BBVA Research

Country Risk Report

A Quarterly Guide to Country Risks – September 2015

Cross-Country Emerging Markets Unit

BBVA RESEARCH

Country Risk Report

Summary

Financial markets, global risk and capital flows

- **Financial turmoil extends throughout EMs** with a slump across different asset classes and a sharp increase in **global risk aversion** (VIX). **Some differentiation between DMs and EMs. Commodity exporters, assets and countries linked to China severely hit. Most EMs exposed.**
- **Portfolio reallocation from EMs to DMs intensified**. The **portfolio flows slump registered in EMs** were mainly **driven by EMs growth concerns, China and the expected Fed lift off (global factors dominance)**

Sovereign markets and ratings agencies update

- **Emerging markets' CDS suffered a strong surge as a response of financial market woes** during June and August due to **contagion from China and rising idiosyncratic risks in some countries.**
- **Brazil lost the investment grade** from S&P and suffered another downgrade from Moody's. **Slovakia upgraded by S&P.**
- The **market pressure for a new downgrade of Russia is still alive**. Potential downgrade risks from implicit quotes **raising also in China, Chile and Brazil.**

Our own country risk assessment

- **Rising concerns on China add to the expected reaction to a FED's tightening**. Thus, g**lobal drivers are behind the volatile and gloomy quarter in EMs equities, FX rates and commodities.**
- **Concerns about idiosyncratic risks are increasing among commodity exporters and those countries where external, political and geopolitical risks can become more serious**. **Big Emerging Markets will continue under scrutiny.** A more limited room to maneuver within the possible policy reactions from EMs' authorities.

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Country Risk Report

International financial markets, global risk aversion and capital flows

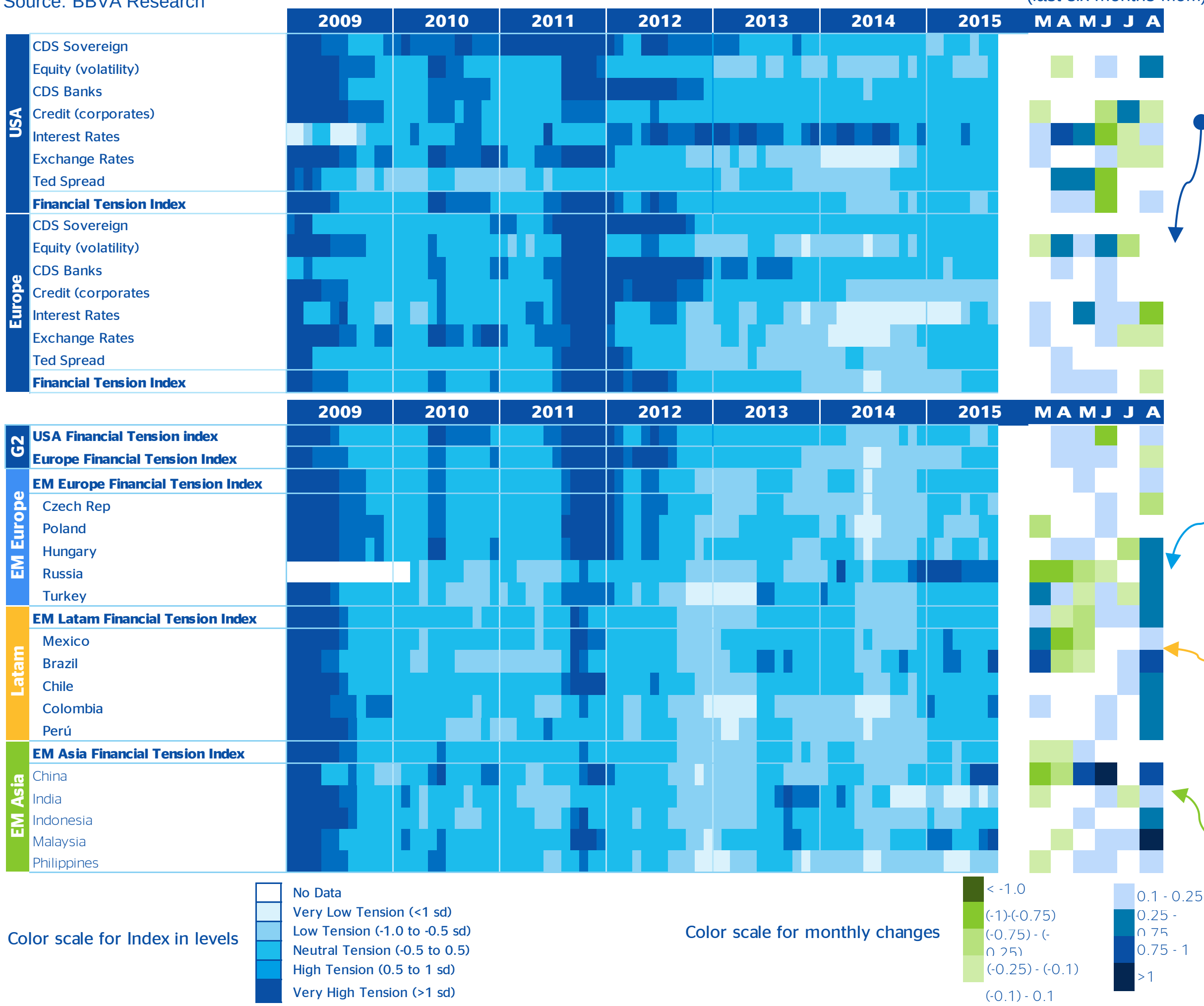
Financial tensions hit Emerging Markets

BBVA Research Financial Stress Map

Source: BBVA Research

Changes

(last six months MoM)



Financial Tensions in US and Europe remained more stable than in the rest with some volatility in equity markets due to concerns about China's economic outlook.

Tensions have surged in many EMs in June and August with a clear culprit in the former: China.

Afterwards, **tensions have spilled over across the board in EMs,** specially in Latam (Brazil and Colombia) and Asia.

Some differentiation in Asia appeared. Tensions have surged in China, Indonesia and Malaysia, but not so much in India and Philippines

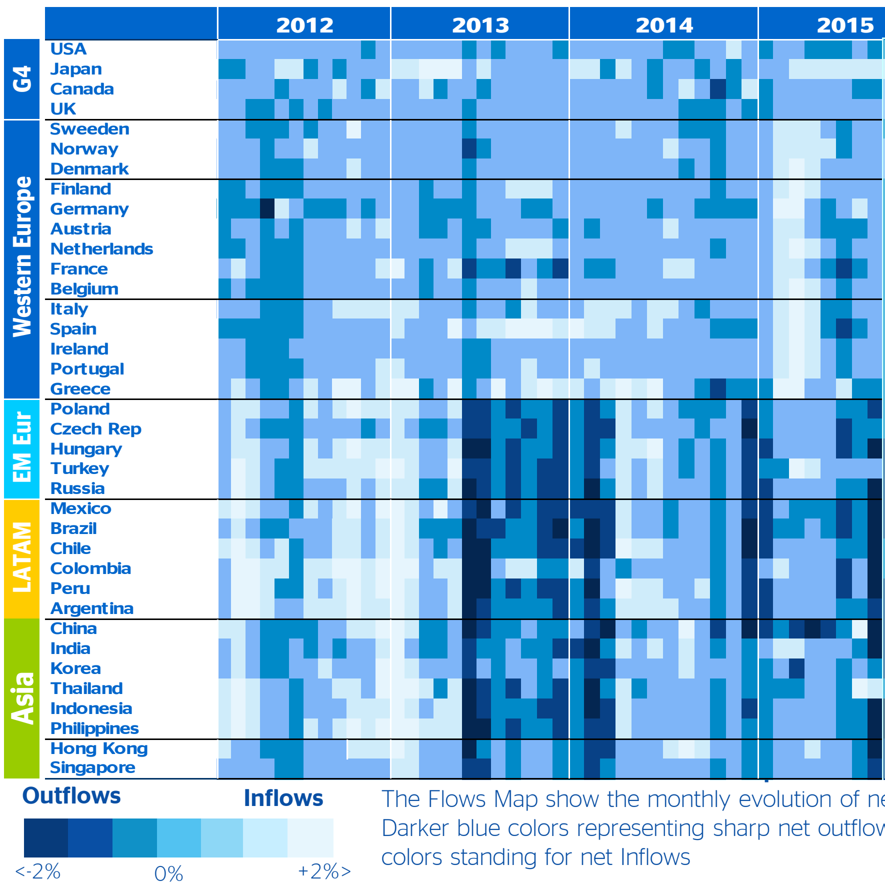
Country Risk Report

International financial markets, global risk aversion and capital flows

Portfolio reallocation from EM to DM intensified amid growth concerns

BBVA High Frequency Portfolio Flows Map

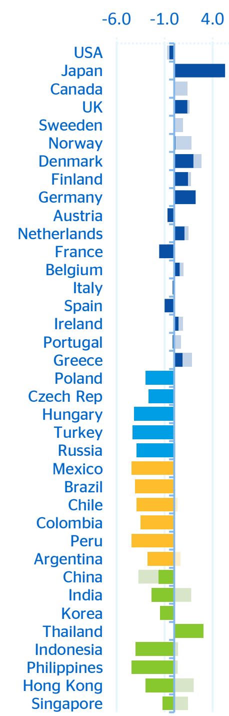
(% monthly change in net liabilities measured as net flows to total assets under management) Source: BBVA Research



The Flows Map show the monthly evolution of net inflows with Darker blue colors representing sharp net outflows and lighter colors standing for net Inflows

Flows 3Q15 vs. 2Q15 Graph and comment

(% quarterly change in flows, shades are previous values)

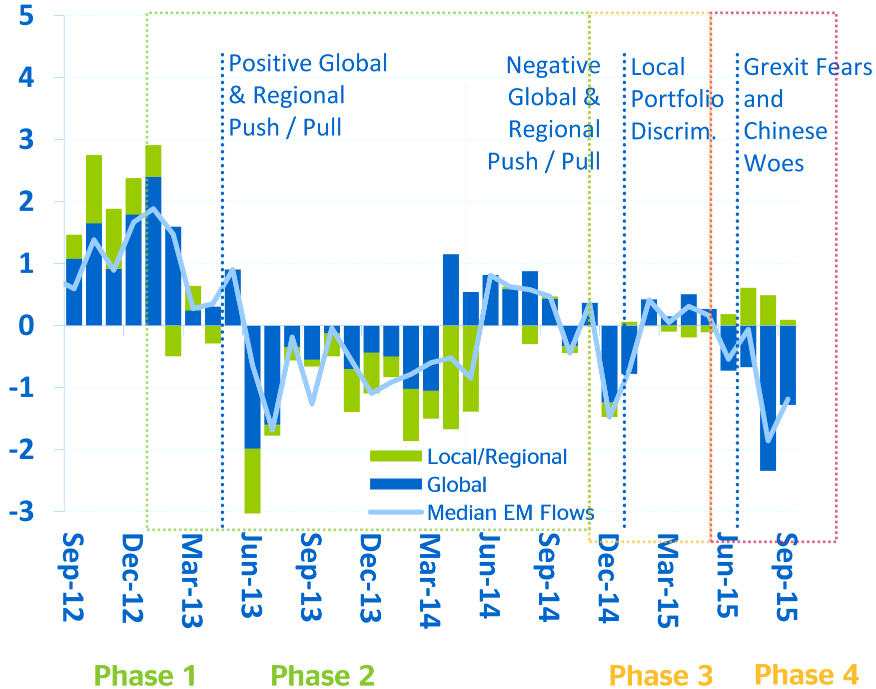


- **Risk-off mood** triggered by Chinese woes, Fed's lift-off and renewed and Greek fears.
- **Portfolio rotation from DM bond to DM Equity funds and aggregate contraction of EM flows increasingly dominated by local factors.**
- **Retail investors responsible for the downsizing in flow dynamics; Institutional remained more resilient.**
- **Strong but short-lived outflows from European bond markets in a temporary flight to quality** (valuation adjustment and Grexit). European equity flows also moderated

The EM Portfolio Slump in Emerging Markets mainly driven global factors (80%) but local factors now higher than in the last quarter

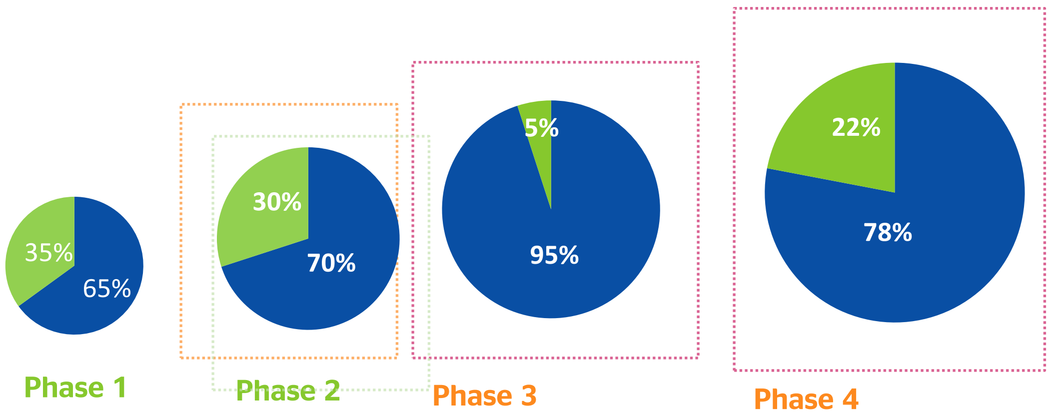
Emerging Markets Flows

(Median Emerging Market Portfolio Flow Decomposition, monthly change in %) Source: BBVA Research & EPFR



Emerging Markets Flows Drivers

(in % of total)
Source: BBVA Research

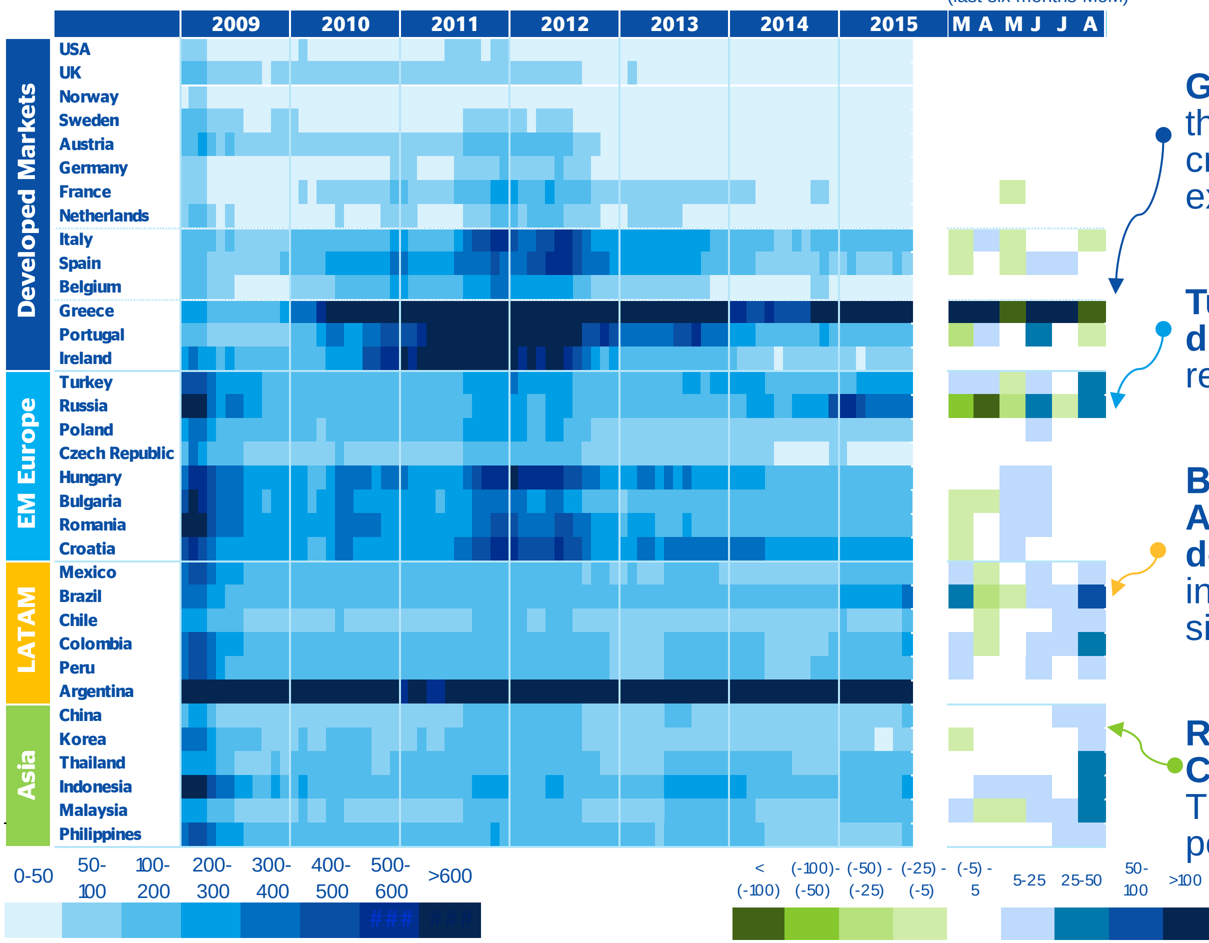


Strong rise in CDS in LatAm and EM Asia. EM Europe less affected, with the exception of Russia and Turkey

Sovereign CDS spreads

Source: Datastream and BBVA Research

Changes (last six months MoM)



Greek CDS surged and plunged in line with the evolution of the negotiations with its creditors. Spain, Italy and Portugal spreads experienced a minor contagion.

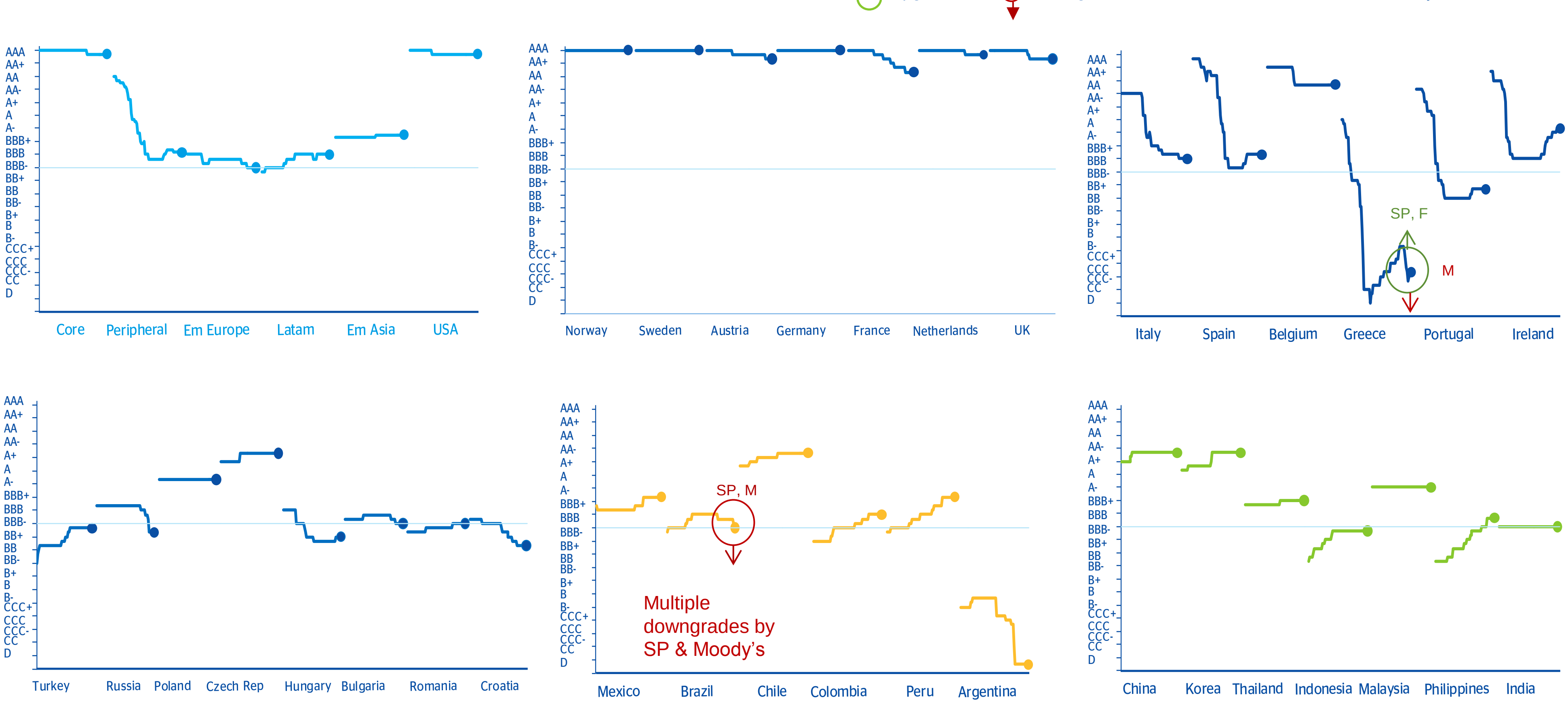
Turkish and Russian spreads rose strongly during August. The rest of Emerging Europe remained stable.

Brazil's CDS surged specially during August before and after being downgraded. Latam **suffered** a strong increase in most countries (at levels not seen since 2009)

Risk Premia increased also in Asia as China effect spilled-over the region, Thailand and Malaysia among the worst performers.

Country Risk Report
Sovereign markets and agency ratings
Brazil back to high-yield by S&P. Volatile rating changes in Greece

Sovereign Rating Index 2008-15
Source: BBVA Research by using S&P, Moody's and Fitch data



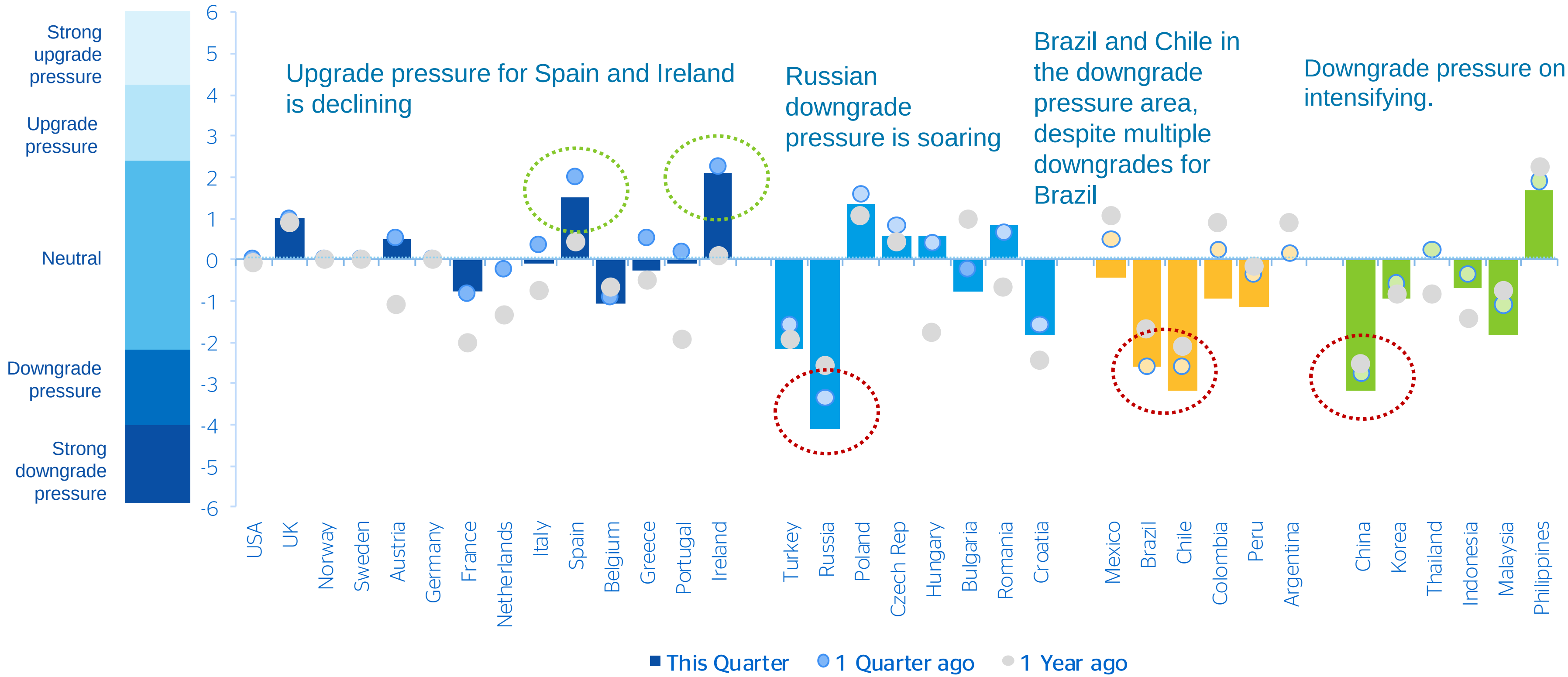
Sovereign Rating Index: An index that translates the three important rating agencies ratings letters codes (Moody's, Standard & Poors and Fitch) to numerical positions from 20 (AAA) to default (0). The index shows the average of the three rescaled numerical ratings.

Russia under pressure. The misalignment between ratings and quotes suggests some potential downgrades in LatAm

Agencies' rating downgrade pressure gap (Sep 2015)

(difference between CDS-implied rating and actual sovereign rating, in notches)

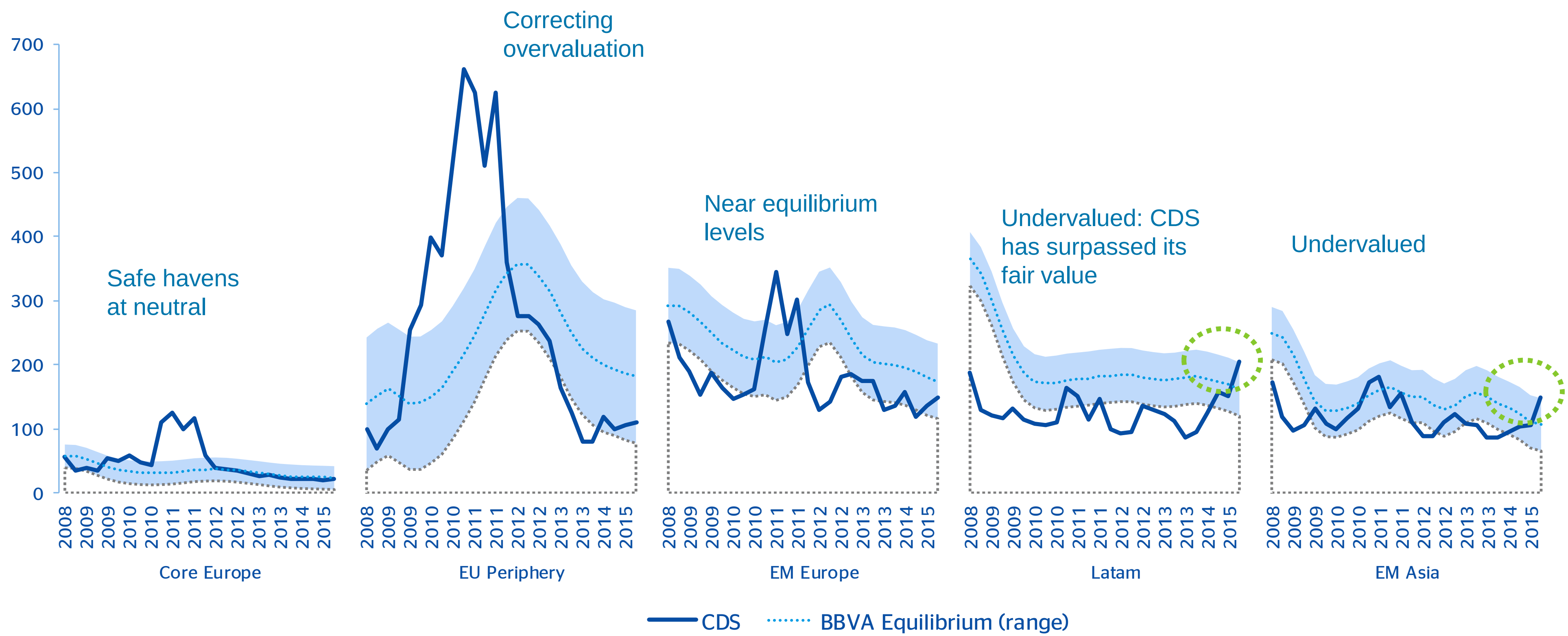
Source: BBVA Research



LatAm and EM Asia reversed above neutral equilibrium levels

CDS and equilibrium risk premium September 2015

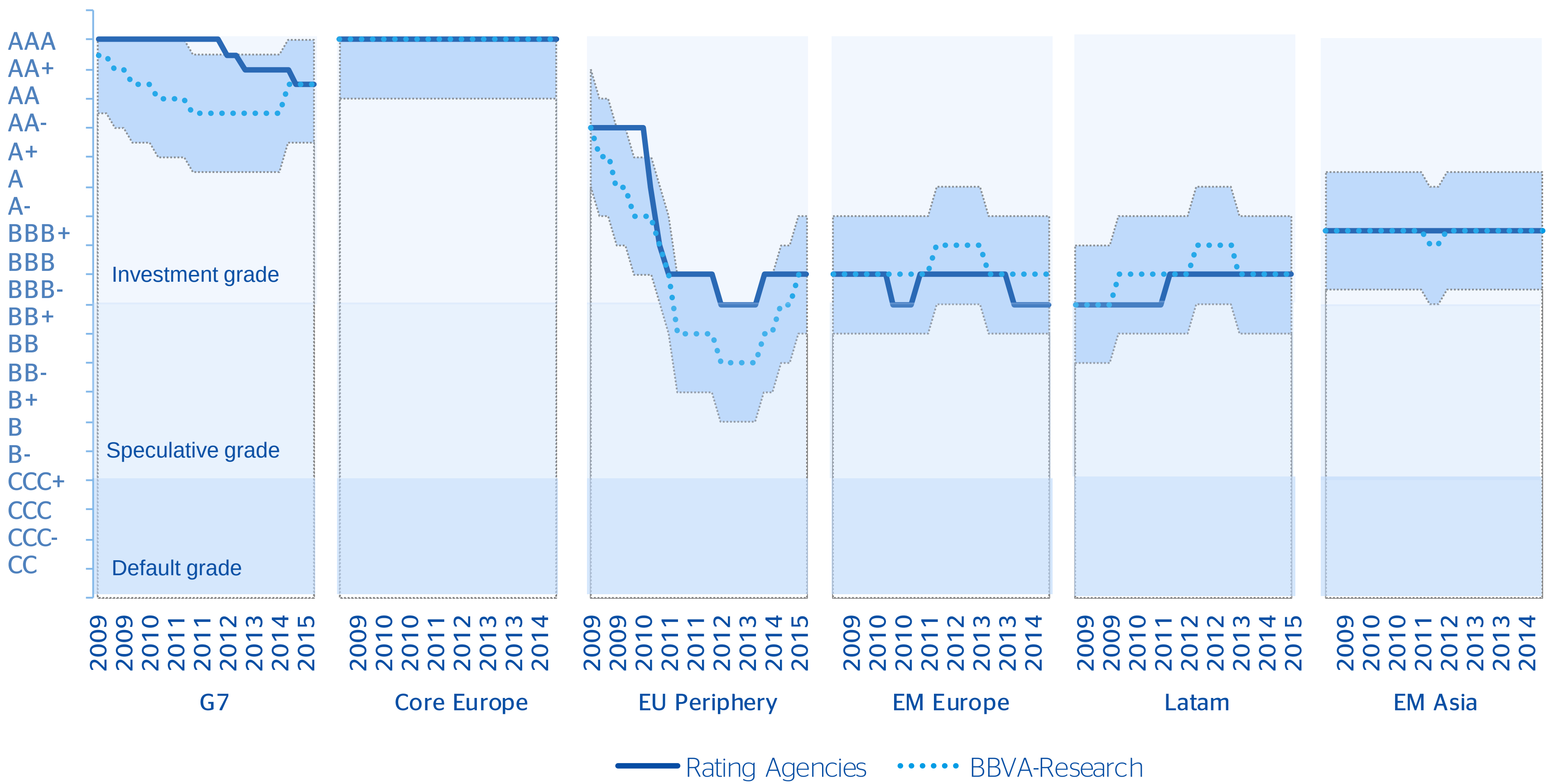
(equilibrium: average of four alternative models + 0.5 standard deviation)
*EU Periphery excludes Greece
Source: BBVA Research and Datastream



On a regional basis, most ratings in line with fundamentals

Agencies' Sovereign rating vs. BBVA Research

(Agencies' Rating and BBVA scores +/-1 std dev)
Source: Standard & Poors, Moody's, Fitch and BBVA Research



Country Risk Report

Macroeconomic vulnerability and risk assessment

Sluggish or negative credit growth in most regions. China's long lasting leverage, Turkey & Korea to monitor

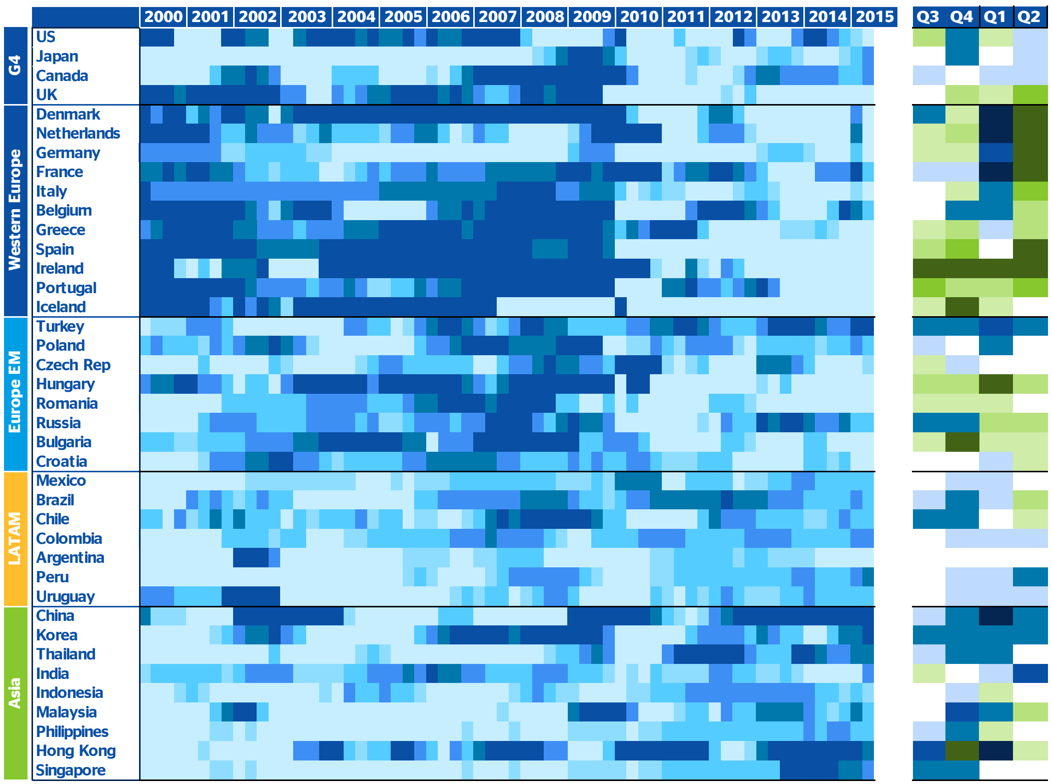
Private credit color map (2000-2015 Q2)

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

Source: BBVA Research and Haver

QoQ growth

Last four quarters up until Q2-2015



- Booming: Credit/GDP growth is higher than 7%
- Excess Credit Growth: Credit/GDP growth between 5%-7%
- High Growth: Credit/GDP growth between 3%-5%
- Mild Growth: Credit/GDP growth between 1%-3%
- Stagnant: Credit/GDP is declining betwen 0%-1%
- De-leveraging: Credit/GDP growth declining
- … Non Available

- Q/Q growth > 5%
- Q/Q growth between 3 and 5%
- Q/Q growth between 1.5% and 3%
- Q/Q growth between 0.5% and 1.5%
- Q/Q growth between -0.5% and 0.5%
- Q/Q growth between -0.5% and - 1.5%
- Q/Q growth between -1.5% and -3%
- Q/Q growth between -3% and -5%
- Q/Q growth < -5%

Leverage is stable in US and growing moderately in Japan and Canada. UK keeps deleveraging

Volatile data from Central Europe countries. Strong deleveraging after a previous quarter of strong growth

Turkey's leveraging process continues strongly. Russia's deleverages for a second quarter

First signs of credit adjustment in Brazil and Chile. Peru's leveraging accelerates

China leveraging at a "booming" pace long lasting (nearly 3 years). HK, Malaysia, Indonesia and Philippines are now deleveraging

Growth in housing prices loses pace across the board. HK, Turkey, Chile and Philippines are the ones to be monitored

Real housing prices color map (2000-2015 Q2)

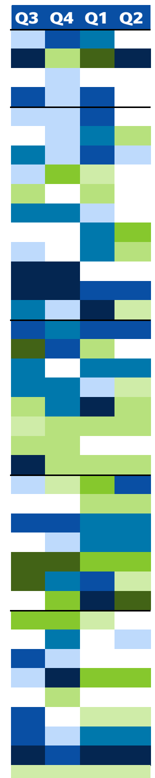
(yearly change of real housing prices YoY)

Source: BBVA Research, BIS and Global Property Guide

- Booming: Real House prices growth higher than 8%
- Excess Growth: Real House Prices Growth between 5% and 8%
- High Growth: Real House Prices growth between 3%-5%
- Mild Growth: Real House prices growth between 1%-3%
- Stagnant: Real House Prices growth between 0% and 1%
- De-Leveraging: House prices are declining
- Non Available Data

QoQ Growth

Last four quarters up until Q2-2015



- Q/Q growth > 3.5%
- Q/Q growth between 2% and 3.5%
- Q/Q growth between 1% and 2%
- Q/Q growth between 0.5% and 1%
- Q/Q growth between -0.5% and 0.5%
- Q/Q growth between -0.5% and - 1%
- Q/Q growth between -1% and -2%
- Q/Q growth between -2% and -3.5%
- Q/Q growth < -3.5%

Stagnant prices in US and Canada. **Growth is slowing down in UK**

Prices growth has cooled down from previous quarter in most European countries

Turkey and Czech Republic's prices growing rapidly

Chilean and Colombia housing prices growth losing steam

Chinese housing prices adjusts (nearly 8% in real terms in the last 12 months). **Prices keep growing fast in HK and Philippines**

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Country Risk Report

Macroeconomic vulnerability and risk assessment

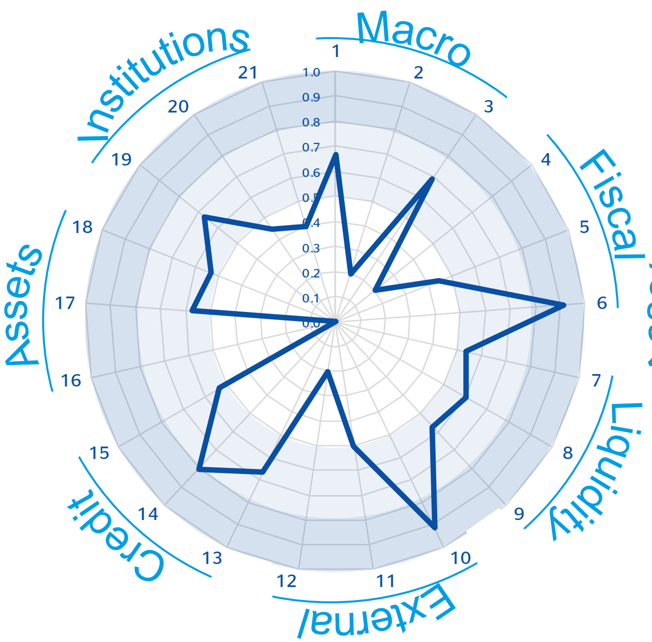
Fiscal vulnerability, private leverage and external risks still high in Advanced Countries

Developed countries: vulnerability radar 2015

(Relative position for the emerging developed countries. Max risk=1, Min risk=0)

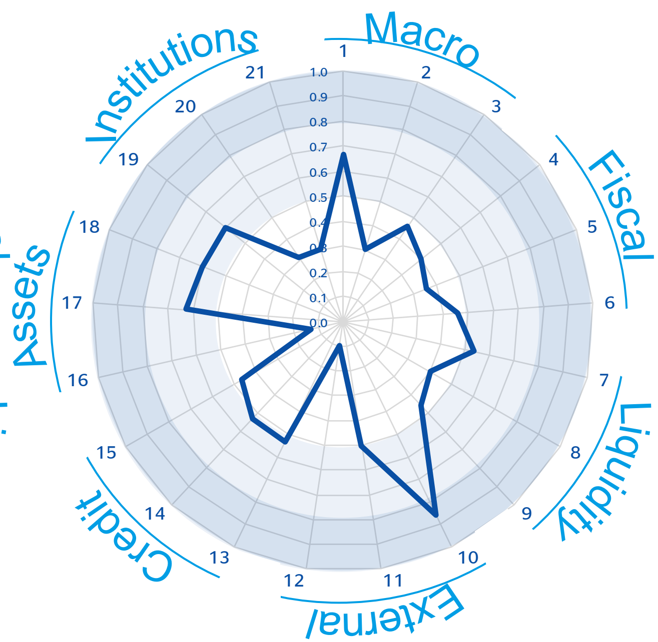
Source: BBVA Research

G7



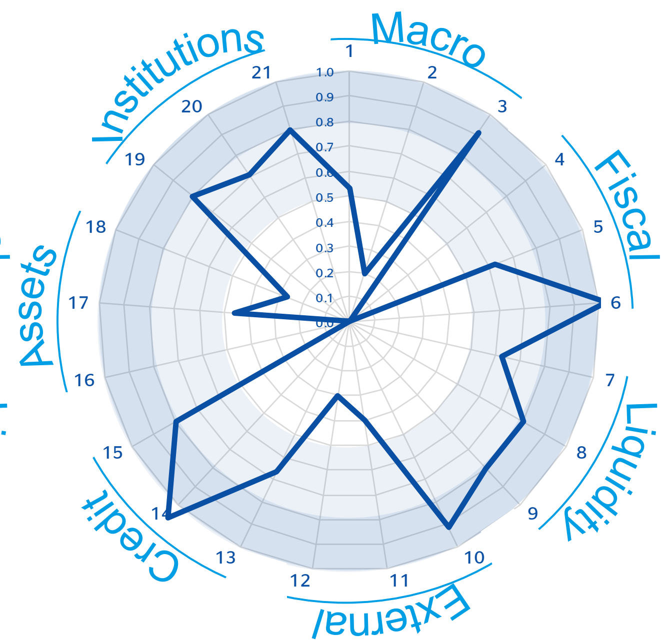
Public and external debt remain as the most important vulnerabilities

Core Europe



External debt levels are again the main concern

Periphery Europe



Unemployment, public debt and corporate debt still at worrisome levels.

High risk

Risk to monitor

Safe

Macro: (1) GDP (% YoY) (2) Prices (% YoY) (3) Unemployment (% LF)
Fiscal: (4) Structural balance (%) (5) Interest rate – GDP %YoY (6) Public debt (% GDP)
Liquidity: (7) Debt by non-residents (%total) (8) Financial needs (%GDP) (9) Financial pressure (% GDP)
External: (10) External debt (%GDP) (11) RER appreciation (%YoY) (12) CAC balance (% GDP)

Credit: (13) Household (%YoY) (14) Corporate (%YoY) (15) Credit-to-deposit (%)
Assets: (16) Private credit to GDP (%YoY) (17) Housing Prices (%YoY) (18) Equity (%)
Institutional: (19) Political stability (20) Corruption (21) Rule of law

Country Risk Report

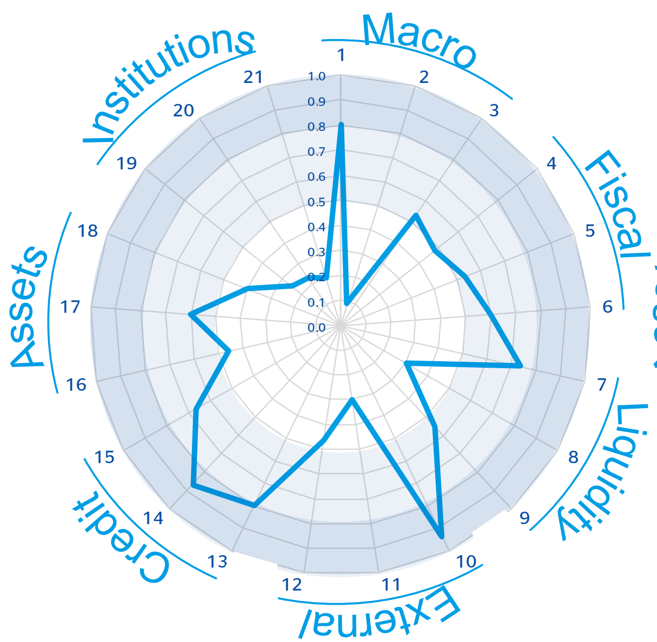
Macroeconomic vulnerability and risk assessment

External debt vulnerability back to the radar in EM Europe, Concerns about external problems in LatAm, and fiscal in EM Asia

Emerging countries: vulnerability radar 2015

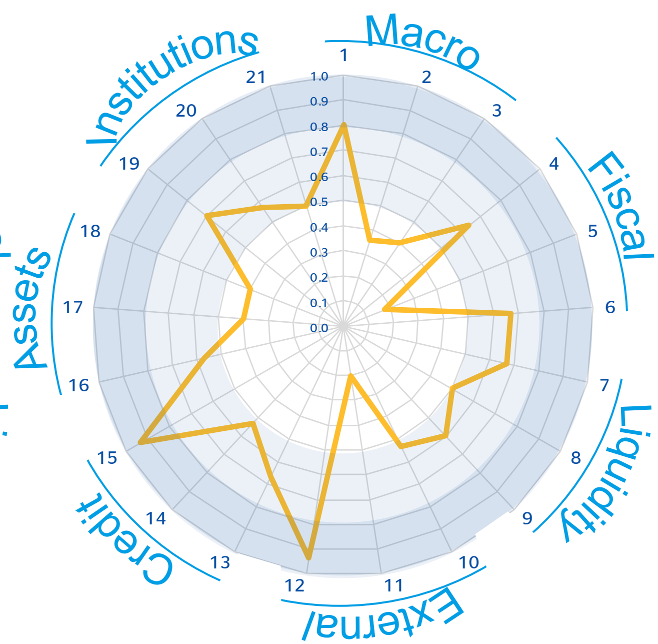
(Relative position for the emerging developed countries. Max risk=1, Min risk=0)
Source: BBVA Research

Emerging Europe



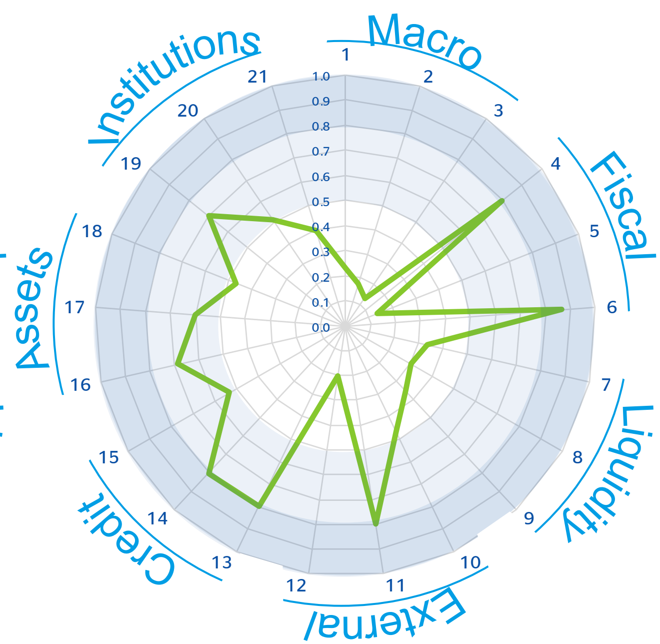
Once again, external debt is the most worrisome vulnerability together with corporate debt

LatAm



Current account balances and credit-to-deposits at high vulnerability levels

Emerging Asia



Public balances and public debt levels have increased fiscal vulnerability. Private leverage also at risky levels

High risk
Risk to monitor
Safe

Macro: (1) GDP (%YoY) (2) Prices (% YoY) (3) Unemployment (% LF)
Fiscal: (4) Structural balance (%) (5) Interest rate – GDP % YoY (6) Public debt (% GDP)
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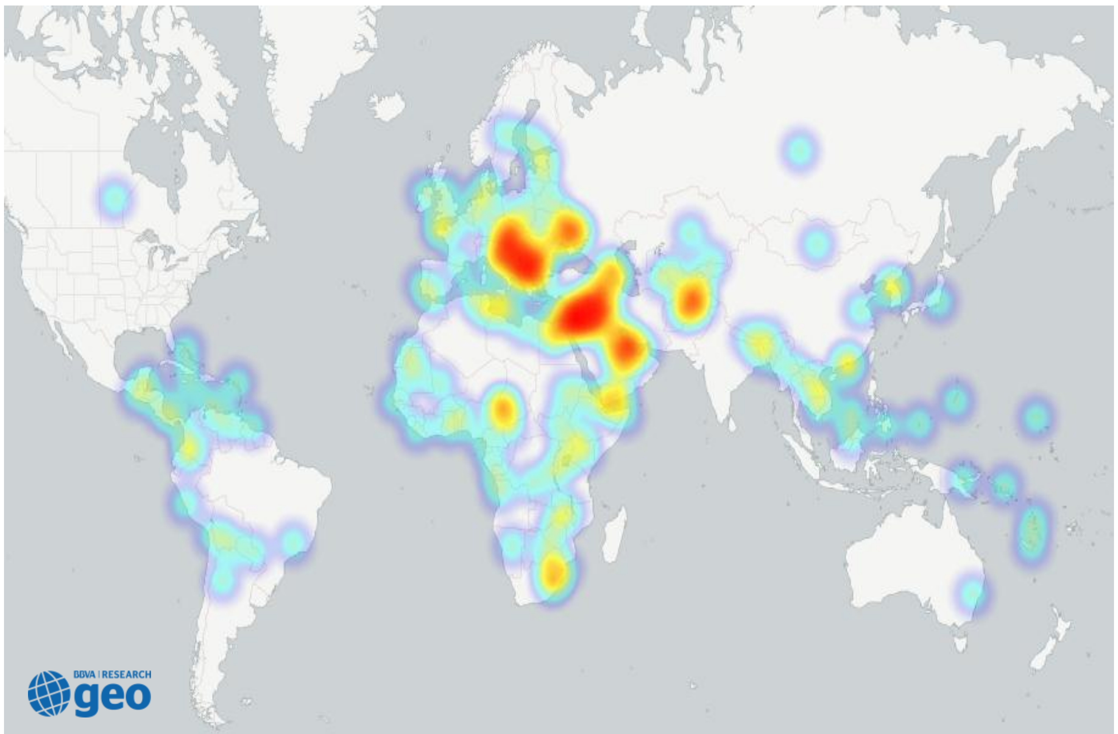
Institutional: (19) Political stability (20) Corruption (21) Rule of law

A complex framework in Europe’s ring of fire

BBVA Research World Conflict Heatmap (3Q15)
(Number of conflicts / Total events)



Source: www.gdelt.org & BBVA Research

ISIS continues its attacks in the MENA. Coalition forces efficiency highly favored by the Turkish decision to provide support through military bases.

The refugees crisis continue to escalate in Europe. Eastern Europe countries start to suffer from the massive flows of migrants from MENA

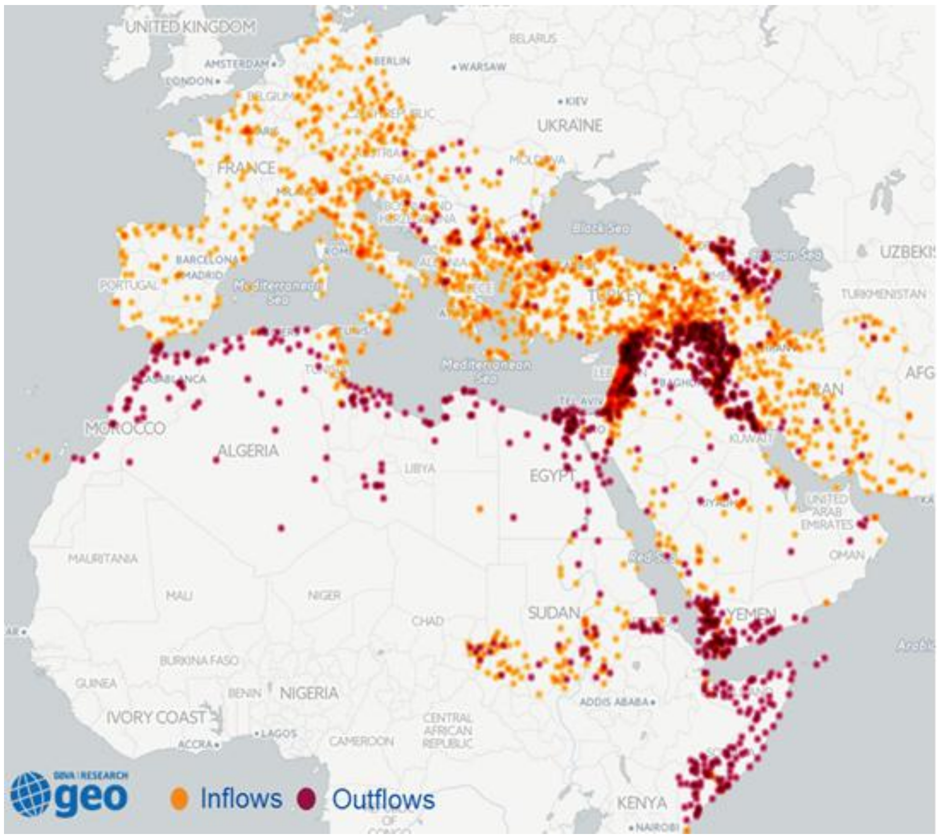
Fighting intensified in Ukraine to its strongest level since the agreement

Refugees crisis reinforces security problems in Europe

BBVA Research Refugees Flows Map (1H 2015)

(Number of media citations about refugees' inflows and outflows)

Source: www.gdelt.org & BBVA Research



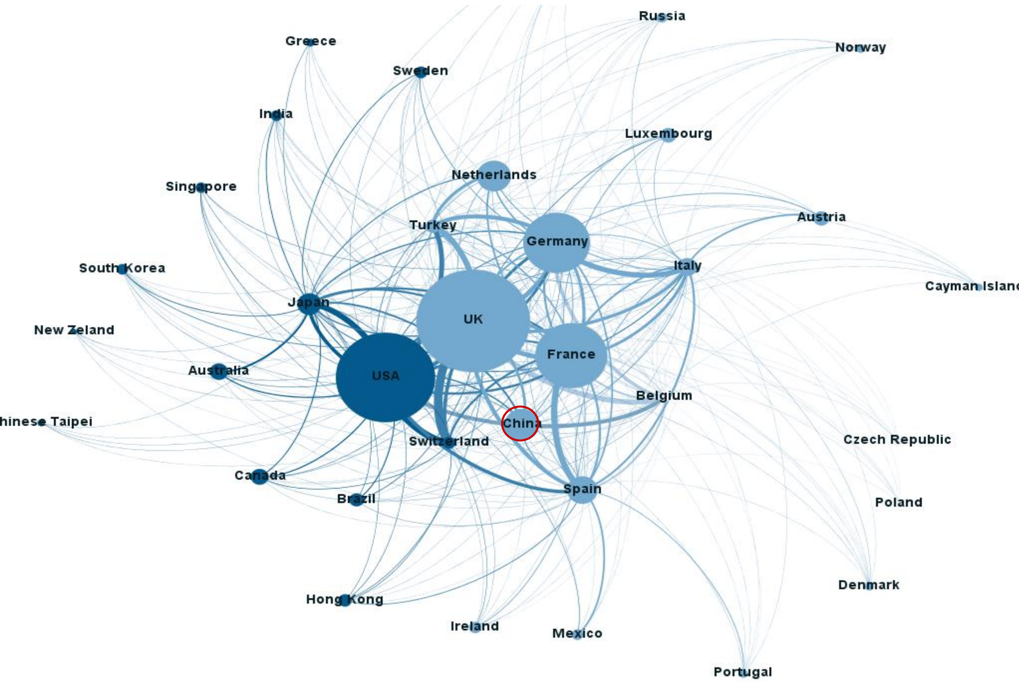
The Middle East & North Africa are facing complex and multiple emergency situations that are posing important humanitarian challenges for Europe

During the first half of 2015 around 350.000 refugees had reached southern Europe, but European emergency refugee distribution system only covers 160.000 of them.

Defining a more comprehensive and coordinated EU action plan to the migration crisis is urgent and crucial to avoid further economic and social consequences

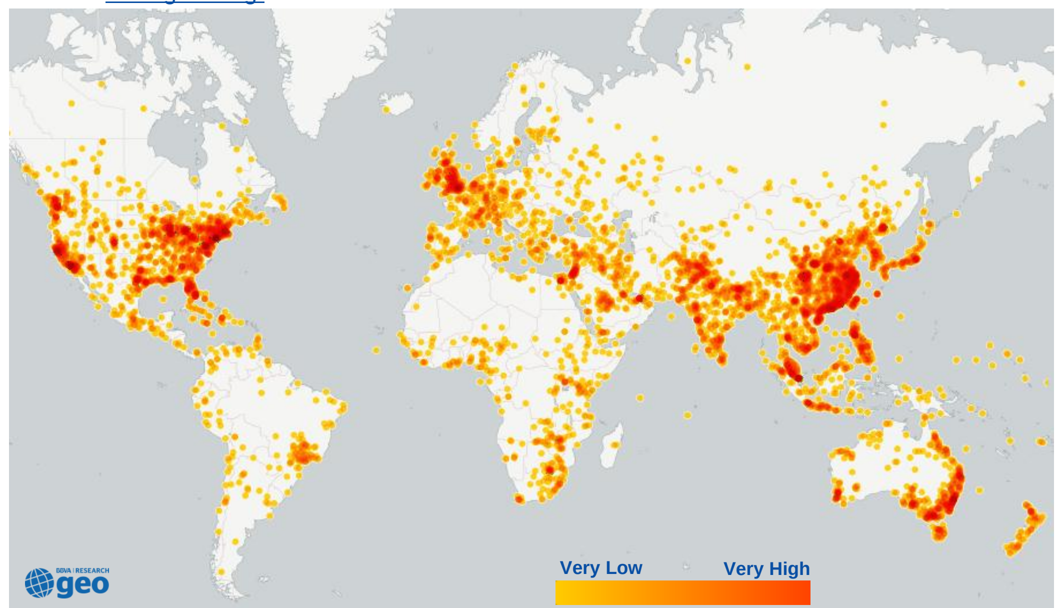
China's slowdown: financial & real economy spill-overs

Interconnectedness of World Banking lines
(Size and relationships of world interbank lines)
Source: BBVA Research and BIS Consolidated Banking Statistics Table 9E



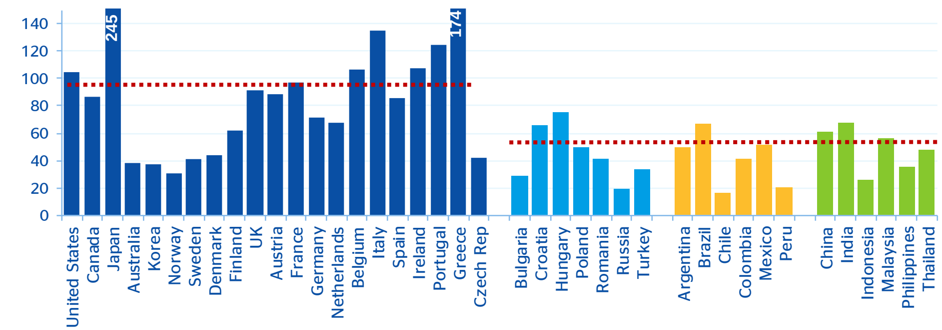
World sentiment about China's slowdown
(Media coverage about concerns of China's slowdown around the world)

Source: www.gdelt.org & BBVA Research

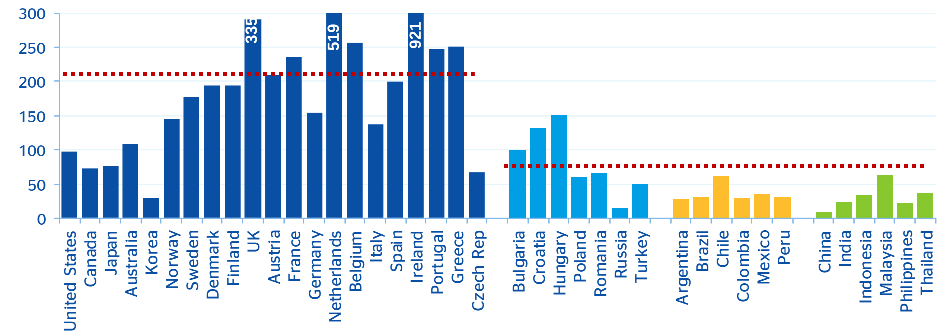


Public and private debt chart gallery

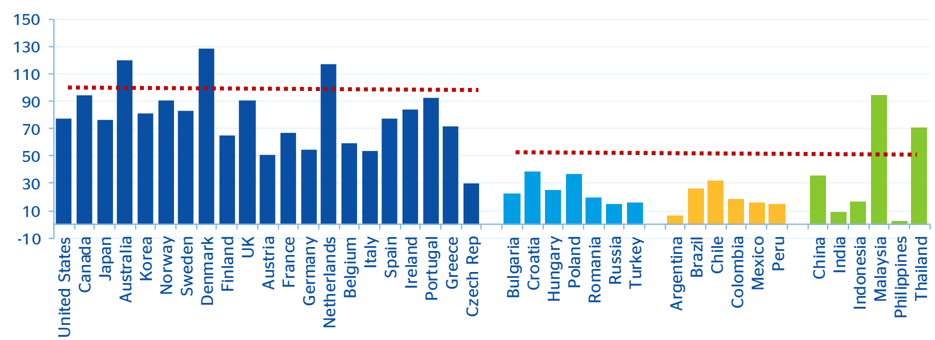
Gross Public Debt 2015
(% GDP)
Source: BBVA Research and IMF



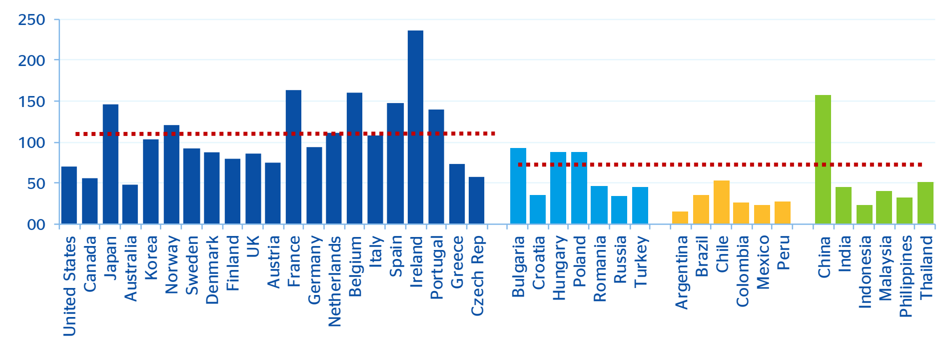
External Debt 2015
(% GDP)
Source: BBVA Research and IMF



Household Debt 2015
(% GDP)
Source: BBVA Research and BIS



Corporate Sector Debt 2015
(% GDP, excluding bond issuances)
Source: BBVA Research and BIS



Risk thresholds

Vulnerability indicators: developed economies

Vulnerability indicators* 2015: 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 2014-19	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	-1.8	-1.3	105	-3.3	97	13.7	20	14	34	2.9	0.5	5.3	-0.2	5.1	4.7	78	70	61	-0.6	-1.3	-1.6
Canada	-1.3	-0.1	87	-3.5	72	-10.1	12	12	22	2.2	1.0	7.0	3.0	4.0	-3.9	94	56	133	-1.0	-1.9	-1.8
Japan	-5.4	-0.8	246	2.6	77	-18.5	53	18	8	1.3	1.3	3.4	4.3	0.6	33.5	76	146	50	-1.0	-1.6	-1.3
Australia	-1.7	0.1	38	-2.8	108	-7.5	6	6	66	2.8	2.6	6.4	11.5	3.3	1.3	120	47	134	-1.0	-1.8	-1.7
Korea	-0.2	-1.2	37	7.8	30	9.3	3	9	13	2.7	0.8	3.7	8.7	2.4	3.6	81	103	98	-0.2	-0.5	-1.0
Norway	-9.5	-0.5	30	6.4	145	-8.9	-6	8	34	1.0	2.3	3.8	4.6	4.4	0.3	90	121	124	-1.3	-2.3	-1.9
Sweden	-1.1	-2.1	41	6.3	177	-8.4	7	12	45	2.7	0.4	7.7	-4.5	7.7	12.0	83	92	210	-1.1	-2.3	-1.9
Denmark	-1.2	-0.9	44	6.5	193	-2.8	9	26	43	1.6	0.8	6.2	-6.5	3.8	27.5	129	87	338	-0.9	-2.4	-1.9
Finland	-0.4	-0.7	62	6.5	193	-3.2	8	9	79	0.8	1.2	8.7	-7.8	1.2	9.3	65	80	147	-1.4	-2.2	-1.9
UK	-2.8	-0.8	91	-5.3	290	10.1	13	7	28	2.5	0.1	5.4	-6.7	5.5	-3.3	91	86	57	-0.5	-1.7	-1.7
Austria	0.9	0.7	89	3.1	209	-1.0	7	5	76	0.9	1.1	5.1	0.1	1.7	-3.6	51	74	102	-1.3	-1.5	-1.8
France	-0.3	-0.8	97	-0.9	236	-4.0	17	13	61	1.3	0.3	10.1	2.4	-2.3	8.3	66	164	114	-0.4	-1.3	-1.4
Germany	2.0	-1.0	71	7.7	154	-3.9	6	6	61	1.5	0.5	4.9	-5.6	5.1	11.3	54	93	97	-0.9	-1.8	-1.6
Netherlands	1.3	-0.8	68	11.1	501	-2.7	11	12	52	1.6	0.4	7.2	-8.9	1.1	14.4	117	110	100	-1.1	-2.0	-1.8
Belgium	0.3	-0.1	107	1.5	257	-3.6	20	16	59	1.3	0.5	8.4	1.6	3.3	12.8	60	160	51	-0.9	-1.6	-1.4
Italy	4.0	0.8	135	2.1	137	-3.8	22	19	36	0.7	0.2	12.6	-3.7	-3.1	5.5	54	108	112	-0.5	0.0	-0.4
Spain	0.9	0.1	85	0.9	199	-2.4	22	16	42	3.0	-0.2	22.3	-14.2	0.8	-1.4	77	148	127	0.0	-0.8	-1.0
Ireland	1.0	-1.0	108	4.9	957	-6.6	10	6	62	3.9	0.3	9.8	-42.5	11.1	31.2	84	236	65	-0.9	-1.5	-1.7
Portugal	4.0	0.8	124	1.5	247	-2.9	20	17	72	2.0	0.7	13.1	-12.7	2.4	-13.7	92	139	153	-0.7	-0.9	-1.0
Greece	5.7	-1.8	173	3.6	252	-6.4	10	4	82	2.5	0.1	24.8	-4.0	-1.2	-34.3	71	73	143	0.2	0.1	-0.4

*Vulnerability indicators: (1) % GDP (2) Deviation from four-year average (3) % of total debt (4) % year on year (5) % of Total labour force (6) Financial system credit to deposit (7) Index by World Bank governance indicators

Vulnerability indicators* 2015: 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 2014-19	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	-1.8	0.4	29	-0.1	100	-3.4	4	1.8	44	1.2	0.3	10.9	-8.5	-4.3	-12.0	23	92	89	-0.2	0.3	0.1
Czech Rep	0.2	-1.0	42	0.6	68	-5.7	8	16	32	2.5	0.8	6.1	0.4	4.3	-2.8	30	57	89	-1.1	-0.2	-1.0
Croatia	0.1	1.7	65	2.2	131	-1.5	11	3.5	34	0.5	-0.6	17.3	-0.5	1.2	-3.0	39	35	107	-0.6	-0.1	-0.2
Hungary	1.2	0.0	75	6.9	151	-6.1	23	2.8	61	2.7	1.7	7.6	-13.0	3.3	17.7	26	88	101	-0.8	-0.3	-0.6
Poland	-0.7	-0.7	49	-1.8	60	-1.5	11	3.0	57	3.5	0.4	8.0	2.7	-3.8	2.7	36	87	117	-0.9	-0.5	-0.7
Romania	-0.1	-1.4	41	-0.7	65	-3.5	8	1.5	49	2.7	2.2	6.7	-2.7	3.5	4.1	19	46	97	-0.2	0.2	0.0
Russia	-2.0	-1.0	19	4.6	14	-12.3	5	13.9	15	-3.8	12.0	6.5	2.1	-11.2	12.1	15	33	113	0.8	1.0	0.8
Turkey	1.5	-1.0	33	-4.2	49	-2.3	6	0.9	36	3.1	7.0	11.4	9.6	11.2	4.8	16	45	123	1.2	-0.1	0.0
Argentina	-1.6	-10.5	49	-2.3	28	-5.6	11	1.5	59	0.4	15.2	7.8	-1.1	-17.4	47.8	7	15	70	-0.1	0.5	0.7
Brazil	1.6	4.0	66	-3.9	30	-12.4	13	7.2	17	-2.1	8.9	6.7	2.1	0.5	-0.2	26	36	120	0.3	0.1	0.1
Chile	-0.1	-2.7	16	0.7	61	-2.8	3	0.3	16	2.2	4.1	6.6	1.7	7.8	0.6	32	53	154	-0.4	-1.5	-1.4
Colombia	-0.4	1.4	41	-5.8	29	-20.5	6	3.6	25	3.2	3.4	9.0	3.5	2.7	-26.8	18	26	176	1.3	0.4	0.4
Mexico	-1.3	-0.4	51	-2.1	34	-7.6	10	1.8	33	2.5	2.8	4.7	2.6	-0.1	3.9	16	23	75	0.7	0.5	0.6
Peru	-1.4	-2.9	20	-4.3	31	-1.5	3	8.5	38	2.5	3.7	6.0	5.1	0.5	-19.8	15	27	97	0.8	0.4	0.6
China	-1.1	-5.8	61	3.4	8	11.8	4	5.8	...	6.7	1.6	4.0	11.7	-7.4	95.3	36	156	164	0.5	0.4	0.5
India	-2.1	-1.2	68	-0.6	23	10.9	11	3.7	7	7.6	5.4	5.5	3.3	4.3	9.3	10	44	81	1.2	0.6	0.1
Indonesia	-1.0	-5.0	26	-2.5	34	-0.7	4	2.4	56	5.0	6.0	5.8	0.9	-1.8	0.7	17	23	96	0.5	0.6	0.6
Malaysia	-1.9	-3.0	57	3.4	64	-2.6	9	1.5	28	4.8	2.7	3.0	2.7	3.4	-9.4	94	--	102	-0.1	-0.4	-0.5
Philippines	0.9	-2.7	35	4.4	21	9.8	7	7.6	31	6.7	2.4	6.2	2.4	5.6	10.5	3	31	62	1.1	0.4	0.5
Thailand	-0.6	-3.0	48	3.9	37	5.0	10	2.3	12	3.7	2.1	0.8	5.5	4.1	1.3	70	51	98	1.3	0.3	0.2

*Vulnerability indicators: (1) % GDP (2) Deviation from four-year average (3) % of total debt (4) % year on year (5) % of total Llbour force (6) Financial system credit to deposit (7) Index by World Bank governance indicators

Methodology: indicators and maps

- Financial Stress Map: It stresses levels of stress according to the normalised time series movements. Higher positive standard units (1.5 or higher) stand for high levels of stress (dark blue) and lower standard deviations (-1.5 or below) stand for lower level of market stress (lighter colours)
- Sovereign Rating Index: An index that translates the letter codes of the three important rating agencies' rating (Moody's, Standard & Poors 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 six 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)
- Downgrade Pressure Gap: The gap shows the difference between the implicit ratings according to the Credit Default Swaps and the current ratings index (numerically scaled from default (0) to AAA (20)). We calculate implicit probabilities of default (PD) from the observed CDS and the estimated equilibrium spread. For the computation of these PDs we follow a standard methodology as 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 graph plots the difference between CDS-implied sovereign rating and the actual sovereign rating index, in notches. Higher positive differences account for potential Upgrade pressures and negative differences account for Downgrade potential. We consider the +/- 2 notches area as being Neutral
- Vulnerability Radars and 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 their group (Developed Economies or Emerging Markets). Furthermore, Inner positions (near 0) in the radar shows lower vulnerability, while outer positions (near 1) stand for higher vulnerability. Furthermore, we normalize each value with respect to given risk thresholds, whose values have been computed according to our own analysis or empirical literature. If the value of a variable is equal to the threshold, it would take a value of 0.8 in the radar.

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				
Cyclically 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 bebt	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				
Public short-term debt as % of total public 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 percentile)	-1.0 (8th percentile)	Lower	World Bank governance Indicators
Control of corruption	0.6 (9th percentile)	-0.7 (8th percentile)	Lower	World Bank governance Indicators
Rule of caw	0.6 (8th percentile)	-0.6 (8 th percentile)	Lower	World Bank governance Indicators

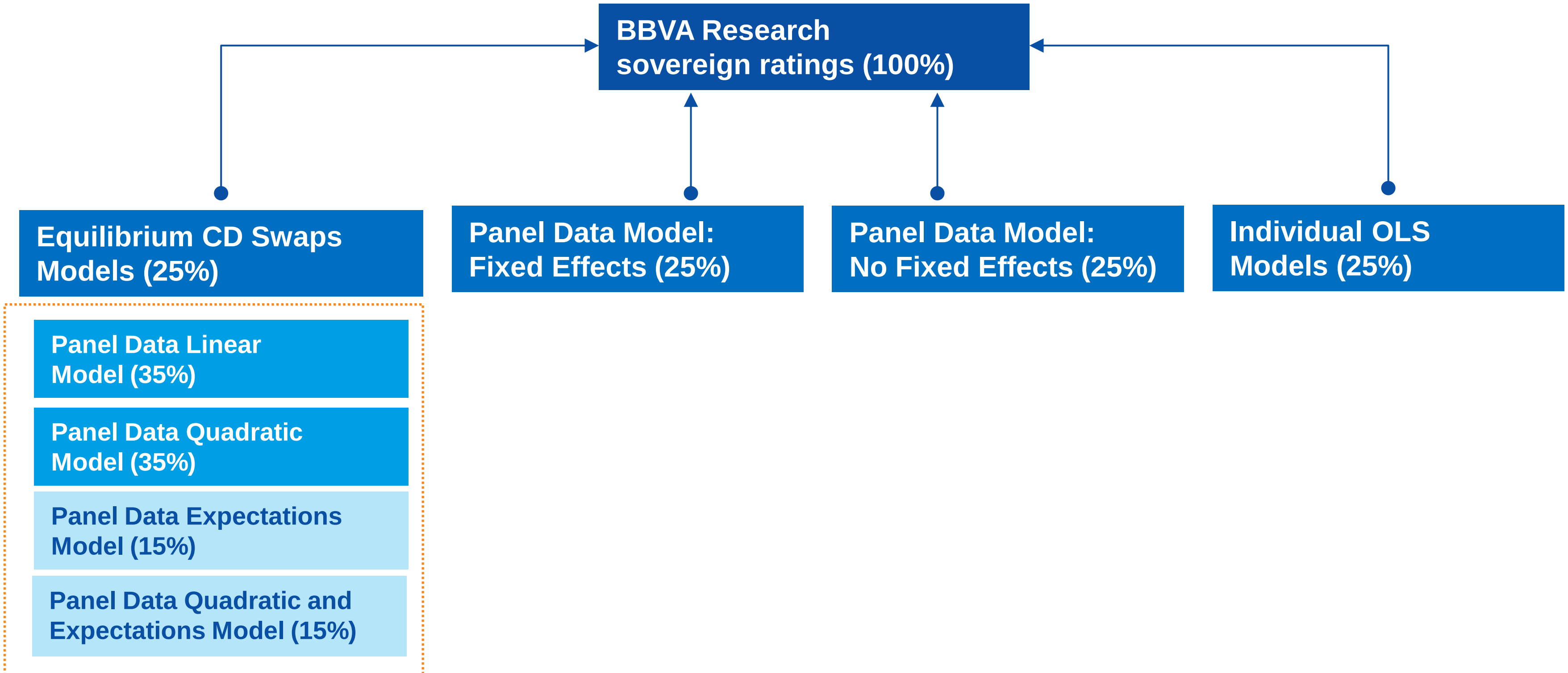
Methodology: models and BBVA country risk

- BBVA Research sovereign ratings methodology: We compute our sovereign ratings by averaging four alternative sovereign rating models developed at BBVA Research:
  - Credit Default Swaps Equilibrium Panel Data Models: This model estimates actual and forecast 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 averages of these equilibrium values are finally converted to a 20 scale sovereign rating scale. The CDS equilibrium is calculated by a weighting average of the four CDS equilibrium model estimates (30% for the linear and quadratic models and 15% for each expectation model to correct for expectation 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): This 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): This is similar to the linear model, but public and external debt account for one year’s 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 estimate 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 history of the country, independent of others

Methodology: models and BBVA country risk

BBVA Research sovereign ratings methodology diagram

Source: BBVA Research



Methodology: tracking protests and conflicts

We have developed a tracking of protest and conflict indexes for every country in the world from 1 January 1979 to the present day with daily, monthly, quarterly and annual frequencies. To construct this, we use a rich 'big database' of international events (GDELT at www.gdelt.org) which monitors world events covered by the news media from nearly every corner of the world in print, broadcast and web formats, in over 100 languages, 24 hours a day and which stretches back to 1979 with daily updates.

- BBVA Protest Intensity Index: We collect every registered protest in the world for a particular time which are separately collated under the various headings of the CAMEO taxonomy: demonstrate or rally, demonstrate for leadership change, demonstrate for policy change, demonstrate for rights, demonstrate for change in institutions and regime, conduct hunger strike for leadership change, conduct hunger strike for policy change, conduct hunger strike for rights, conduct hunger strike for change in institutions and regime, conduct hunger strike not specified before, conduct strike or boycott for leadership change, conduct strike or boycott for policy change, conduct strike or boycott for rights, conduct strike or boycott for change in institutions and regime, conduct strike or boycott not specified before, obstruct passage or block, obstruct passage to demand leadership change, obstruct passage to demand policy change, obstruct passage to demand rights, obstruct passage to demand change in institutions and regime, protest violently or riot, engage in violent protest for leadership change, engage in violent protest for policy change, engage in violent protest for rights, engage in violent protest for change in institutions and regime, engage in political dissent not specified before.

- BBVA Conflict Intensity Index: In the same way, we collect every registered conflict in the world for a particular time considering a wide variety of conflicts under the CAMEO taxonomy headings: impose restrictions on political freedoms, ban political parties or politicians, impose curfew, impose state of emergency or martial law, conduct suicide, carry out suicide bombing, carry out car bombing, carry out roadside bombing, car or other non-military bombing not specified below, use as human shield, use conventional military force not previously specified, impose blockade, restrict movement, occupy territory, fight with artillery and tanks, employ aerial weapons, violate ceasefire, engage in mass expulsion, engage in mass killings, engage in ethnic cleansing, use unconventional mass violence not previously specified, use chemical, biological, or radiological weapons, detonate nuclear weapons, use weapons of mass destruction not previously specified.

Using this information, we construct an intensity index for both events. The number of protests and conflicts each day/month/quarter/year are divided by the total number of all events recorded by GDELT for that day/month/quarter/year to create a protest and conflict intensity score that tracks just how prevalent protest and conflict activity has been over the last quarter century, correcting for the exponential rise in media coverage over the last 30 years and the imperfect nature of computer processing of the news.

This report has been produced by Emerging Markets Unit, Cross-Country Analysis Team

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