

BBVA Research

Country Risk Report

A Quarterly Guide to Country Risks – December 2015

Cross-Country Emerging Markets Unit



99,11	96,66	11,71	9,29	10,00
13,14	12,55	29,52	14,50	1,00
16,10	14,85	41,80	17,03	18,00
29,77	29,73	38,20	41,00	10,00
52,98	51,65	56,89	15,11	10,00
48,00	46,27	74,73	11,00	10,00
41,09	40,00	55,47	1,00	10,00
6,55	6,25	12,10	10,00	10,00
		50,45		

Country Risk Report

Summary

Financial markets, global risk and capital flows

- Financial tensions are receding across the board as tensions in China moderate and as the Fed's lift-off effect seems to be fully priced-in.
- Global risk aversion (VIX) has dropped sharply relaxing the Emerging Markets (EMs) risk-off mood. Developed Markets (DMs) market flows remained positive.
- The easing of tensions has not been homogeneous and outflows from EMs have continued but moderated. The relatively worse situation in Latam is driven by Brazil's woes and the commodity prices' fall.

Sovereign markets and ratings agencies update

- Sovereign CDS spreads declined across the board, although not enough to offset the previous rise in Emerging Markets.
- Spain and Netherlands improved by S&P. Brazil downgraded by Fitch one notch to the lowest investment grade level
- Several countries under intense downgrade pressure after months of surging spreads in Emerging Markets.

Our own country risk assessment

- The reduction of global factors, i.e. China's worries and Fed's lift-off, has shifted the focus to countries with high idiosyncratic vulnerabilities. The less benefited from the easing of global tensions were commodity exporters, countries with high corporate leverage and high foreign currency liabilities, and countries facing important political and geopolitical risks.
- The geopolitical tensions in the Middle East increased but markets looks to be immune₂ as big central bank policies continue to be key drivers

Country Risk Report

Index

- 1. International financial markets, global risk aversion and capital flows**
- 2. Sovereign markets and ratings update**
- 3. Macroeconomic vulnerability and in-house Regional country risk assessment**
- 4. Geopolitics and Social unrest risk**

Annex

- Methodological appendix



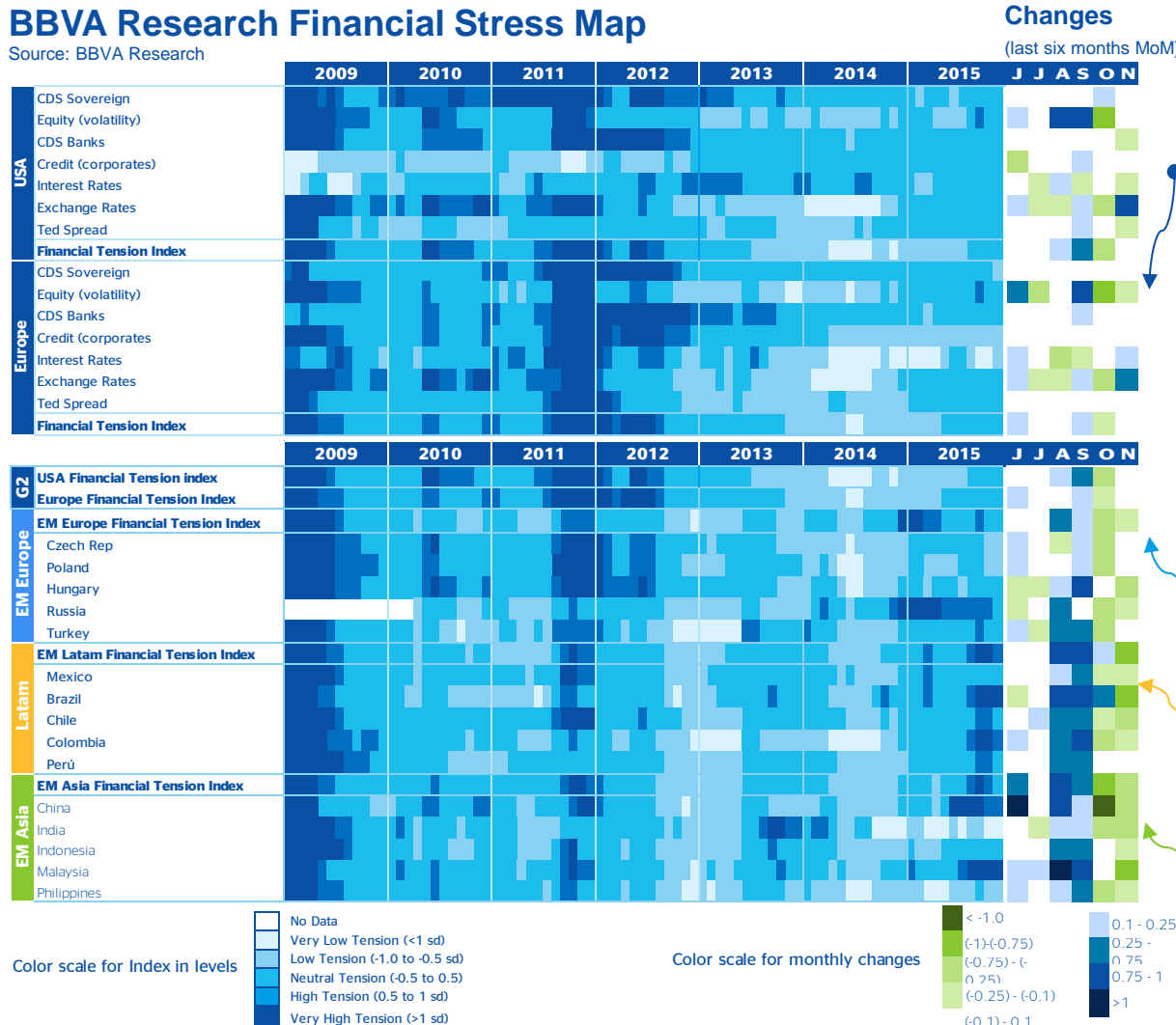
Country Risk Report

International financial markets, global risk aversion and capital flows

Financial tensions are receding across the board as tensions in China moderate

BBVA Research Financial Stress Map

Source: BBVA Research



Financial Tensions in US and Europe decreased or remained stable with some volatility in exchange rates.

The expectations of a gradual increase in US rates have maintained the volatility at an intermediate “neutral” level.

FTI in EMs left the high tension level that was reached in August.

Tensions in EM Europe are also receding or stable

Commodity price weakness remains a restriction to a further decrease of tensions in LatAm.

The fading of tensions was more intense in EM Asia and was focused on China.



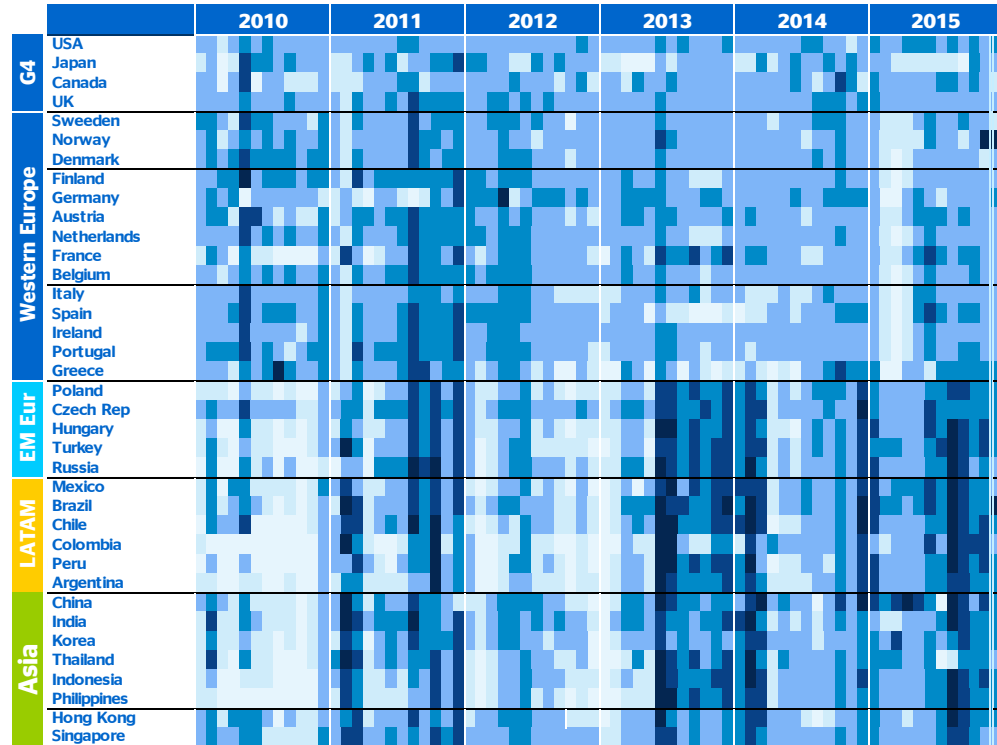
Country Risk Report

International financial markets, global risk aversion and capital flows

Moderation of Risk-off mood tames EMs net outflows

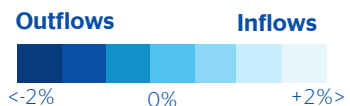
BBVA High Frequency Portfolio Flows Map

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



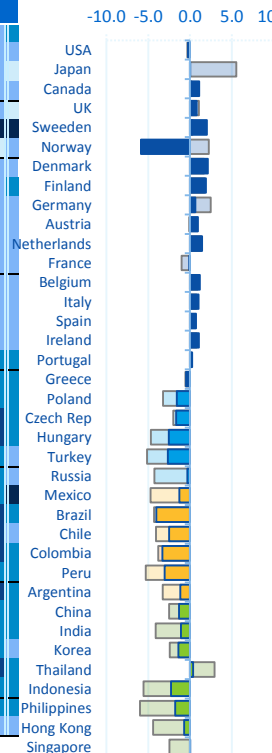
BBVA Research Portfolio Flows Map*

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 Q4 (EST) vs. Q3 Graph and comment

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



- **EMs' Risk-off mood tamed** as Chinese woes softened and Fed's lift-off was fully priced -in
- **DM market flows remained positive** in anticipation of Monetary Policy shifts
- Retail investors responsible for the downsizing in flow dynamics; Institutional remained more resilient.
- Continued deterioration of portfolio funding impinged liquidity costs in many EM countries. EM currencies depreciated akin. However the EM currency depreciation has moderated somehow.



Country Risk Report

Sovereign markets and rating agencies

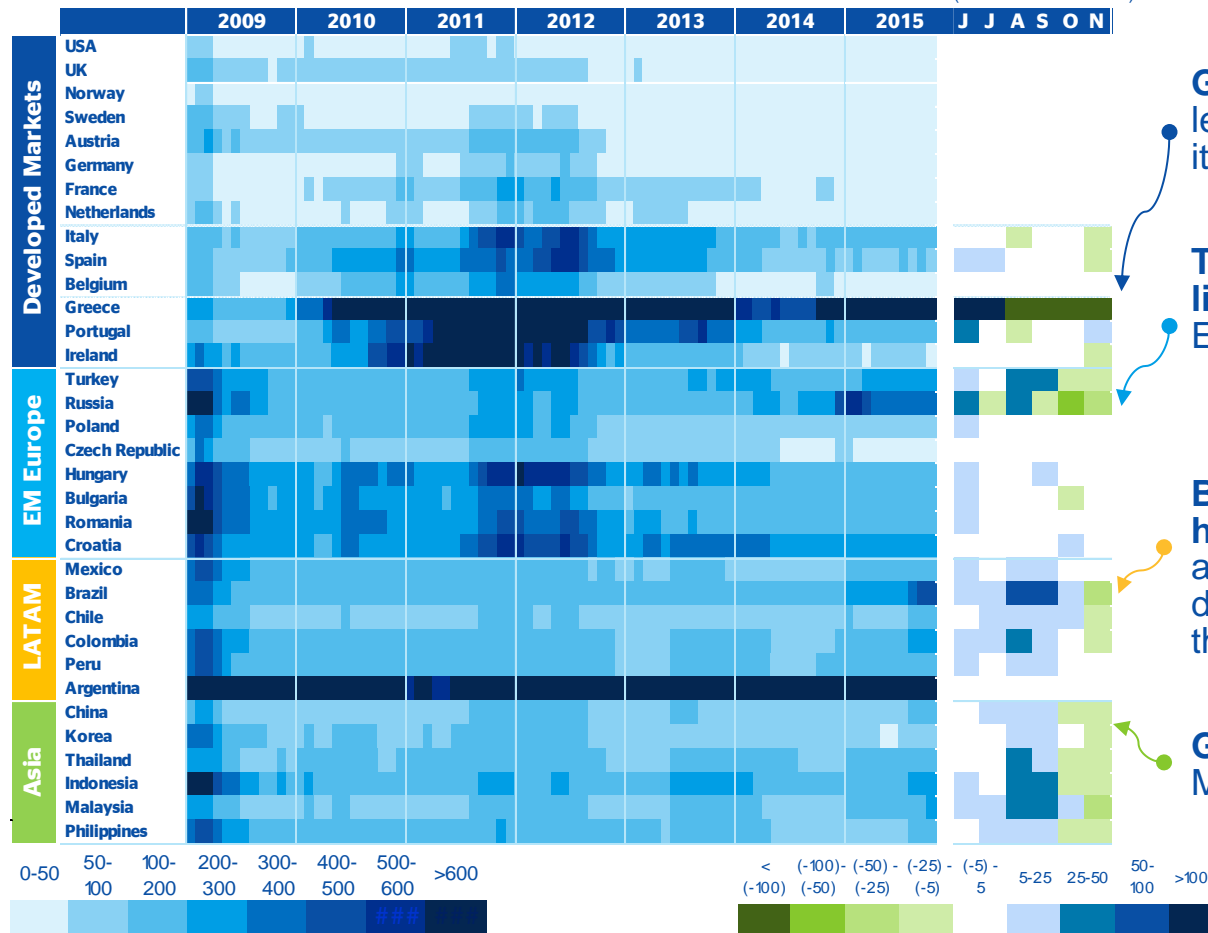
Overall decrease in CDS in the last two months, although not enough to offset the previous rise in Emerging Markets

Sovereign CDS spreads

Source: Datastream and BBVA Research

Changes

(last six months MoM)



Greek CDS is plummeting. Portugal is the less benefited of the recent correction due to its recent political developments.

Turkish and Russian spreads improve in line with the general mood. The rest of Emerging Europe remained stable.

Brazil's CDS decreased a little but it is still higher than during Lehman's crisis. Chile and Colombia's CDS have also significantly deteriorated in the last six months, although they improved slightly in November.

General improvement in Asia's spreads. Malaysia the worst performer in the region.



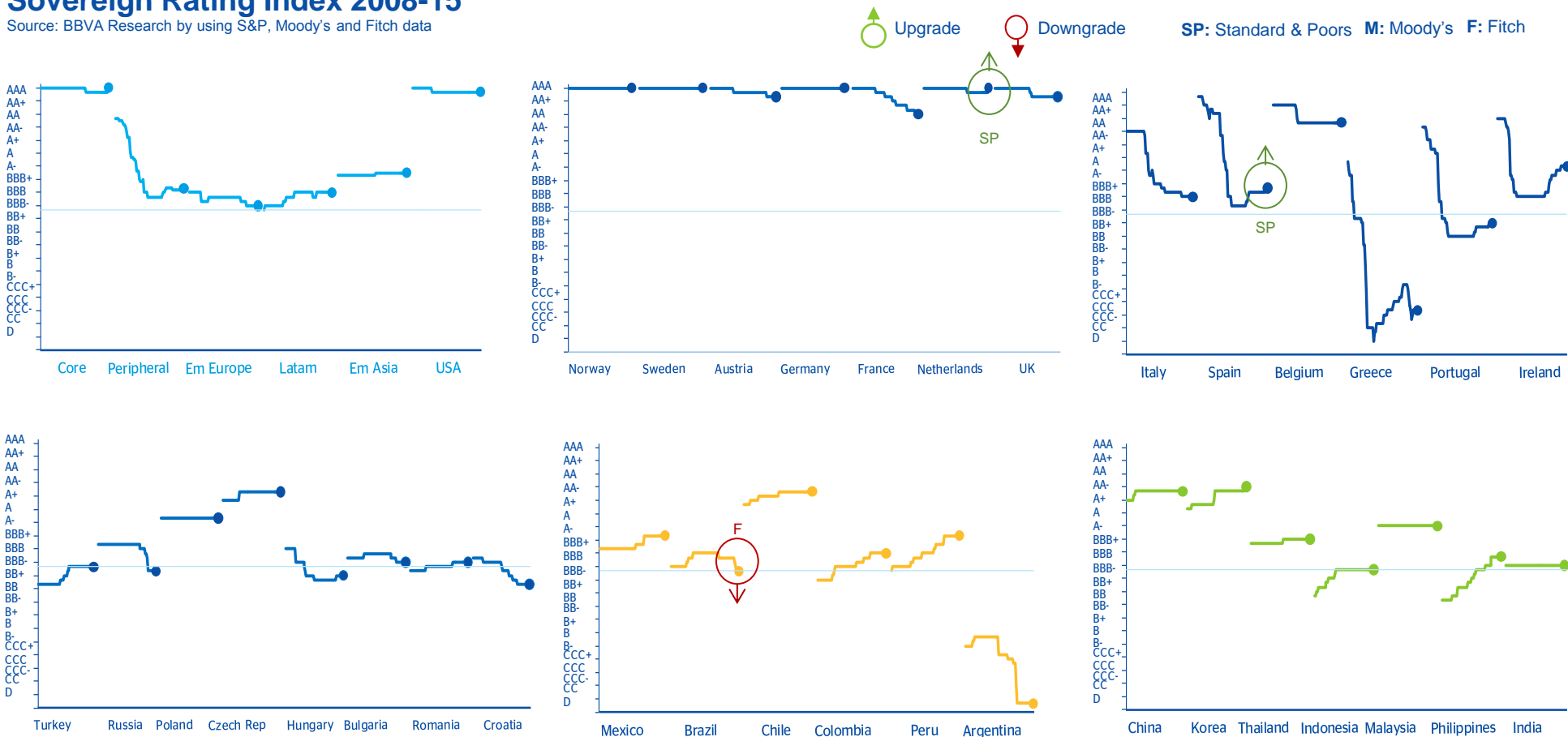
Country Risk Report

Sovereign markets and agency ratings

Spain and Netherlands improved by S&P. Brazil downgraded one notch by Fitch to the lowest investment grade level

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.



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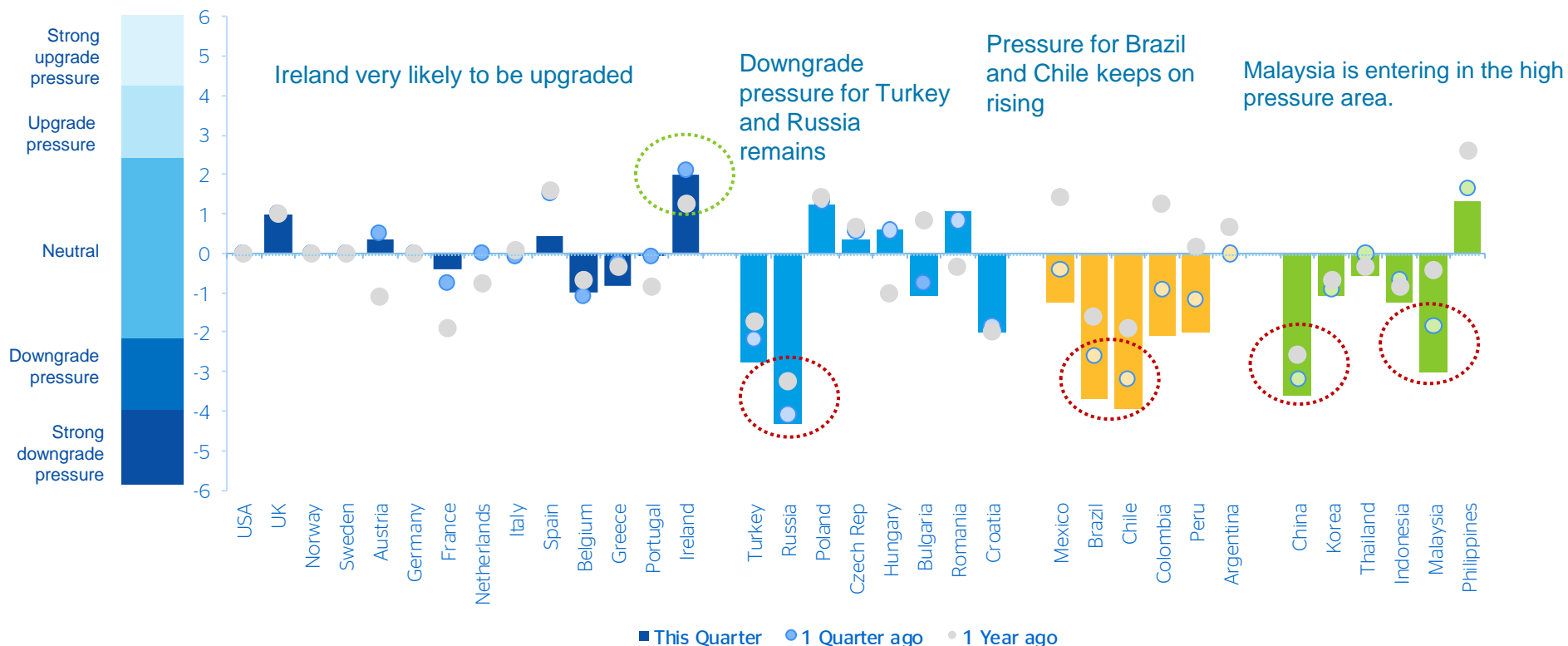
Sovereign Markets & Ratings Update

Several countries under intense downgrade pressure after months of surging spreads in Emerging Markets

Agencies' rating downgrade pressure gap (December 2015)

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

Source: BBVA Research





Country Risk Report

Macroeconomic vulnerability and risk assessment

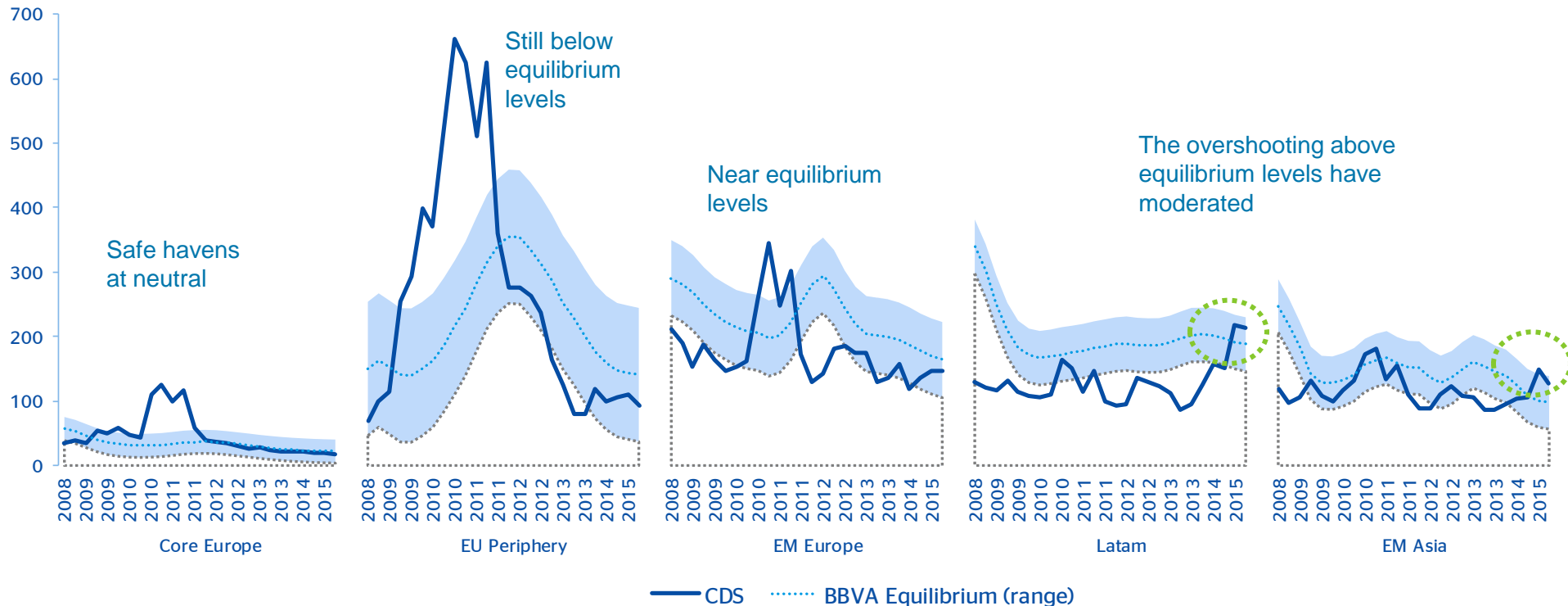
The overshooting of EM Asia and Latam CDS above equilibrium levels has moderated

CDS and equilibrium risk premium December 2015

(equilibrium: average of four alternative models + 0.5 standard deviation)

*EU Periphery excludes Greece

Source: BBVA Research and Datastream





Country Risk Report

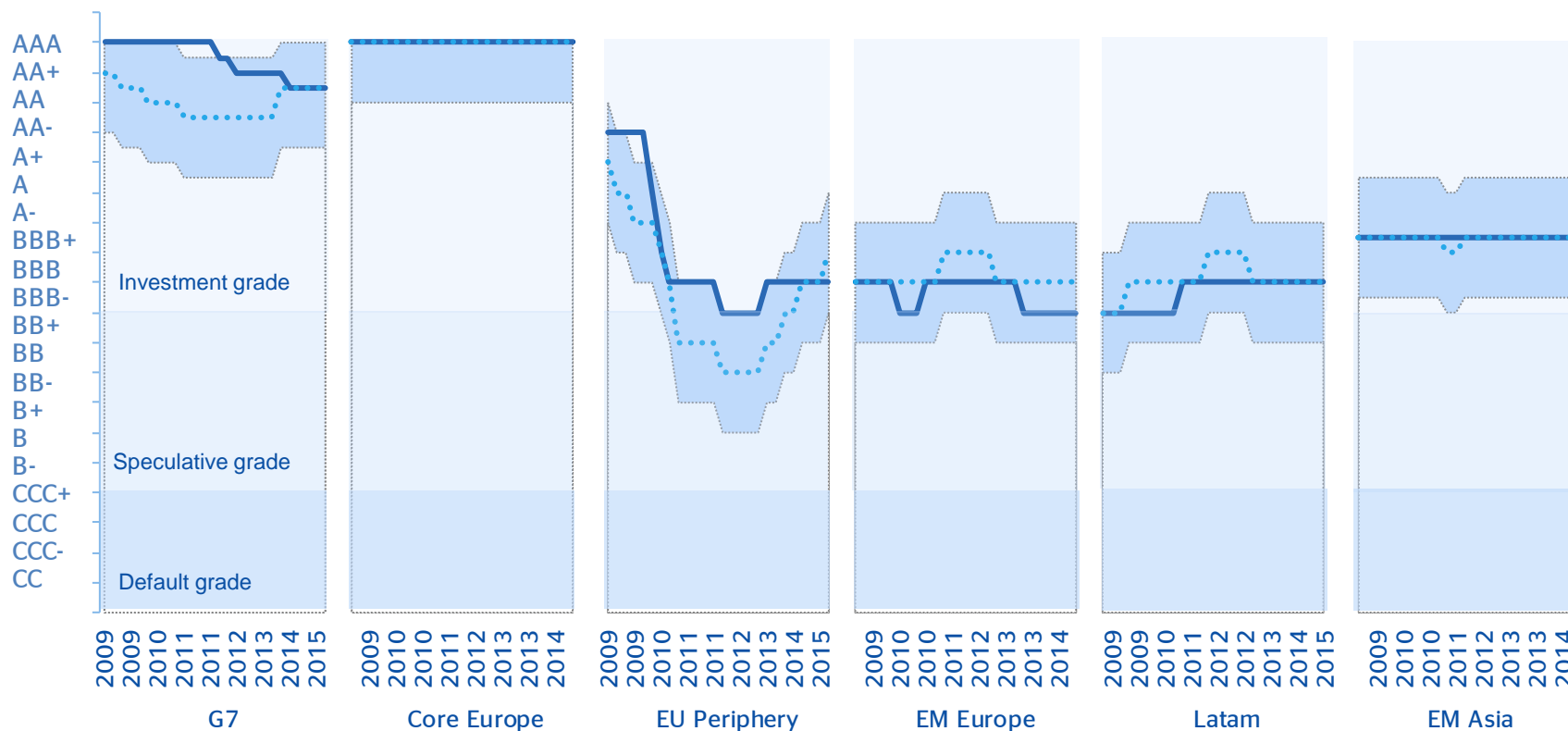
Macroeconomic Vulnerability and Risk Assessment

On a regional basis, most ratings continue 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



— Rating Agencies BBVA-Research

Country Risk Report

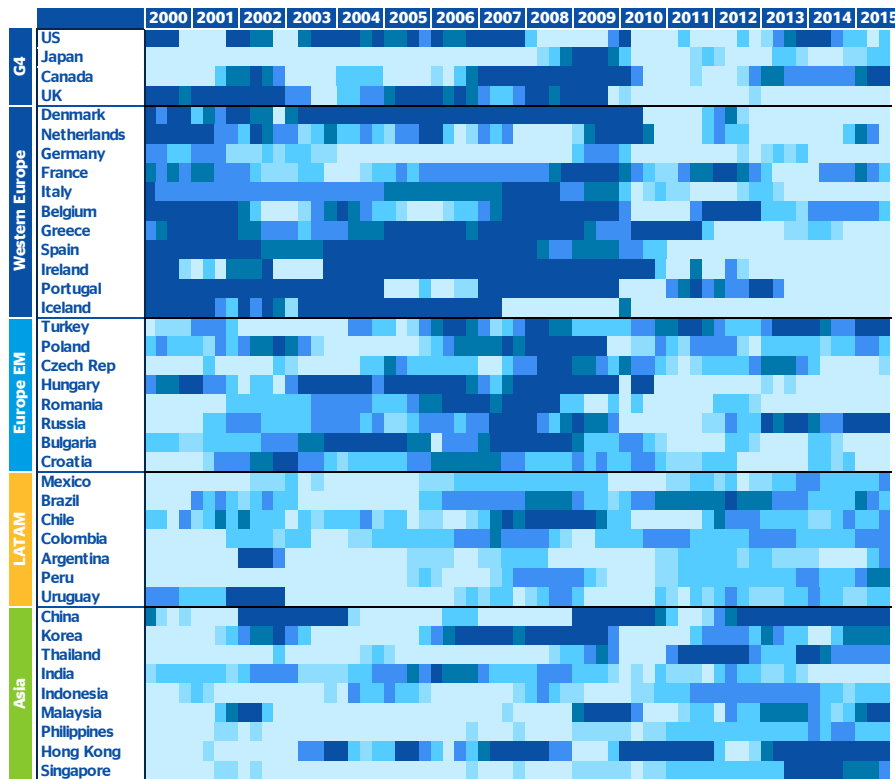
Macroeconomic vulnerability and risk assessment

Moderate concerns about excess leverage in Latam. Canada starts to look worrisome and China & Turkey still under the radar

Private credit color map (2000-2015 Q3)

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

Source: BBVA Research and Haver



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 between 0%-1%
 De-leveraging: Credit/GDP growth declining
 ... Non Available

QoQ growth

Last four quarters up until Q3-2015



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%

- Increasing signs of overheating in Canada. Moderate growth in US and Japan.
- The deleveraging cycle in Western Europe does not seem to have bottomed out.
- Turkey's leverage keeps on increasing, although credit growth is already showing clear signs of moderation. Russia's leverages back to QoQ growth.
- Leverage growing throughout Latin America. Chile, Colombia and Peru near warning levels.
- China's leveraging process does not moderate despite consensus about its excess. HK and India are now deleveraging.

Country Risk Report

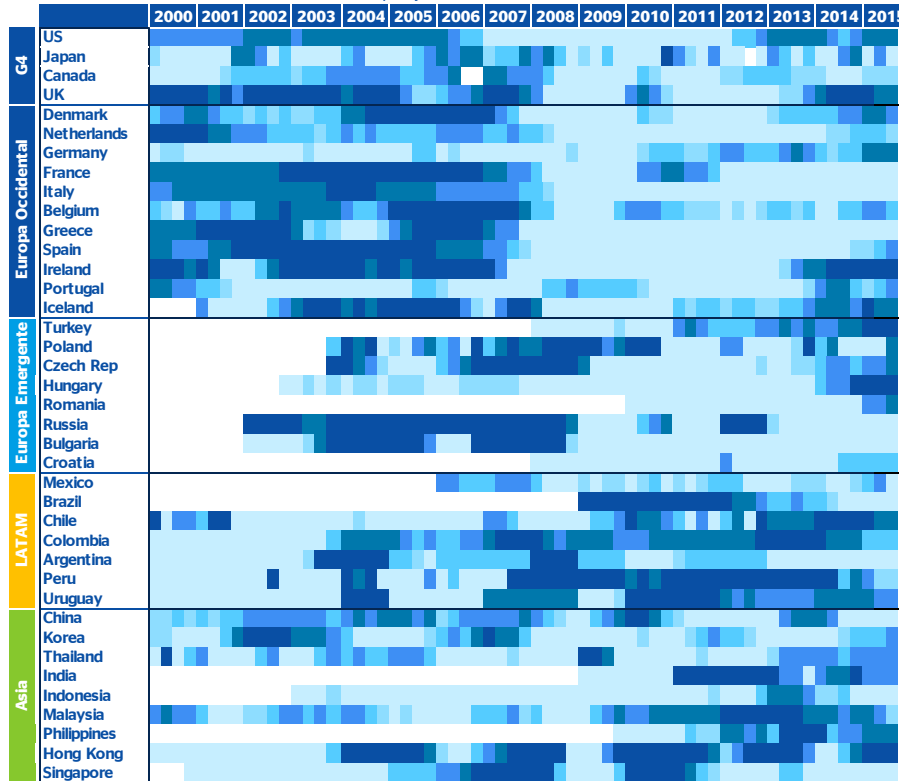
Macroeconomic vulnerability and risk assessment

Mixed outlook across EMs and DMs and within regions. HK, Turkey, Ireland, Chile and Philippines are the ones to be monitored

Real housing prices color map (2000-2015 Q3)

(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 Q3-2015



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%

Moderate quarterly growth in US. **Growth accelerates again in UK** and prices decrease in Japan and Canada.

Incipient signs of overheating in Ireland. Prices are recovering in Spain and Portugal

Acceleration across EM Europe. Turkey and Hungary's prices growing rapidly. Russia, Bulgaria and Croatia contracting.

Overall decline in prices in LatAm, with the exception of Chile, where prices are growing fast, although at a lower pace

Mixed situation in EM Asia. Chinese prices are stagnant. HK Prices clearly overheated.

Country Risk Report

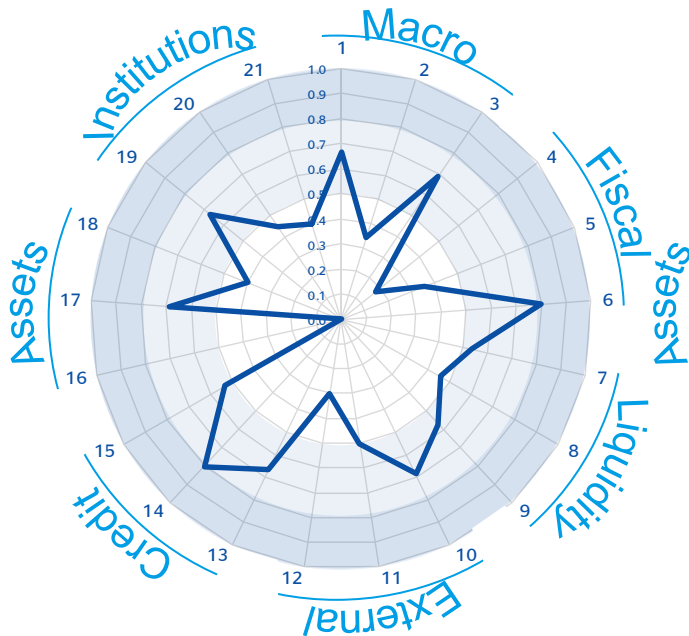
Macroeconomic vulnerability and risk assessment

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

Developed countries: vulnerability radar 2015

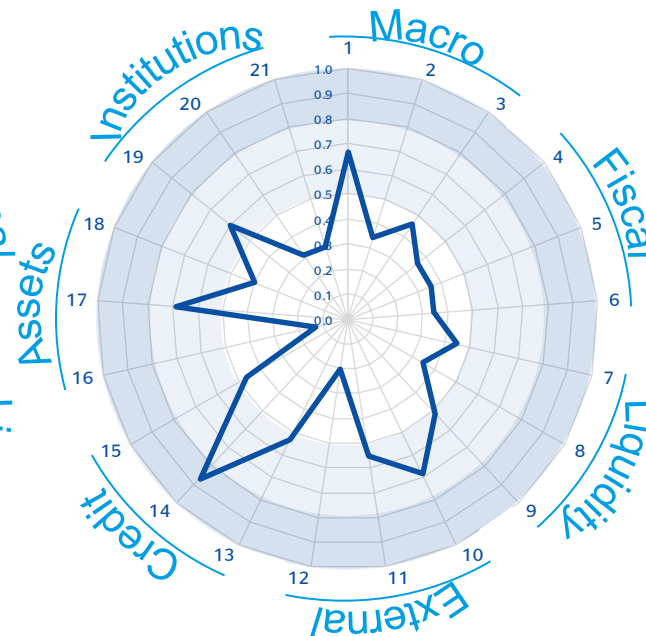
(Relative position for the emerging developed countries. Max risk=1, Min risk=0)
Source: BBVA Research

G7



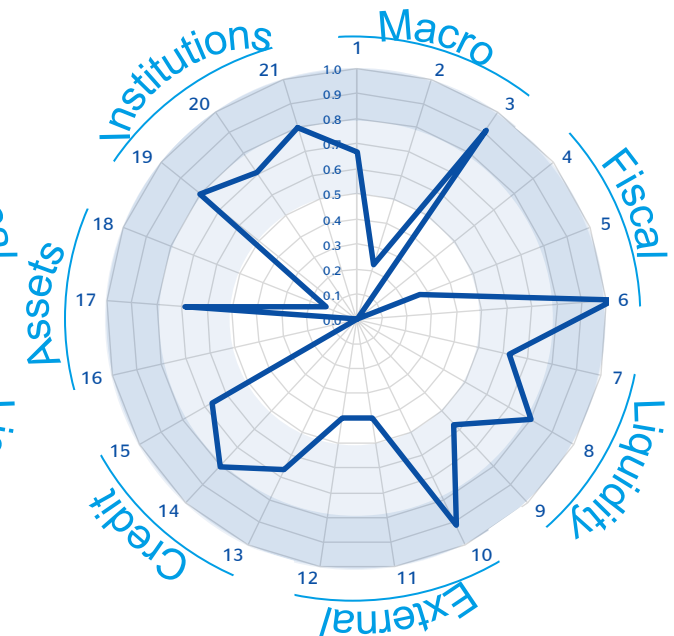
Public and corporate debt are the most important vulnerabilities

Core Europe



Corporate debt clearly the main vulnerability

Periphery Europe



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



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 (% YoY)
Institutional: (19) Political stability (20) Corruption (21) Rule of law

Country Risk Report

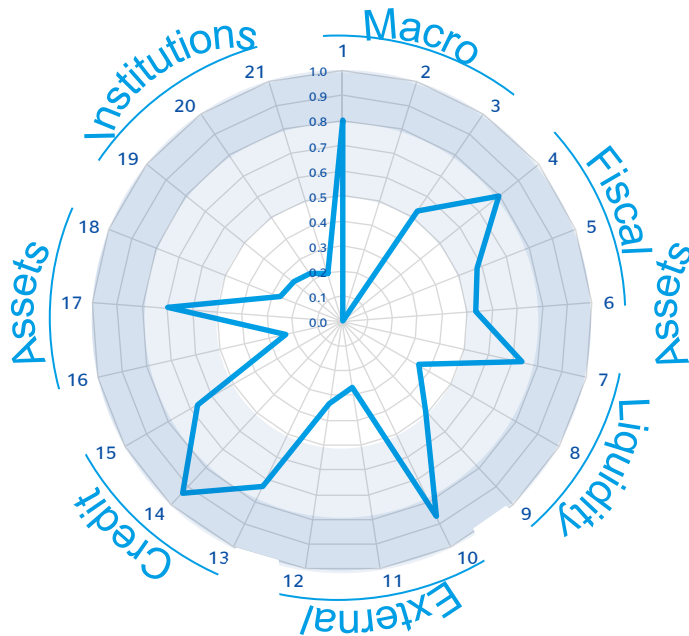
Macroeconomic vulnerability and risk assessment

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

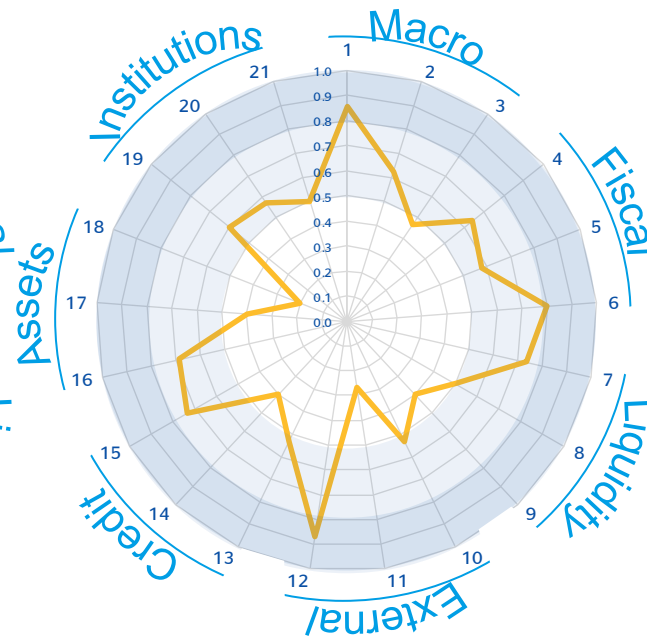
(Relative position for the emerging developed countries. Max risk=1, Min risk=0)
Source: BBVA Research

Emerging Europe



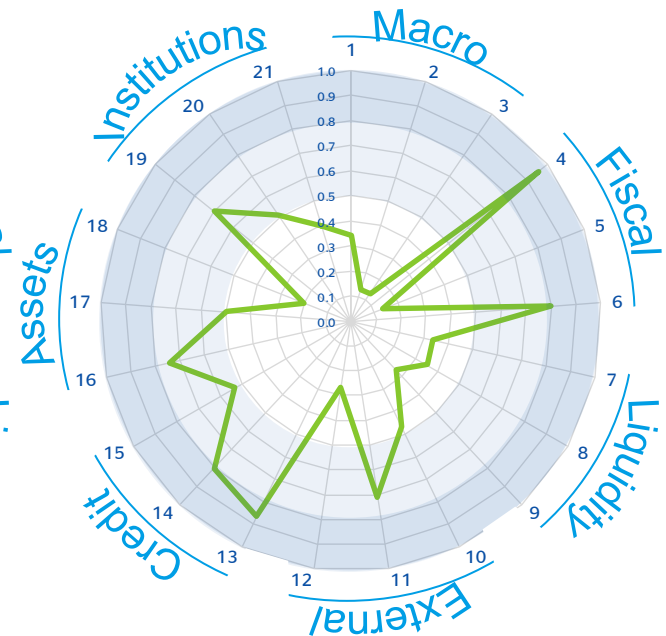
Once again, external debt is the most worrisome vulnerability together with corporate debt

LatAm



Current account balances and GDP growth at high vulnerability levels

Emerging Asia



Saldos públicos y niveles de deuda pública han aumentado la vulnerabilidad fiscal. Apalancamiento Corporativo y de hogares también en los niveles de riesgo



Macro: (1) GDP (%YoY) (2) Prices (% YoY) (3) Unemployment (% LF)
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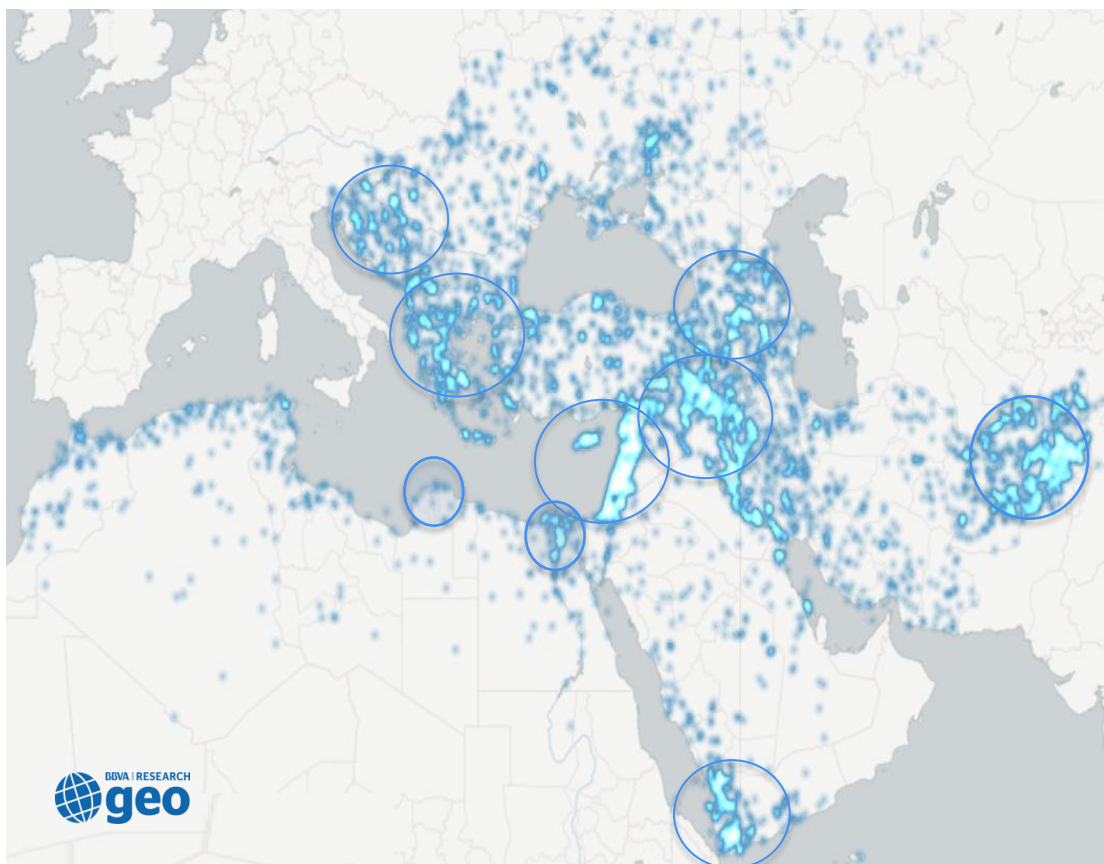
Geopolitical Risks

The Middle East conflict is becoming a complex crisis...

BBVA Conflict Heat-map in 2015

(Number of conflicts / Total events)

Source: www.gdelt.org & BBVA Research



**Syrian situation remains
Complex with no transition plan**

The Russian-Turkey situation escalates

Iraq still fragile

**ISIS tries to destabilize failed states in
some regions**

Proxy war continues in the Yemen

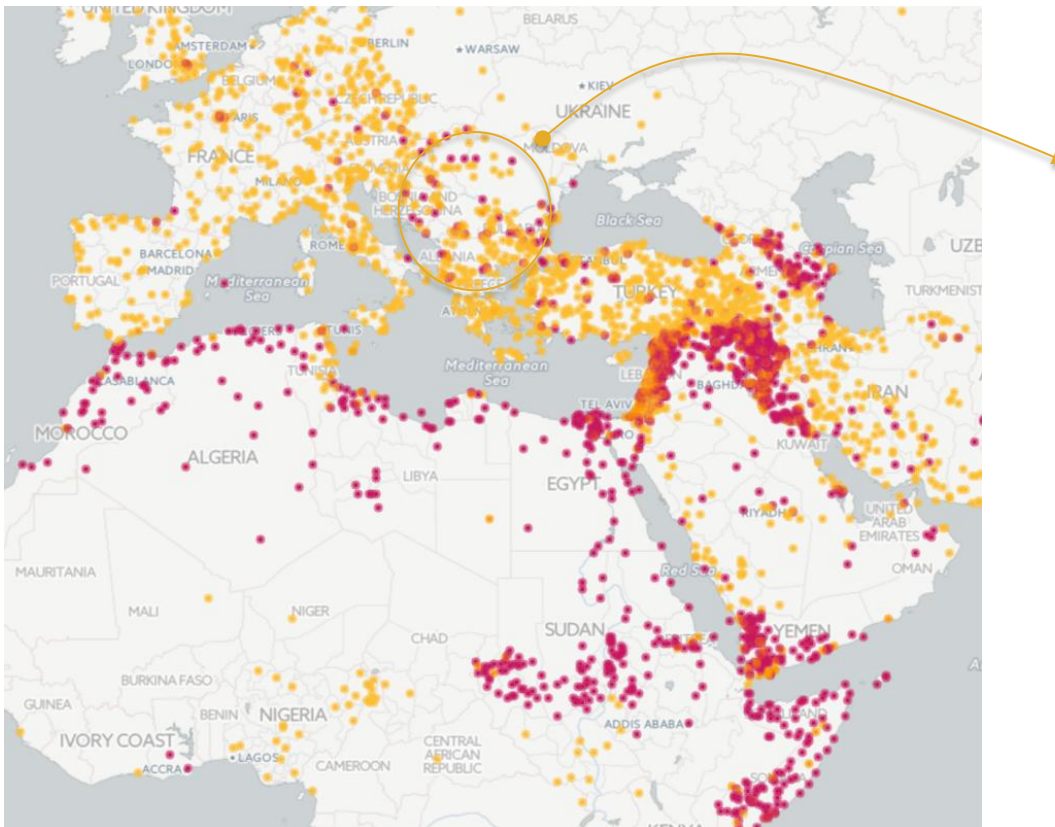
**Refugees crisis poses some risks
for Europe.**

Country Risk Report

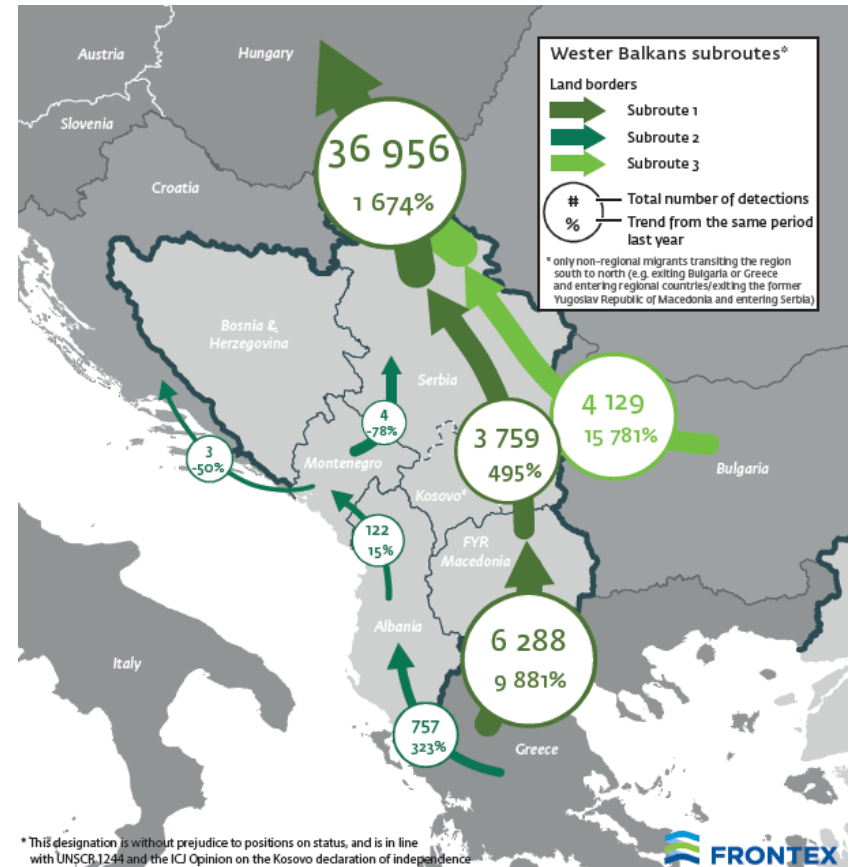
Geopolitical Risks

...The refugees crisis continues in Europe

BBVA Research Refugees Flows Map in 2015
 (Number of media citations about refugees' inflows and outflows)
 Source: www.gdelt.org & BBVA Research



Main sub-routes used by non-regional migrants through the Western Balkans
 Source: Frontex



* This designation is without prejudice to positions on status, and is in line with UNSCR 1244 and the ICJ Opinion on the Kosovo declaration of independence



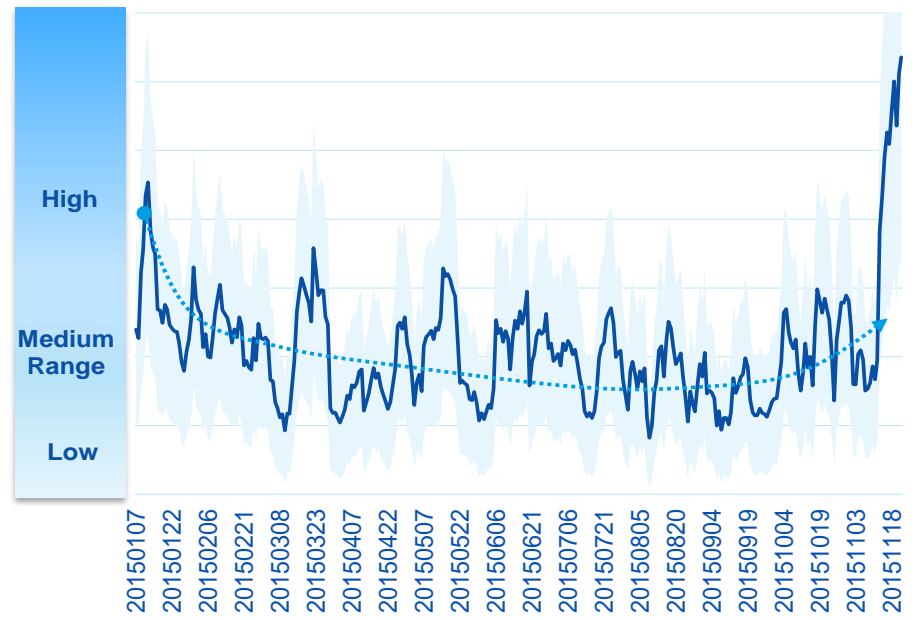
18.02	17.13	0.16	23.34
18.81	23.53	23.13	0.92
1.66	46.41	44.9	0.1
24.44	0.28	17.6	60.3
16.8	35.7	16.8	169.2
21.1	44.4	18.2	13.0
11.9	1.8	76.3	14.1
40.7			
43.9			
US4612021034	intc		
US46185R1005	invl		
US46612J1016	invl		
US48203R1041	invl		
US48248C1009	invl		
US49876C1053	invl		

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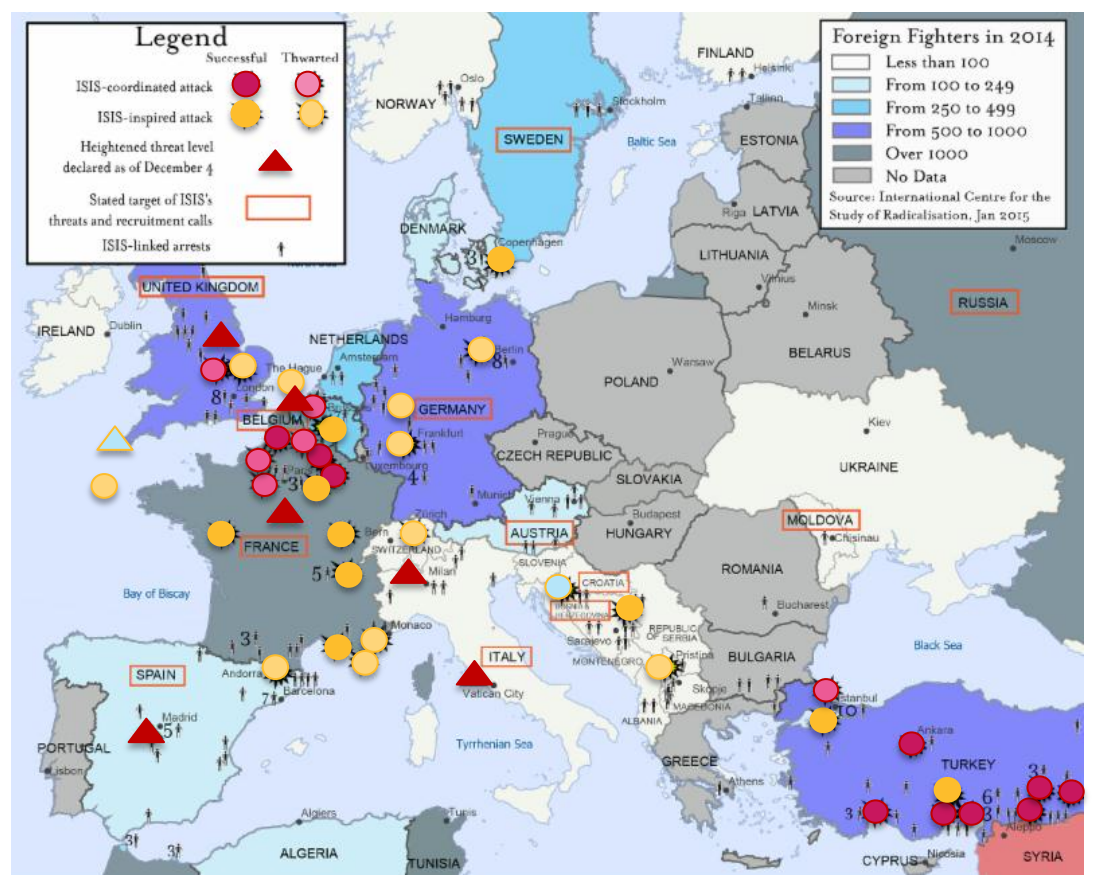
Geopolitical Risks

Other security issues also becoming critical

Europe: Conflict Intensity Index during 2015
 (Number of conflicts / Total events)
 Source: www.gdelt.org & BBVA Research



ISIS linked Events in Europe (Jan – December 2014)
 Source: ISW



* This map was elaborated using the Global Content Analysis Measures (GCAM) system from GDELT that runs each news article monitored by GDELT through an array of leading content analysis tools to capture over 2,230 latent dimensions, reporting density and value scores for each. We assessed the density of "Threat" and "Fear" for each geolocated place in Europe in the last two month, plotting in the map the significant observations.

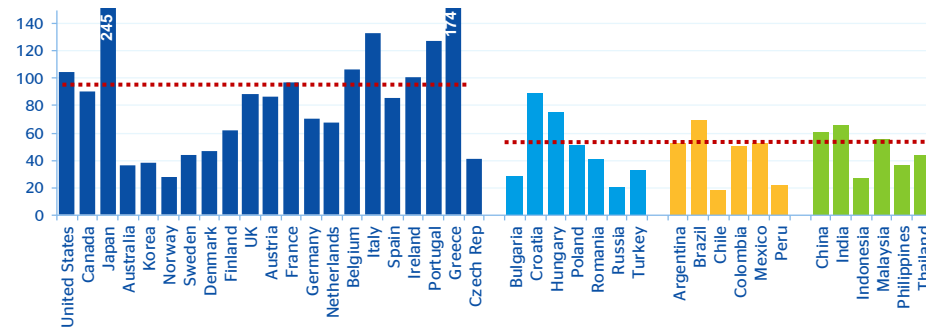
Country Risk Report

Macroeconomic vulnerability and risk assessment

Public and private debt chart gallery

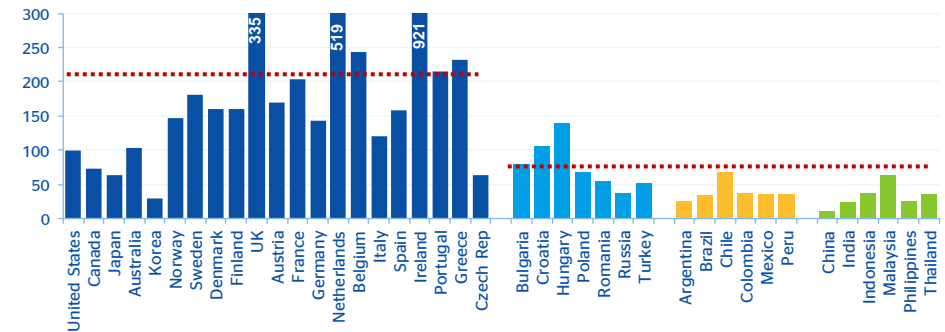
Gross Public Debt 2015

(% GDP)
Source: BBVA Research and IMF



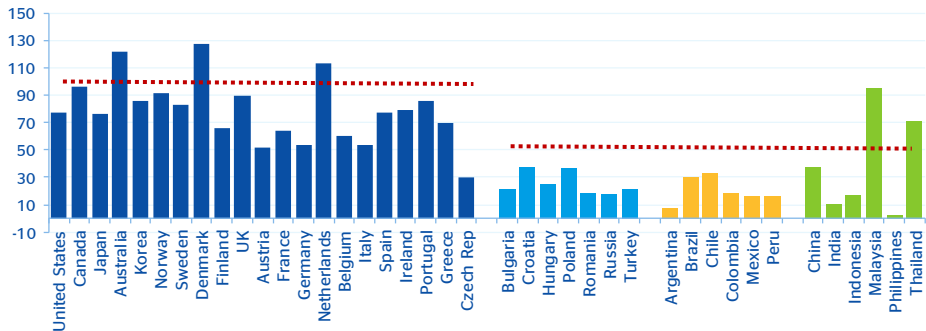
External Debt 2015

(% GDP)
Source: BBVA Research and IMF



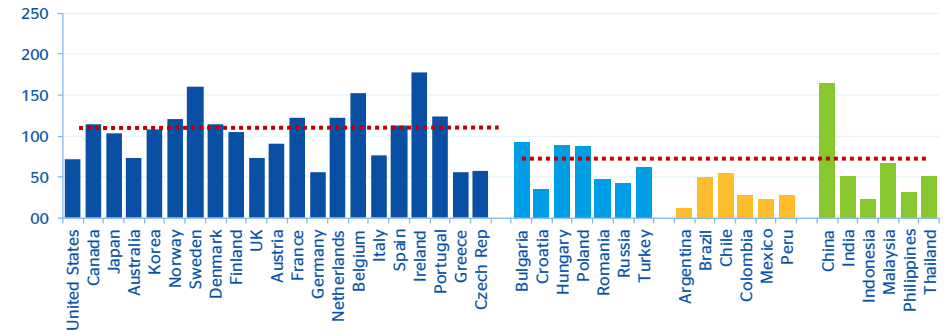
Household Debt 2015

(% GDP)
Source: BBVA Research and BIS



Corporate Sector Debt 2015

(% GDP, excluding bond issuances)
Source: BBVA Research and BIS



..... Risk thresholds

Country Risk Report

Macroeconomic vulnerability and risk assessment

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	-1.1	-1.3	105	-2.7	99	14.8	20	15	34	2.5	0.2	5.3	1.4	5.6	-4.4	78	71	62	-0.6	-1.3	-1.6
Canada	-0.8	-0.1	90	-2.9	72	-13.2	12	12	22	1.0	1.1	6.8	8.3	-3.5	-11.1	96	114	135	-1.0	-1.9	-1.8
Japan	-5.0	-0.8	246	3.0	64	-11.6	53	18	8	0.6	0.1	3.5	2.1	0.4	7.5	76	103	49	-1.0	-1.6	-1.3
Australia	-0.8	0.1	36	-4.0	104	-9.9	6	8	66	2.4	2.4	6.3	8.2	2.4	-4.5	122	73	135	-1.0	-1.8	-1.7
Korea	-0.9	-1.2	38	7.1	30	6.2	3	10	13	2.7	1.3	3.7	4.7	3.3	-2.8	86	109	96	-0.2	-0.5	-1.0
Norway	-9.6	-0.5	28	7.0	147	-11.6	-9	0	34	0.9	2.3	4.2	17.2	4.1	-7.2	92	120	127	-1.3	-2.3	-1.9
Sweden	-1.2	-2.1	44	6.7	180	-7.8	7	13	46	2.8	0.4	7.7	-8.6	11.2	1.0	83	160	200	-1.1	-2.3	-1.9
Denmark	-1.8	-0.9	47	7.0	159	-2.4	9	26	43	1.6	0.5	6.2	-13.7	4.6	20.9	128	114	320	-0.9	-2.4	-1.9
Finland	-0.7	-0.7	62	-1.1	159	-2.8	8	8	79	0.4	0.4	9.5	-18.6	2.2	0.2	66	105	137	-1.4	-2.2	-1.9
UK	-2.0	-0.8	89	-5.2	306	9.4	12	7	28	2.4	0.1	5.6	-5.7	5.2	-8.5	89	73	57	-0.5	-1.7	-1.7
Austria	0.5	0.7	87	1.6	169	-1.0	8	6	76	0.8	1.2	5.8	1.0	3.9	1.2	52	91	100	-1.3	-1.5	-1.8
France	-0.7	-0.8	97	-0.9	204	-3.9	17	14	61	1.1	0.1	10.2	-0.6	-3.4	0.9	64	122	111	-0.4	-1.3	-1.4
Germany	1.7	-1.0	71	7.6	143	-3.6	6	8	61	1.6	0.2	4.7	-8.4	5.1	2.0	54	56	93	-0.9	-1.8	-1.6
Netherlands	0.9	-0.8	68	9.6	511	-2.7	11	12	52	1.8	1.2	7.2	-11.1	0.8	0.0	114	122	96	-1.1	-2.0	-1.8
Belgium	0.3	-0.1	107	2.1	244	-3.0	20	16	59	1.3	1.3	8.5	3.6	2.4	2.3	60	153	50	-0.9	-1.6	-1.4
Italy	3.3	0.8	133	2.0	121	-3.6	21	14	36	0.8	1.9	12.2	-5.8	-2.6	1.9	54	77	109	-0.5	0.0	-0.4
Spain	1.2	-2.3	85	1.5	158	-4.4	22	16	43	3.2	-0.4	22.2	-16.8	4.1	-11.7	78	112	118	0.0	-0.8	-1.0
Ireland	1.3	-1.0	101	3.2	800	-7.0	10	6	62	4.8	0.2	9.6	-29.9	9.1	26.5	79	178	62	-0.9	-1.5	-1.7
Portugal	3.1	0.8	128	0.5	215	-2.3	20	12	72	1.5	0.5	12.3	-13.2	4.2	-9.0	86	123	145	-0.7	-0.9	-1.0
Greece	2.7	-1.8	197	0.7	233	-5.9	15	6	82	-2.3	1.5	26.8	-6.2	-4.7	-38.4	70	55	157	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

Country Risk Report

Macroeconomic vulnerability and risk assessment

Vulnerability indicators: emerging economies

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	-0.7	0.4	29	1.0	79	-4.0	4	2.1	44	1.7	0.3	10.3	-9.2	-3.4	-18.1	21	92	87	-0.2	0.3	0.1
Czech Rep	-0.8	-1.0	41	1.7	63	-4.4	8	14	32	3.9	0.5	5.2	-1.6	5.7	-2.0	30	56	88	-1.1	-0.2	-1.0
Croatia	-0.9	1.7	89	1.7	105	-3.1	21	3.5	37	0.8	0.4	16.6	-1.1	1.2	-12.1	38	35	101	-0.6	-0.1	-0.2
Hungary	1.1	0.0	75	5.0	138	-6.8	23	2.8	61	3.0	2.0	7.3	-11.1	9.5	16.8	26	89	98	-0.8	-0.3	-0.6
Poland	-0.9	-0.7	51	-0.5	68	-4.8	11	3.0	57	3.5	0.1	7.5	2.3	7.2	-9.2	37	88	116	-0.9	-0.5	-0.7
Romania	-0.2	-1.4	41	-0.7	54	-2.8	8	1.6	49	3.4	-0.5	6.9	-2.2	7.5	-3.9	18	47	96	-0.2	0.2	0.0
Russia	-3.8	-1.0	20	5.0	36	-17.7	5	5.0	15	-3.8	13.5	6.0	8.4	-12.8	16.4	17	42	109	0.8	1.0	0.8
Turkey	1.4	-1.6	32	-4.5	53	0.6	6	0.9	34	3.0	7.4	10.8	9.0	11.2	-1.0	21	62	124	1.2	-0.1	0.0
Argentina	-2.8	-10.5	52	-1.8	26	-0.1	11	1.5	59	0.4	15.9	7.6	-0.3	-14.4	-21.8	7	12	69	-0.1	0.5	0.7
Brazil	0.7	4.0	70	-3.8	33	-20.6	13	7.0	17	-2.5	10.0	8.3	4.9	-8.1	-16.7	30	49	119	0.3	0.1	0.1
Chile	-1.2	-1.6	18	0.3	68	-8.4	2	1.0	20	2.1	4.3	6.4	2.7	7.8	-6.6	32	54	156	-0.4	-1.5	-1.4
Colombia	-0.2	1.4	51	-6.2	37	-28.0	6	3.6	25	2.6	4.3	9.0	3.5	2.7	-31.8	19	27	180	1.3	0.4	0.4
Mexico	-1.0	-0.4	52	-2.9	34	-10.0	10	1.8	33	2.5	2.3	4.6	2.0	-0.5	-6.9	16	23	76	0.7	0.5	0.6
Peru	-0.1	-1.1	22	-3.7	35	-3.9	3	8.4	40	2.2	3.4	6.0	5.6	0.5	-37.0	16	28	99	0.8	0.4	0.6
China	-1.1	-6.4	61	3.1	10	10.1	4	5.8	..	6.8	1.8	4.1	12.0	-4.0	23.6	38	165	85	0.5	0.4	0.5
India	-2.7	-3.8	65	-0.7	23	8.8	11	3.7	7	7.3	5.1	5.5	-1.9	5.0	-1.8	10	51	79	1.2	0.6	0.1
Indonesia	-1.0	-5.0	27	-2.0	36	2.0	4	2.3	56	4.8	6.0	5.8	1.0	-2.2	-17.8	17	23	98	0.5	0.6	0.6
Malaysia	-1.6	-3.0	56	2.2	64	-10.9	9	1.6	28	4.7	2.4	3.0	6.5	0.3	-12.2	95	--	105	-0.1	-0.4	-0.5
Philippines	2.0	-2.7	36	5.0	26	4.5	7	7.6	31	6.0	3.1	6.3	2.7	6.3	-5.3	3	32	63	1.1	0.4	0.5
Thailand	-0.1	-3.0	44	6.2	35	-0.2	10	3.1	12	2.5	-0.3	0.8	4.2	4.0	-14.9	71	51	100	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 Labour force (6) Financial system credit to deposit (7) Index by World Bank governance indicators

Country Risk Report

Annex

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.

Country Risk Report 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				
Cyclically adjusted deficit ("Structural Deficit")	-4.2	-0.5	Lower	Baldacci et Al (2011). Assessing fiscal stress. IMF WP 11/100
Expected interest rate GDP growth diferential 5 years ahead	3.6	1.1	Higher	Baldacci et Al (2011). Assessing fiscal stress. IMF WP 11/100
Gross public bebt	73.0	43.0	Higher	Baldacci et Al (2011). Assessing fiscal stress. IMF WP 11/100
Liquidity problems				
Gross financial needs	17.0	21.0	Higher	Baldacci et Al (2011). Assessing fiscal stress. IMF WP 11/100
Debt held by non residents	84.0	40.0	Higher	Baldacci et Al (2011). Assessing 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). Assessing fiscal stress. IMF WP 11/100
Reserves to short-term debt (Emerging)		0.6	Lower	Baldacci et Al (2011). Assessing 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 law	0.6 (8th percentile)	-0.6 (8 th percentile)	Lower	World Bank governance Indicators

Methodology: models and BBVA country risk

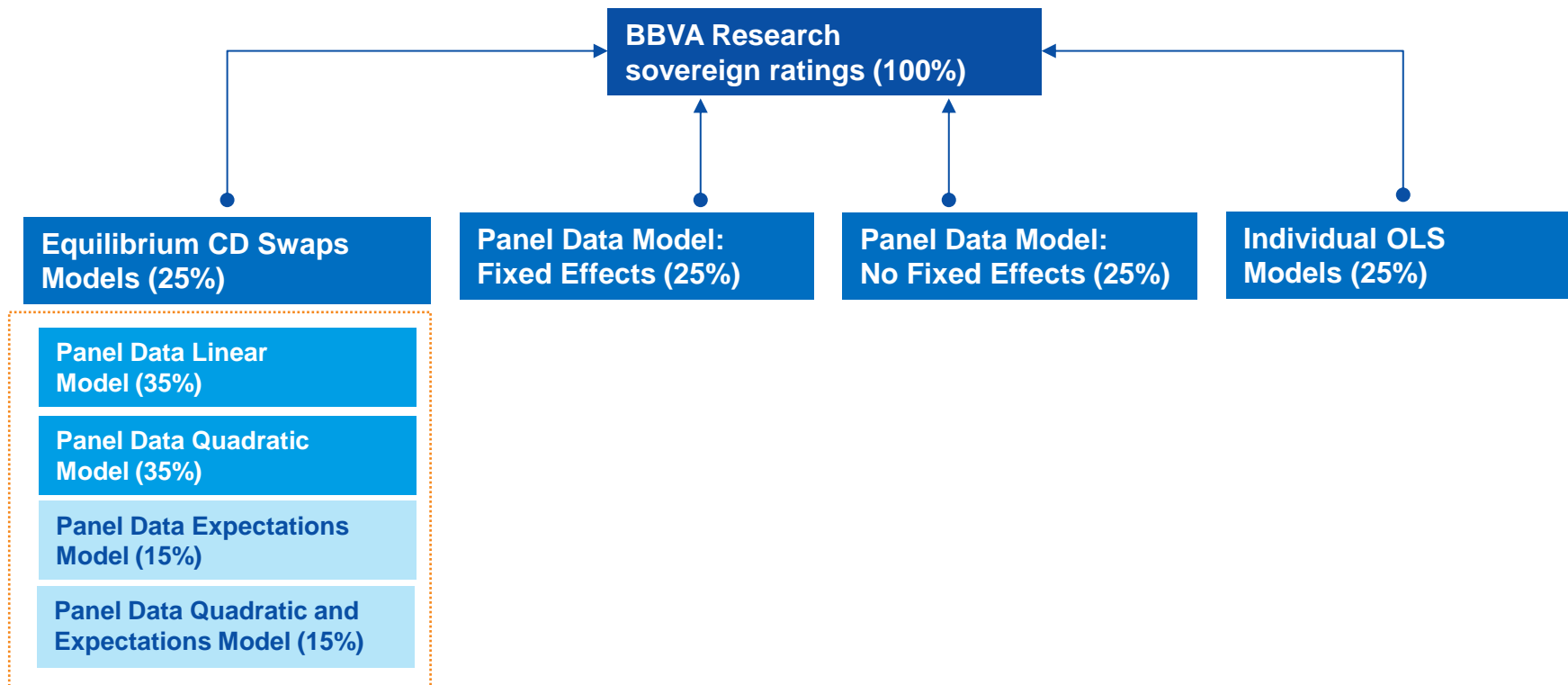
- BBVA Research sovereign ratings methodology: We compute our sovereign ratings by averaging four alternative sovereign rating models developed at BBVA Research:
 - Credit Default Swaps Equilibrium Panel Data Models: This model estimates actual and forecast equilibrium levels of CD Swaps for 40 developed 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



Country Risk Report

Annex

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.



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