-1.4	-1.6
Canada	-1.8	0.0	86	-3.5	72	-6.7	17	13	25	1.5	1.5	7.3	3.5	0.4	9.6	95	55	108	-1.1	-1.9	-1.8
Japan	-6.0	-1.4	242	1.5	43	-23.6	58	49	8	1.5	2.2	3.7	3.1	1.2	56.7	66	144	46	-0.9	-1.6	-1.3
Australia	-1.6	-0.6	29	-3.3	81	-7.9	6	3	55	2.9	2.5	5.3	2.6	3.9	14.8	111	48	122	-1.0	-2.0	-1.7
Korea	1.1	-1.6	35	1.4	32	7.3	1	3	14	3.6	2.7	3.1	0.7	-1.0	0.7	84	118	130	-0.2	-0.5	-1.0
Norway	-8.4	-2.0	34	9.7	142	-7.0	-7	4	42	2.0	1.8	3.1	-2.0	3.6	22.7	87	126	110	-1.3	-2.2	-1.9
Sweden	-1.2	-1.4	42	4.5	184	0.0	5	4	54	2.3	1.6	7.4	2.0	-1.3	20.7	86	89	299	-1.2	-2.3	-1.9
Denmark	0.1	1.1	48	5.1	195	0.3	10	7	41	1.5	1.9	6.2	-0.9	1.3	24.1	138	91	397	-0.9	-2.4	-1.9
Finland	-0.6	-1.0	60	5.1	195	1.9	8	6	92	1.5	1.9	6.2	2.2	-6.7	26.5	67	93	154	-1.4	-2.2	-1.9
UK	-1.8	-0.2	95	-2.5	383	5.3	12	6	33	2.5	2.3	3.8	-13.0	2.7	14.4	91	102	106	-0.4	-1.6	-1.7
Austria	0.1	0.0	75	3.4	220	2.3	9	6	83	1.6	1.8	4.9	-4.5	5.9	6.1	54	91	155	-1.3	-1.3	-1.8
France	-0.3	-0.5	95	-2.0	210	0.5	18	13	61	0.7	1.5	10.8	-3.2	-0.2	18.0	56	155	142	-0.6	-1.4	-1.4
Germany	2.0	0.3	78	6.9	166	1.9	8	8	60	1.7	1.8	6.8	-5.8	3.6	25.5	57	90	68	-0.8	-1.8	-1.6
Netherlands	1.2	0.4	76	9.9	318	1.9	12	9	56	0.3	1.3	8.9	-7.6	-5.8	17.2	125	92	117	-1.2	-2.1	-1.8
Belgium	1.3	1.1	101	-1.6	238	1.7	19	16	60	1.0	1.2	8.5	-0.7	-0.1	25.8	58	199	74	-0.9	-1.6	-1.4
Italy	5.0	2.2	133	1.0	120	1.3	28	25	36	0.2	1.3	12.8	-3.5	-6.0	16.6	45	115	91	-0.5	0.0	-0.4
Spain	2.0	0.7	85	1.6	178	1.5	21	14	37	0.9	0.5	25.6	-14.1	-3.1	21.4	78	175	139	0.0	-1.0	-1.0
Ireland	0.7	0.8	121	4.4	1033	-0.1	11	5	66	1.7	1.2	12.3	-16.7	6.0	33.6	101	285	139	-0.9	-1.4	-1.7
Portugal	1.7	1.3	125	-0.1	242	0.2	22	18	65	0.3	1.0	16.2	-9.9	-2.8	15.6	91	152	157	-0.7	-0.9	-1.0
Greece	5.4	1.0	174	-2.1	216	-1.7	25	17	80	-0.7	-0.4	28.0	5.3	-5.0	28.1	66	72	118	0.2	0.3	-0.4

*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* 2014: 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 2013-17	Gross Public Debt (1)	Current Account Balance (1)	External Debt (1)	RER Appreciation (2)	Gross Financial Needs (1)	Reserves to Short Term External 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)
Bulgaria	-0.1	1.9	19	0.9	93	0.7	2	1.5	44	2.7	1.6	9.6	-1.3	-9.0	42.3	24	98	101	-0.3	0.2	0.1
Czech Rep	-0.3	0.1	49	-1.8	53	-8.0	12	8	32	2.3	1.8	7.3	0.5	0.6	-4.8	33	50	84	-1.0	-0.2	-1.0
Croatia	-2.8	1.7	62	-3.9	110	-1.4	11	2.4	34	0.7	2.5	19.6	-2.8	-7.3	3.1	39	36	100	-0.6	0.0	-0.2
Hungary	1.8	1.6	80	1.6	142	-3.0	20	1.6	63	1.8	3.0	10.2	1.2	5.9	2.2	30	92	153	-0.7	-0.3	-0.6
Poland	-0.2	-0.2	50	-1.4	70	0.3	9	1.4	53	2.8	2.0	13.4	0.5	-2.9	8.1	36	83	105	-1.0	-0.6	-0.7
Romania	0.4	-0.9	38	-2.5	80	0.8	10	1.6	56	2.2	2.9	4.4	-3.5	1.6	26.1	21	52	112	-0.1	0.3	0.0
Russia	0.5	-2.1	15	1.1	32	0.6	2	4.7	24	2.8	5.9	6.0	6.0	0.7	2.0	14	35	121	0.8	1.0	0.8
Turkey	0.6	-0.8	35	-6.2	44	0.6	11	1.0	31	3.5	5.4	9.4	8.9	6.5	-13.3	15	36	118	1.2	-0.2	0.0
Argentina	-1.4	-14.6	46	-0.2	33	-14.4	11	1.4	36	1.3	22.3	7.4	1.2	1.0	88.9	9	--	77	-0.1	0.5	0.7
Brazil	2.0	3.0	69	-3.5	15	-13.5	19	12.2	5	2.5	5.9	5.7	4.6	6.6	-15.5	25	38	126	-0.1	0.1	0.1
Chile	-0.7	0.1	13	-3.0	42	-4.4	1	1.1	17	4.0	2.6	6.0	2.7	3.2	-14.0	30	49	179	-0.3	-1.6	-1.4
Colombia	1.0	1.6	32	-3.2	23	-4.9	4	3.4	30	4.2	3.0	10.0	2.7	8.6	-11.2	16	25	186	1.4	0.4	0.4
Mexico	-1.1	0.2	46	-1.5	29	2.6	12	3.0	37	3.5	3.0	4.6	2.4	1.1	-0.7	15	29	77	0.7	0.4	0.6
Peru	-0.3	-2.3	18	-5.2	31	-8.7	2	8.0	62	5.6	2.4	5.9	2.7	14.4	-23.6	12	22	89	0.9	0.4	0.6
China	-0.4	-6.3	21	2.5	7	10.7	6	6.1	...	7.6	3.3	4.0	10.6	9.6	-10.9	34	86	158	0.5	0.5	0.5
India	-3.3	1.1	68	-2.5	18	-11.4	12	3.0	8	5.1	8.5	11.8	-5.9	-9.4	9.0	10	43	77	1.2	0.6	0.1
Indonesia	-0.9	-4.1	27	-3.0	25	-15.5	4	2.0	59	5.8	5.4	5.8	0.3	5.6	-1.0	18	19	93	0.6	0.7	0.6
Malaysia	-2.1	-2.1	57	4.5	33	-1.4	10	4.5	30	5.1	2.9	3.3	6.0	4.9	10.5	96	--	91	0.0	-0.3	-0.5
Philippines	0.5	-2.1	39	2.5	26	3.8	8	11.7	39	7.0	4.3	7.5	0.8	0.0	1.3	2	30	59	1.2	0.6	0.5
Thailand	-2.5	-2.3	48	-0.7	38	0.3	9	2.5	13	3.4	2.4	1.0	2.0	5.9	-6.7	72	54	99	1.2	0.3	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

Section 4

Special Topic: Potential spill overs from the Ukrainian-Russian Crisis

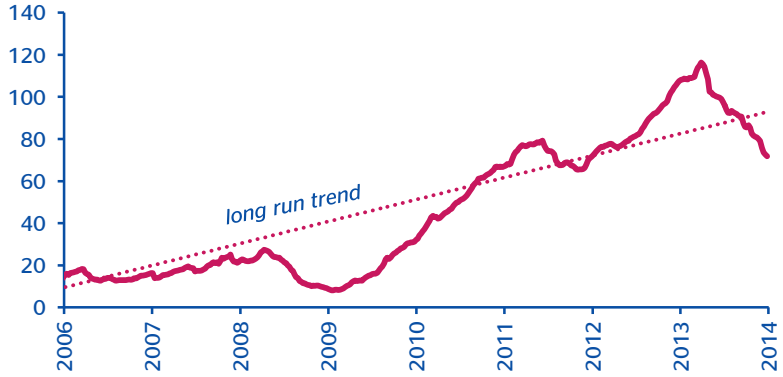
EU Energy Primary Dependence of Russian Gas*

Source Europe's Energy Security:Options and Challenges to Natural Gas Supply Diversification

Russia: Cumulative Net Capital Flows

(Cumulative since 2005, US$ bn)

Source: BBVA Research, IMF and EPFR



Following the increasing social unrest and change of Government in Ukraine and the Russian support to the referendum in Crimea, the turmoil in the region has led to an increase in political uncertainty in the area.

Markets have remained relatively calmed -so far- as the reaction has been confined to selective commodity prices (wheat but not gas) and discrete (although in some cases important) hikes in risk premia together with the depreciation of some currencies. Independently of the final result of the crisis, this could be transmitted into the rest of EM through different channels:

- **The trade an energy channel would have limited effects**. Trade links with Ukraine and Russia are not especially high except in some Eastern European countries and especially in the Baltics. However, the primary energy dependence from Russian Gas is higher is some countries (50% in Lithuania, 20% in Slovakia and Hungary,13% in Austria and 8.5%in Germany) warranting a significant impact on them.
- The **global risk aversion channel can have more serious effects given the systemic characteristics of Russia** among the emerging markets. Contrary to Ukraine, **Russia is one of the most portfolio integrated among the big emerging countries** with an important weight in the EM indexes. It s **big enough to prompt "margin calls"** that could exacerbate the financial market impact of the crisis. On the positive side **both the total EM net flows and particularly flows to Russia have already corrected most of the previous excesses** (see graph), limiting the margin for additional outflows.

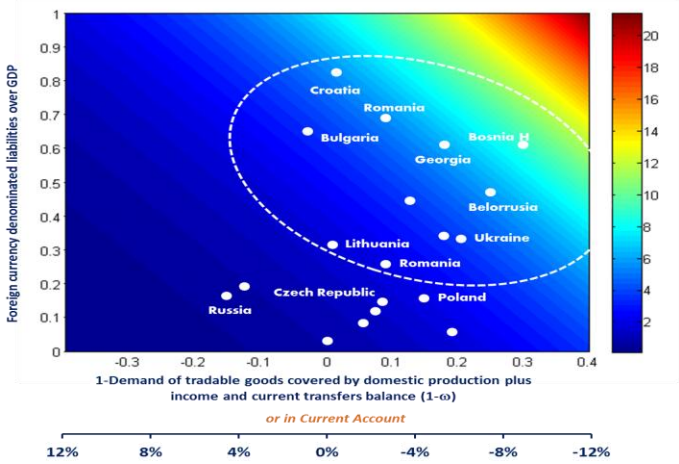
Section 4

Special Topic: Potential spill overs from the Ukrainian-Russian Crisis

BBVA Research Systemic Sudden Stop* Pressure Map

(based on CAC deficit and Domestic Liability Dollarization)

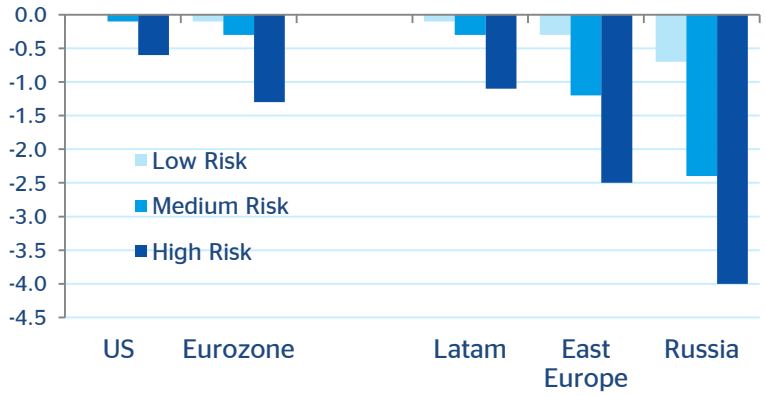
Source BBVA Research through Calvo, Izquierdo and Mejia (2008)



Ukraine-Russia crisis scenarios: 2014-15 GDP impact

(in % over baseline)

Source BBVA Research



- The banking channel could transmit crisis to the rest of the EM Europe and finally to Western European countries. This could happen due to the exposure of some financial systems (such as that of Austria, Italy, Germany & Nordic countries) as their Banking model (in which subsidiaries are not financially independent) facilitates bank links.
- The vulnerability of the region to systemic sudden stops is relatively high specially in some countries (Croatia, Romania, Bosnia and Ukraine), The graph in the left shows how the combination of current account deficits (horizontal axis) and high share of foreign currency loans (vertical axis) makes the Eastern European countries specially vulnerable to a sudden stop of capital flows (right bar).

In order to capture the **potential impact of the crisis we have introduced three alternative scenarios** in a multi-country macro-econometric model:

- In a low risk scenario (a negotiated solution with transitory impact) the cumulative impact 2014-15 in the world GDP is fairly low as the trade channel is low and the energy impact would be limited.
- The medium risk scenario, a conflict confined to Crimea with some spill overs to Global Risk Aversion (GRA), would lead to a more significant effects through the GRA channel and some extra spill-overs to the East European countries via banking distress and sudden stops.
- The high risk scenario includes a Russian meltdown with significant negative spill overs through high energy prices, a sharp increase in GRA and banking distress in Emerging Europe transmitting to headquarters in the west. This scenario would imply a recession in Western Europe anew and dramatic effects for EMs, particularly in Eastern Europe and Russia.

Note however that **Russia would be the main looser in terms of economic activity** impact in this case, what limits somehow the incentive to extend the conflict.

Section 4

Special Topic: A new early warning indicator of banking crises

- **We introduce a new leading indicator of banking crises based on an excess Credit-to-GDP ratio measure ("Credit Gap") resulting from the difference between the actual and the estimated structural levels** obtained from our BBVA model of financial deepening (see Credit Deepening: the healthy path)
- **Comparing its forecasting accuracy of our measure ("Credit Gap") against traditional measures of excess credit** used by international institutions as deviation from both linear (LT) and stochastic (HP) trends and simple credit to GDP changes **looks promising** . In fact, our credit gap outperforms the rest of indicators in both in-sample and out-of-sample forecasting error statistics (see EW: Excess Credit: Mind the Gap... but which one?)
- **Testing the probability of inclusion of our credit gap in a multivariate model of Banking Crisis through Bayesian Model Average techniques confirms our positive results. In this sense , our credit gap remains at the top of vulnerability indicators of banking crisis**

Forecasting accuracy statistics of alternative Credit Gap measures*

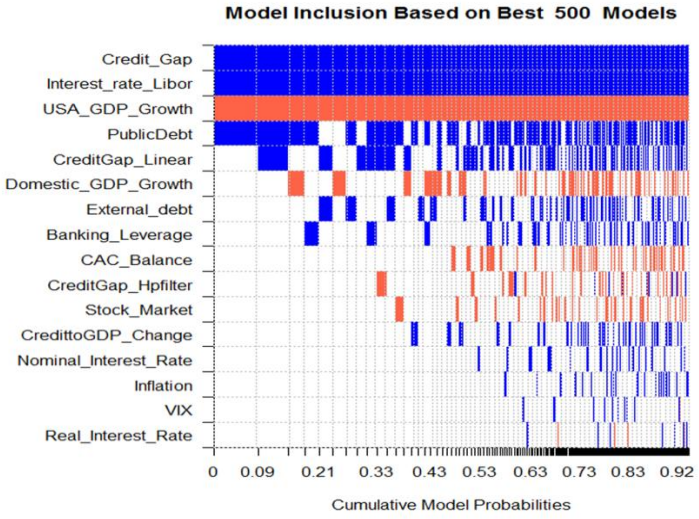
(The statistics are the average of 12 different regressions)
Source: BBVA Research

	Credit Gap	HP- Gap	Credit/GDP change	Credit/GDP change>5	LT-Gap
	Total in-sample 1990-2011				
z-stat	9.19	8.75	3.18	5.90	8.87
ps-R2	0.20	0.17	0.04	0.07	0.17
AUROC	0.77	0.74	0.63	0.64	0.74
NSR*	0.46	0.51	0.71	0.69	0.50
Loss*	0.60	0.63	0.77	0.76	0.63
	In-sample 1990-2007				
z-stat	5.93	6.24	0.03	2.44	6.31
ps-R2	0.12	0.13	0.02	0.02	0.13
AUROC	0.71	0.71	0.58	0.56	0.71
NSR*	0.53	0.59	0.80	0.79	0.60
Loss*	0.66	0.68	0.85	0.86	0.68
	Out-sample 2008-2011, All crises				
AUROC	0.84	0.73	0.51	0.67	0.74
NSR*	0.27	0.40	0.86	0.72	0.38
Loss*	0.52	0.73	0.90	0.77	0.73
	Out-sample 2008-2011, New crises				
AUROC	0.80	0.71	0.52	0.80	0.71
NSR*	0.33	0.39	0.80	0.43	0.37
Loss*	0.56	0.74	0.86	0.61	0.73

• z-stat: Z statistic.Ps-R2: pseudo R squared.AUROC: Area under receiver operating characteristic. NSR: Noise-to-Signal Ratio. Loss: (% type I error)+(% type II error)

Posterior Inclusion Probability of different Indicators in a model of Banking Crisis

(explanatory variables introduced with a 2 year lag, blue=positive sign, red=negative sign). Source: BBVA Research

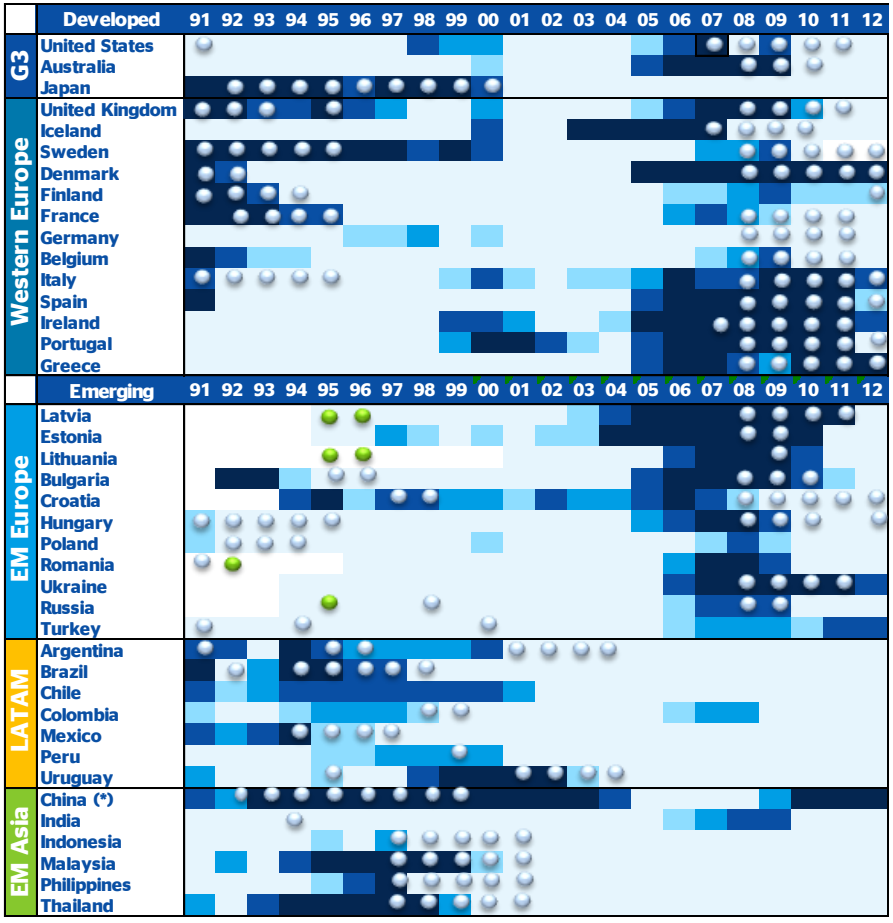


Section 4

Special Topic: A new early warning indicator of banking crises

Early Warning System: Probability of Banking Crisis (2yr ahead)

Source: BBVA Research



(*) China: Including own estimations of Shadow Banking

The inclusion of our credit gap in **a logit panel data model of probability of banking crisis** (for 68 countries) provide also positive results, confirming the leading indicator properties of our gap. The chart in the left shows the two years ahead probability of a crisis estimated with our preferred model for both Developed and Emerging Markets, The color of the cell denotes the probability of a crisis, with a darker color indicating a higher probability. The light blue dots denote actual crises. Among the results we highlight the following:

- **The model would have provided a correct early warning signal in most of the last financial crisis (2007-2008)** in developed markets. In many cases with several years of anticipation (Australia, UK, Iceland, Denmark).
- **The model seems to perform quite well in predicting the Emerging market crises of the mid-90s in Latin America and Asia and the crises in Eastern Europe after 2008**. In the case of the Asian crisis of 1997 the model anticipated the financial problems in South Korea, Malaysia, Indonesia, Thailand and Philippines.
- **It also anticipates well many isolated episodes such as different crises in some Latin American countries such as the Tequila crisis in México** (well in advance) and the episodes in the early 00s (Argentina, Ecuador, Peru, Uruguay, Dominican Republic) **and other crises in Eastern Europe in the early and mid-90s** (Hungary, Poland, Czech Republic, Bulgaria

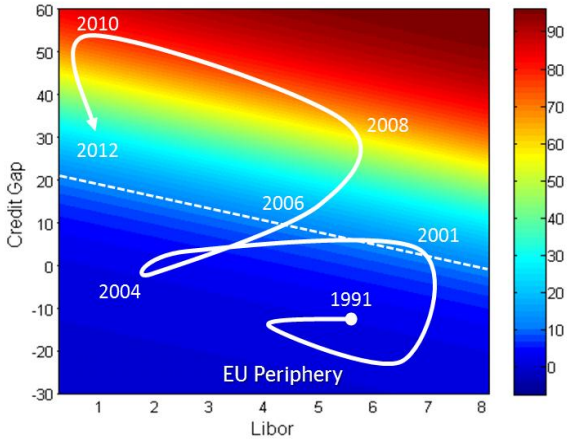
Section 4

Special Topic: A new early warning indicator of banking crises

- **The model allow us to estimate dynamic risk thresholds of our credit gap** in combination with other variables by calculating conditional **marginal probabilities of crisis**. In the following graphs we observe the different regions of probability corresponding to the combinations of values of the Credit Gap (in the vertical axis) and some of the explanatory variables (horizontal axis) as the US libor interest rate, the liquidity or credit to deposit ratio and the current account deficit. The color pattern oscillates between dark blue (zero or low probability of crisis as indicated in the right bar), the light blue colors around the risk threshold (the dash line representing the level triggering a warning signal) and the yellow- red area signaling significant risks.
- **Risk thresholds can change significantly with the level of global interest rates** (as it happened with the EU periphery) **so countries should enhance macro-prudential policies to prepare the for the interest rate increases** in western countries. Similarly, countries with high Credit-to-Deposit ratios and/or Current account deficits should make extra efforts in monitoring the performance of the private sector credit

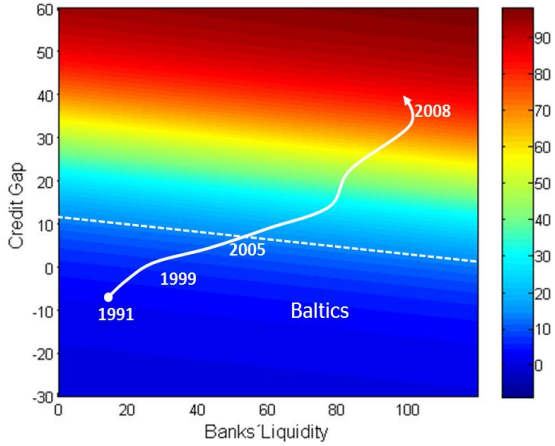
Banking Crisis Probability surface (Credit Gap and the Libor interest rate): EU Periphery

Source: BBVA Research



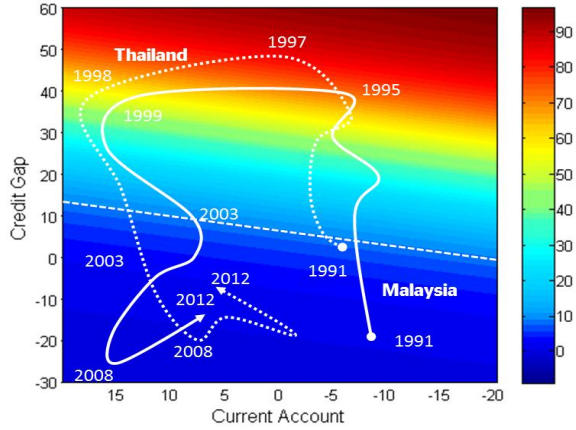
Banking Crisis Probability surface (Credit Gap and Credit-to-Deposits ratio): The Baltics

Source: BBVA Research



Banking Crisis Probability surface (Credit Gap and Current Account Balance): South East Asia

Source: BBVA Research



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 colour 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

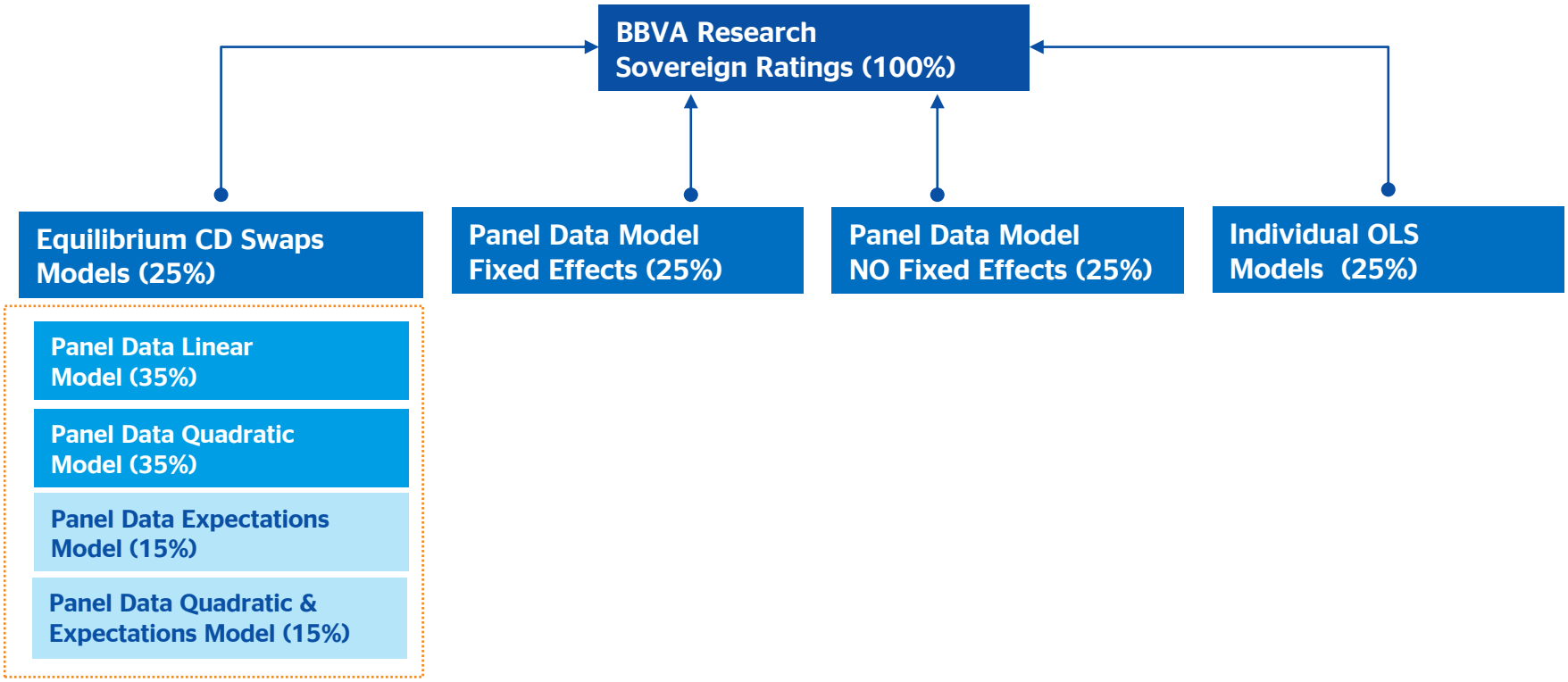
- **BBVA Research Sovereign Ratings Methodology:** We compute our sovereigns ratings by averaging four alternatives sovereign rating models developed at BBVA research:
  - **Credit Default Swaps Equilibrium Panel Data Models:** This model estimate actual and forecasts equilibrium levels of CD Swaps for 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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