

BBVA Research

Country Risk Report

A Quarterly Guide to Country Risks – December 2014

Cross-Country Emerging Markets Unit



Country Risk Report

Summary

Financial markets, global risk and capital flows

- Some signs of unease appeared in DMs countries. EMs driven by geopolitical fears and FED normalisation expectations
- EMs portfolio flows back to pre-tapering levels. Three quarters in positive territory but caution ahead FED movements
- Diversification in EM flows increased

Sovereign markets and ratings agencies update

- Emerging and periphery sovereign markets moving to fair values
- Rating agencies activity relaxed. Japan, Russia and Italy downgraded
- Market's implicit ratings close to the rating agencies. Market pressure for a new downgrade in Russia and a potential upgrade in Philippines

Our own country risk assessment

- Vulnerability is still high in developed markets, although improving. Low growth and fiscal problems still pose some risks
- Emerging markets credit growth should be monitored in some countries
- Russian-Ukrainian geo-political woes can spill over through different channels. The economic cost of the conflict has already been high

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 assessment of country risk on a Regional basis**
 - 4. Special topic:**
 - Ukraine-Russia conflict
- Annex
- Methodological appendix

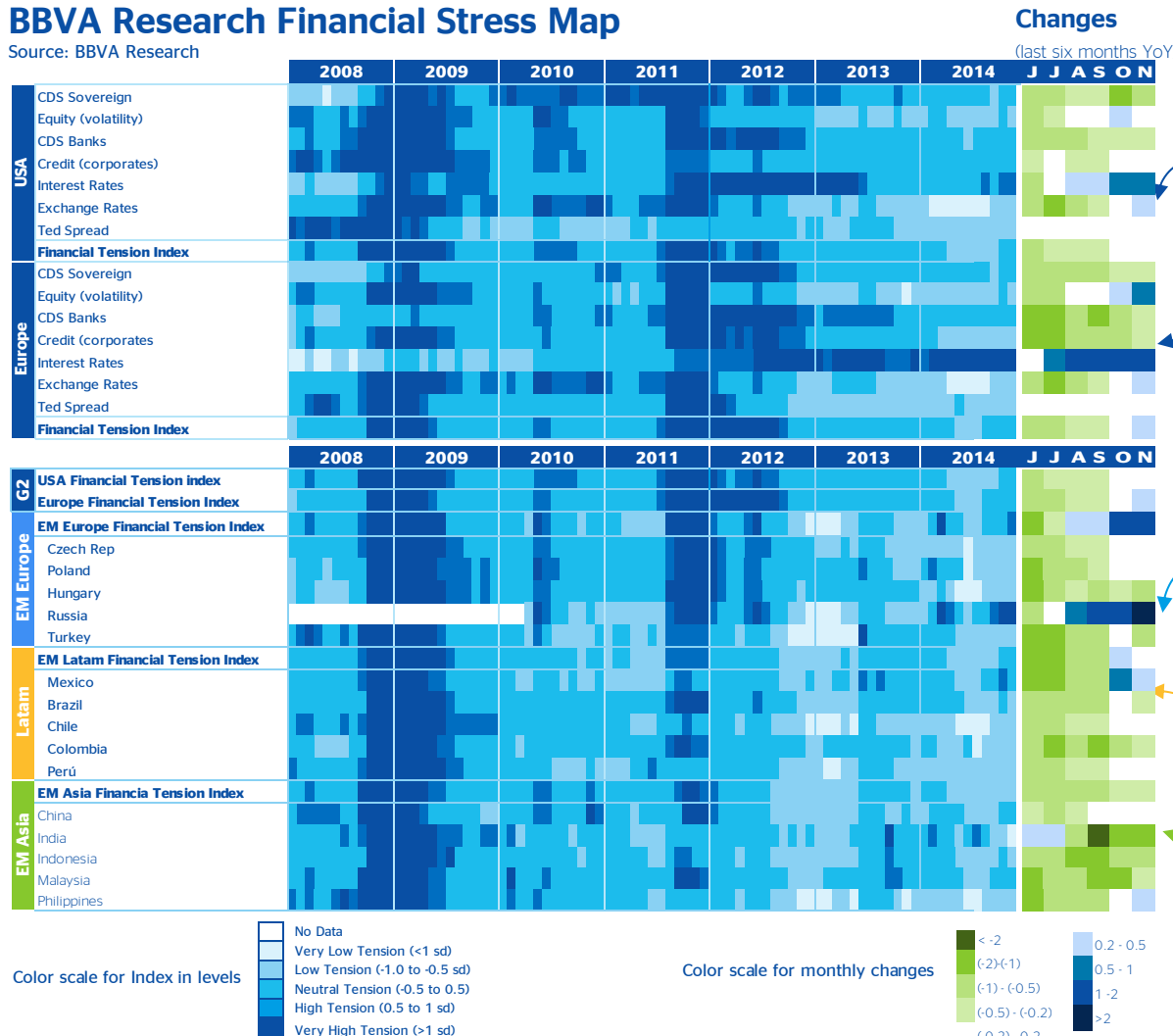
Country Risk Report

International financial markets, global risk aversion and capital flows

Mixed signals but increasing tensions in EM

BBVA Research Financial Stress Map

Source: BBVA Research



Relaxation of tensions in developed markets has stopped.

Some mild tensions have emerged in equity and exchange rates.

Tensions in interest rates continue in high levels.

Financial tensions in EM Europe continue to be led by tensions arising from Russia. Tensions in Turkey keep on relaxing.

Some mild tensions have appeared in Mexico.

India has enjoyed a sharp relaxation of financial tensions. The positive trend continues in EM Asia as a whole.

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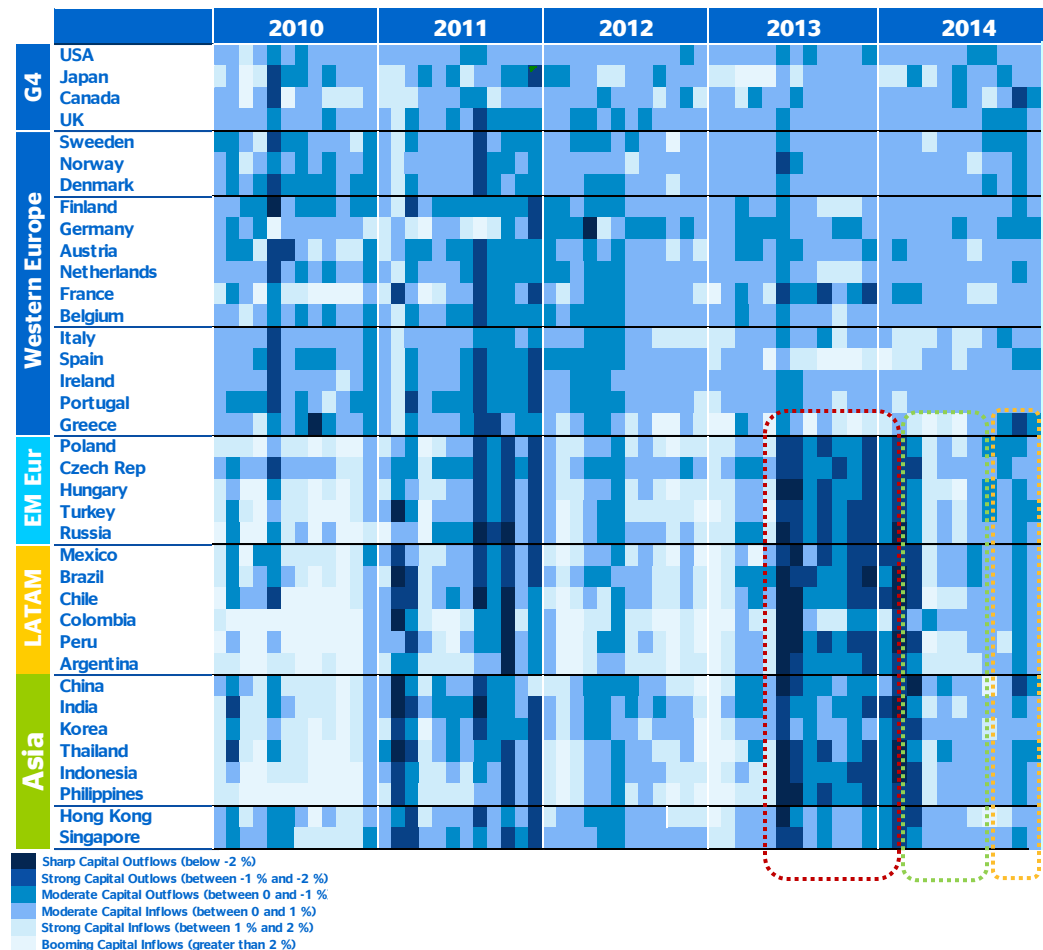
International financial markets, global risk aversion and capital flows

Capital flows back to normal, still waiting for the Fed

BBVA Country Portfolio Flows Map

(Country flows over total assets)

Source: BBVA Research



- **Portfolio flow appetite** (according to EPFR data) **back to neutral** respect to the previous quarter. The 2Q-3Q strong recovery moderates
- The October negative flows among EMs were reversed in November. **A positive balance nonetheless in 4Q.**
- **Policy divergent paths:** fears of an earlier Fed's normalisation have diluted while those of the ECB's commitment to a firm QE (and not only a credit easing) have gained ground.
- We expect a net negative effect for portfolio outflows.

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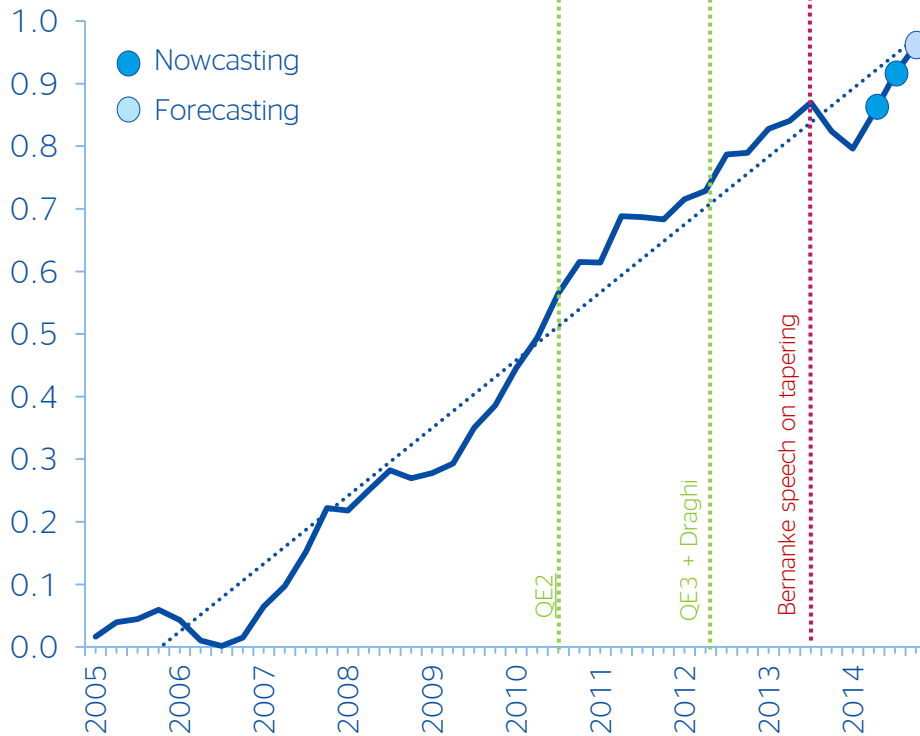
International financial markets, global risk aversion and capital flows

Capital flows above pre-tapering levels

BBVA cumulative EM portfolio flows (BoP)

(Country flows over total assets cumulated since 2005)

Source: BBVA Research

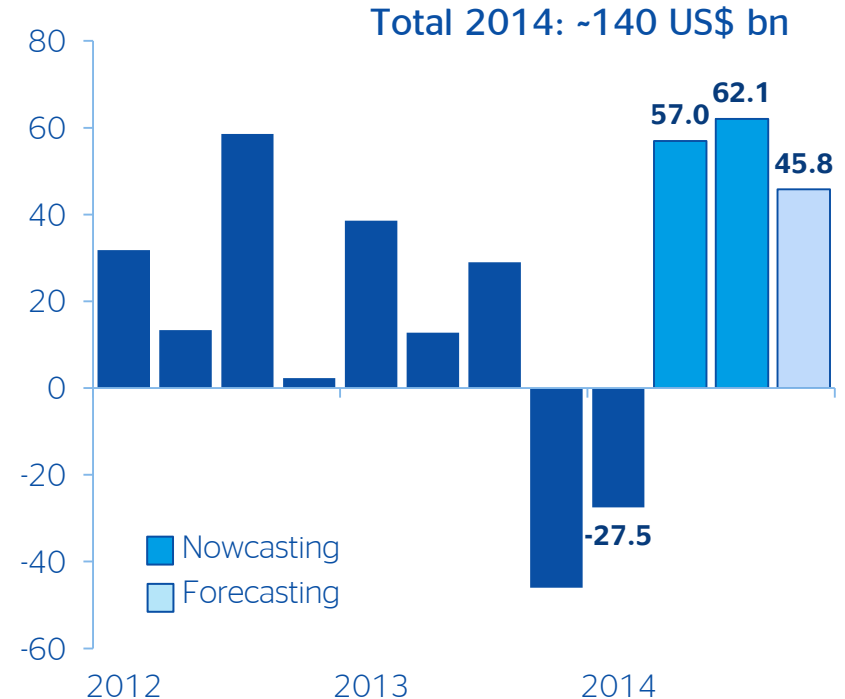


Emerging markets portfolio flows back to Long-term trend and above pre-tapering levels

BBVA EM portfolio flows (BoP)

(EM portfolio flows to EM in USD bn)

Source: BBVA Research



Three consecutive quarters in positive after last year's slump

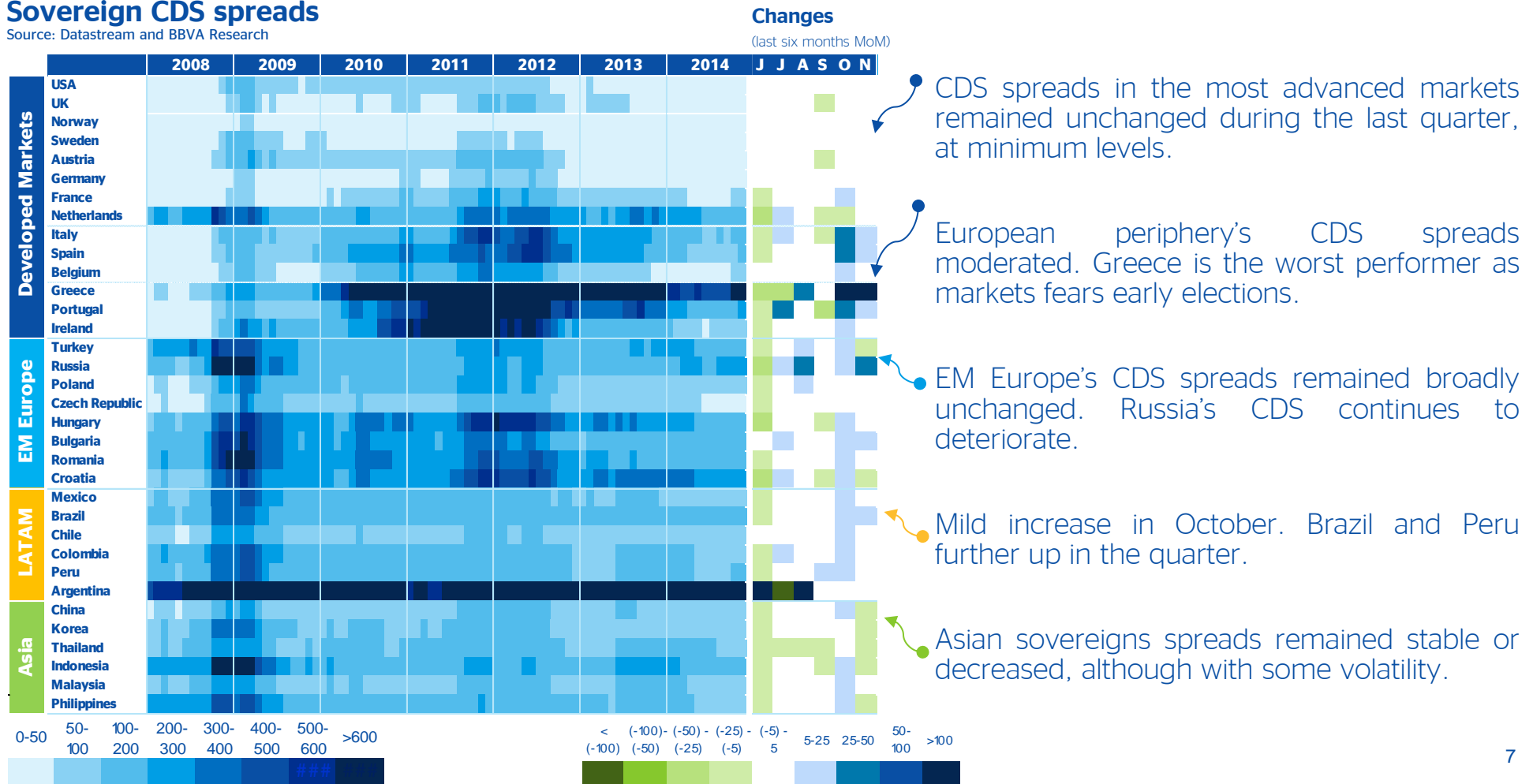
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Sovereign markets and rating agencies

Risk premiums stable excepts Russia and Greece

Sovereign CDS spreads

Source: Datastream and BBVA Research



CDS spreads in the most advanced markets remained unchanged during the last quarter, at minimum levels.

European periphery's CDS spreads moderated. Greece is the worst performer as markets fears early elections.

EM Europe's CDS spreads remained broadly unchanged. Russia's CDS continues to deteriorate.

Mild increase in October. Brazil and Peru further up in the quarter.

Asian sovereigns spreads remained stable or decreased, although with some volatility.



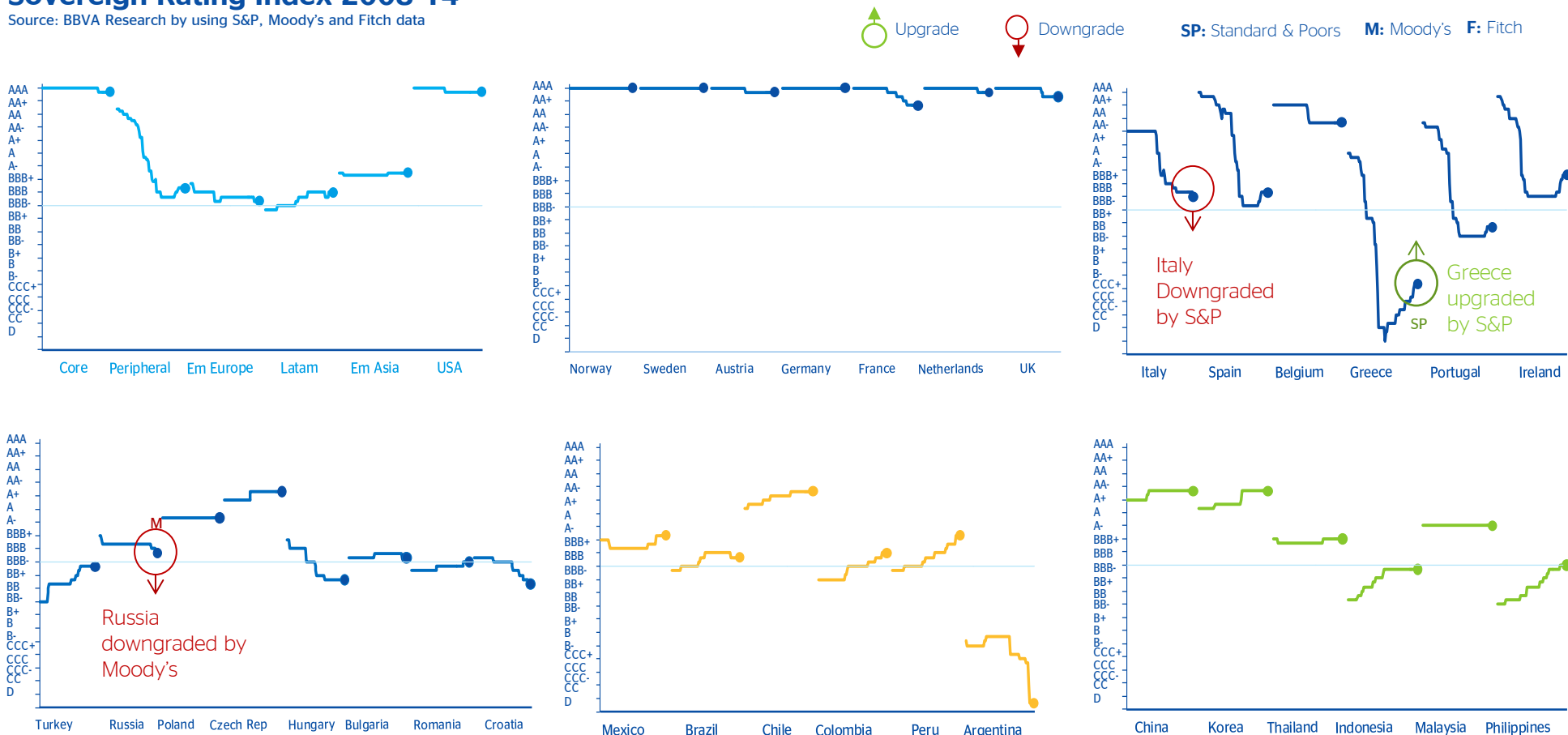
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Sovereign markets and agencies' ratings

Russia, Japan & Italy downgraded. Greece recovers

Sovereign Rating Index 2008-14

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.



Country Risk Report

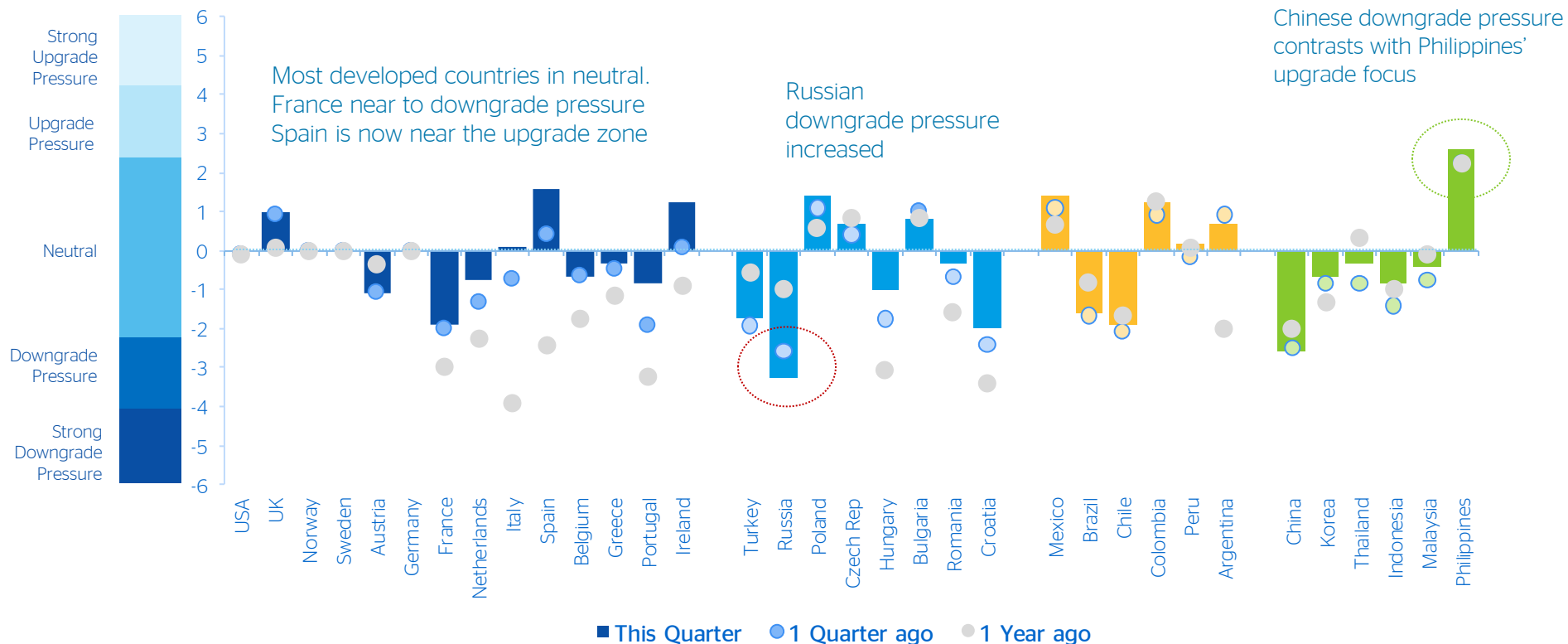
Sovereign Markets & Ratings Update

Downgrade pressure increasing in Russia

Agencies' Rating Downgrade Pressure Gap

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

Source: BBVA Research





Country Risk Report

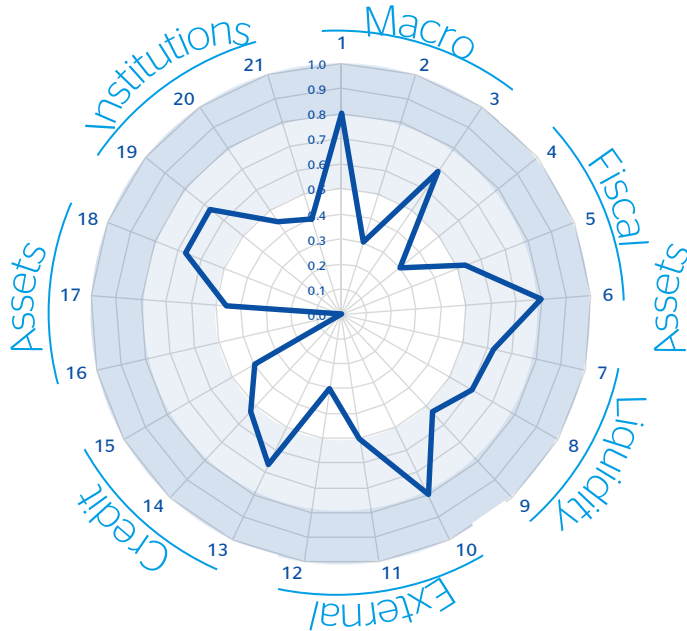
Macroeconomic vulnerability and risk assessment

Macro, fiscal and external risks still high in developed countries

Developed countries: vulnerability radar 2014

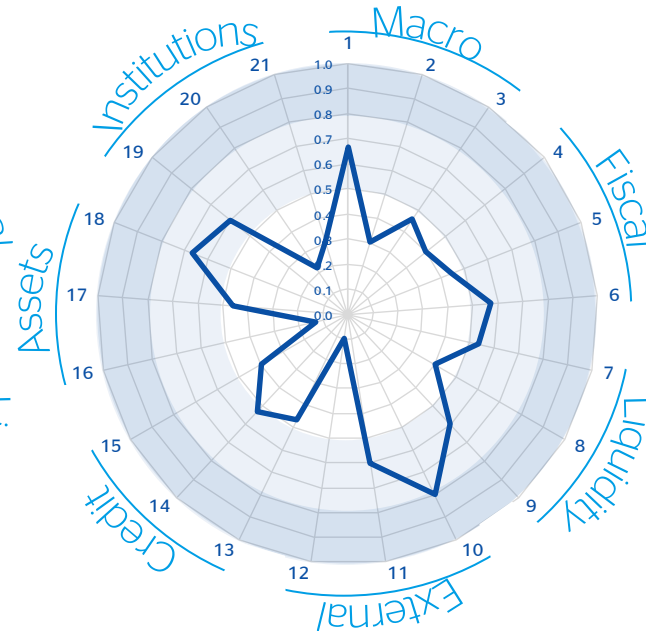
(Relative position for the emerging developed countries. Max risk=1, Min risk=0)
Source: BBVA Research

G7



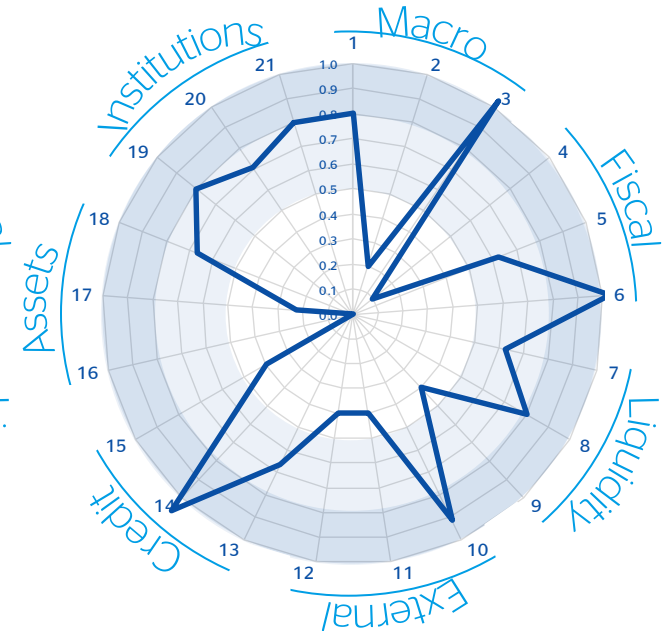
Growth is still low and fiscal risks (high public debt) remain

Core Europe



External debt should be monitored

Periphery Europe



Unemployment still high and credit de-levering should continue despite the improvements in flows



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



Country Risk Report

Macroeconomic vulnerability and risk assessment

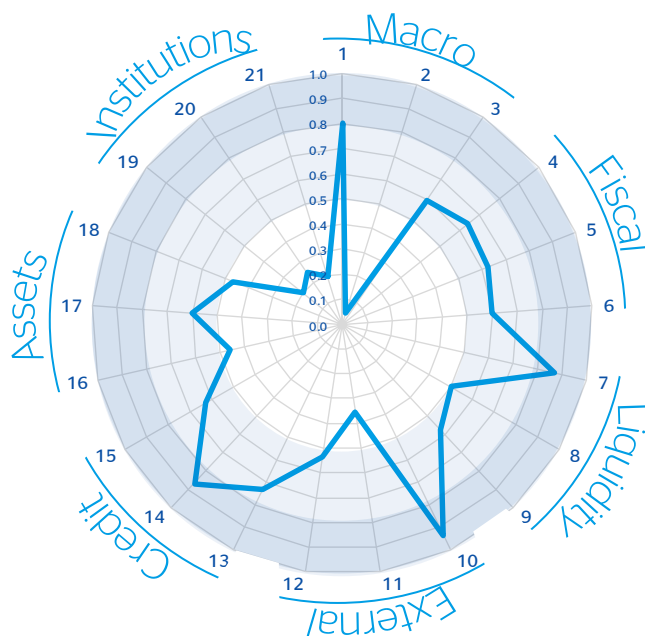
Liquidity & External (EM Europe), Macro (Latam) and Fiscal (Asia)

Emerging countries: vulnerability radar 2014

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

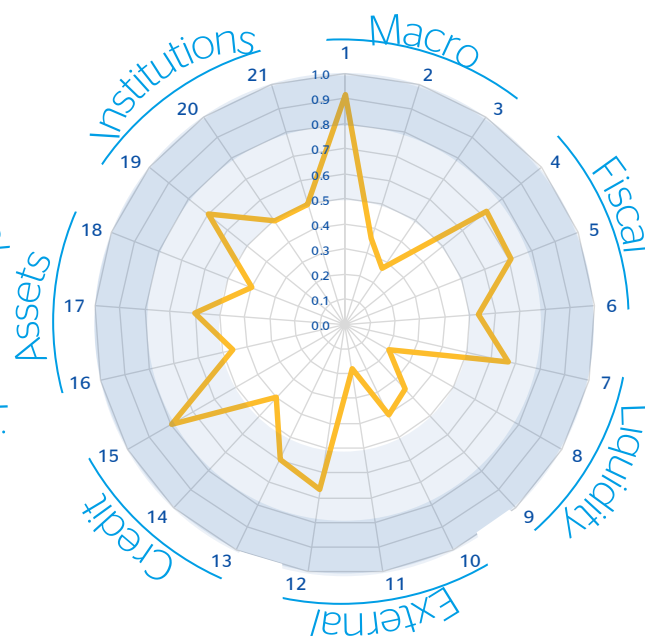
Source: BBVA Research

Emerging Europe



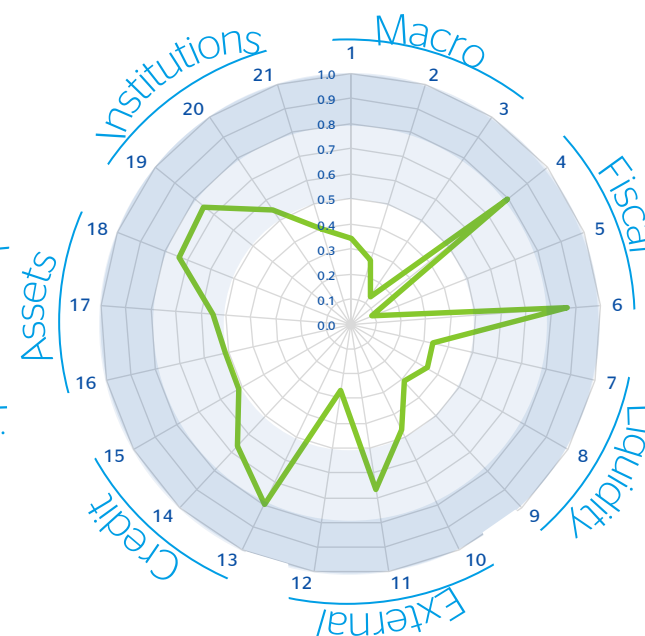
Growth is still low, posing external risks.
De-leveraging will continue

Latam



External risks should be monitored,
especially in a low-growth environment

Emerging Asia



Household credit to monitor.
High public debt in some countries



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

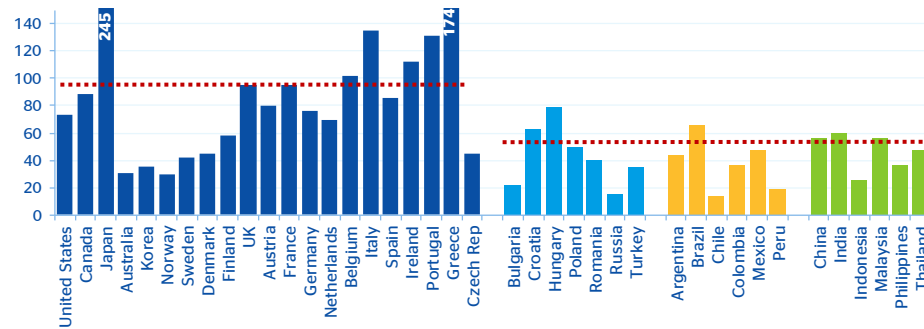
Country Risk Report

Macroeconomic vulnerability and risk assessment

Public and private debt chart gallery

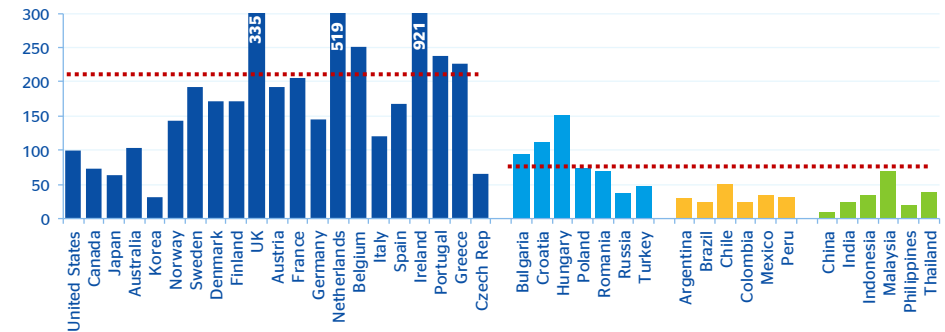
Gross Public Debt 2014

(% GDP)
Source: BBVA Research and IMF



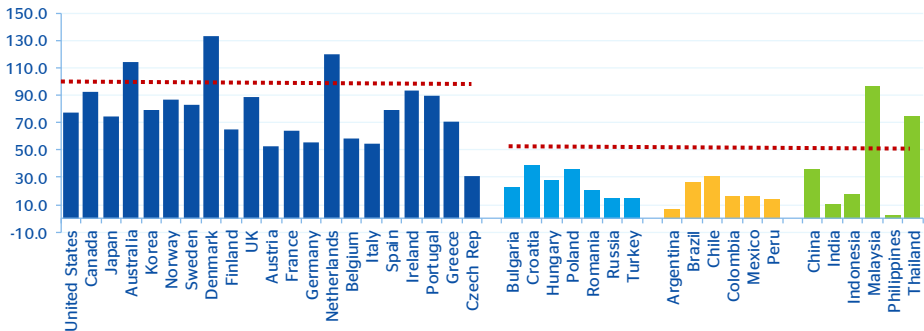
External Debt 2014

(% GDP)
Source: BBVA Research and IMF



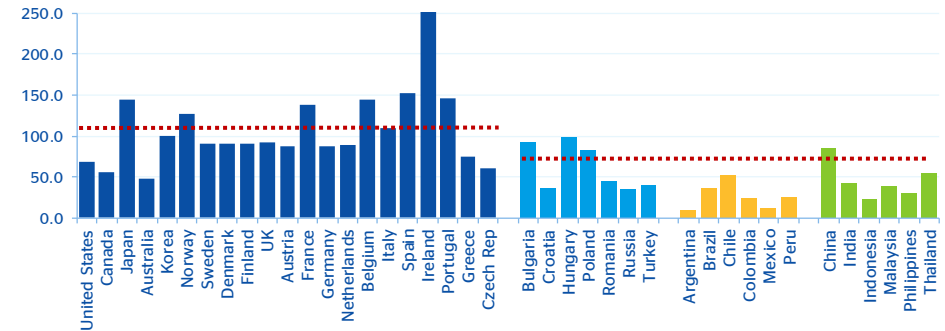
Household Debt 2014

(% GDP)
Source: BBVA Research and BIS



Corporate Sector Debt 2014

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



..... Risk thresholds

Country Risk Report

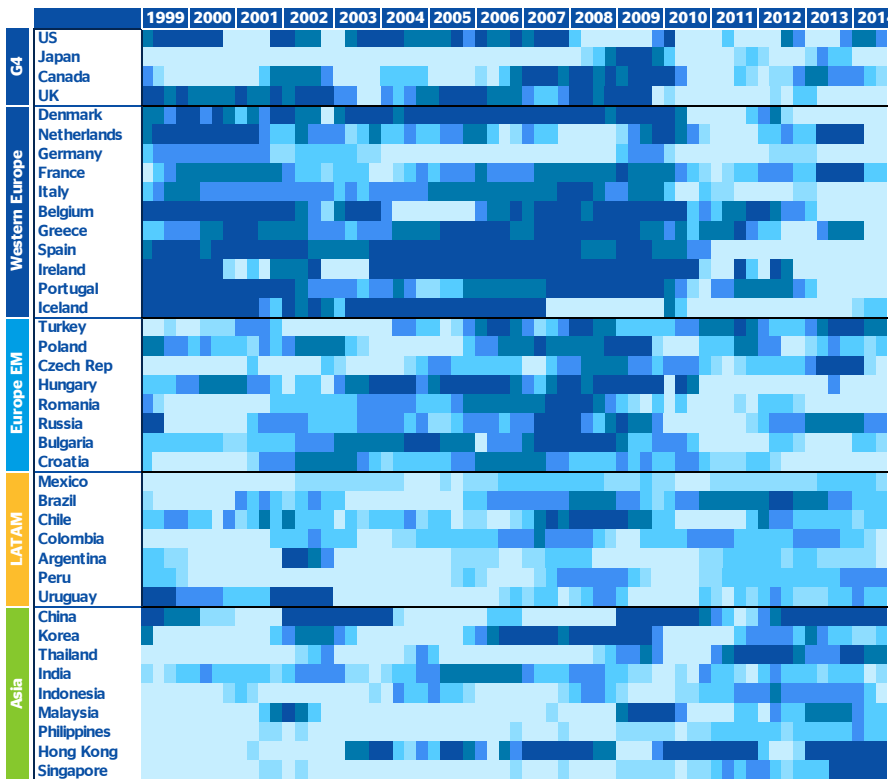
Macroeconomic vulnerability and risk assessment

Signs of Europe's deleveraging stabilizing. Some EM to be monitored

Private credit colour map (1999-2014 Q3)

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

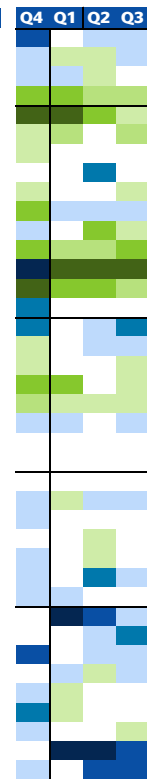
Source: BBVA Research and Haver



Booming: Credit/GDP growth is higher than 5%
 Excess Credit Growth: Credit/GDP growth between 3%-5%
 High Growth: Credit/GDP growth between 2%-3%
 Mild Growth: Credit/GDP growth between 1%-2%
 Stagnant: Credit/GDP is declining between 0%-1%
 De-leveraging: Credit/GDP growth declining
 ... Non Available

QoQ growth

Last four quarters up until Q3-2014



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%

- USA and Canada leverage still growing, but it moderates
- Central and periphery Europe starting to show signs of improvement
- Turkey's credit should still be monitored. Russia decelerates
- Brazilian credit moderates while Peruvian credit grows moderately
- China's credit growth still high, but moderated during the quarter. Hong Kong & Singapore still at high levels

Country Risk Report

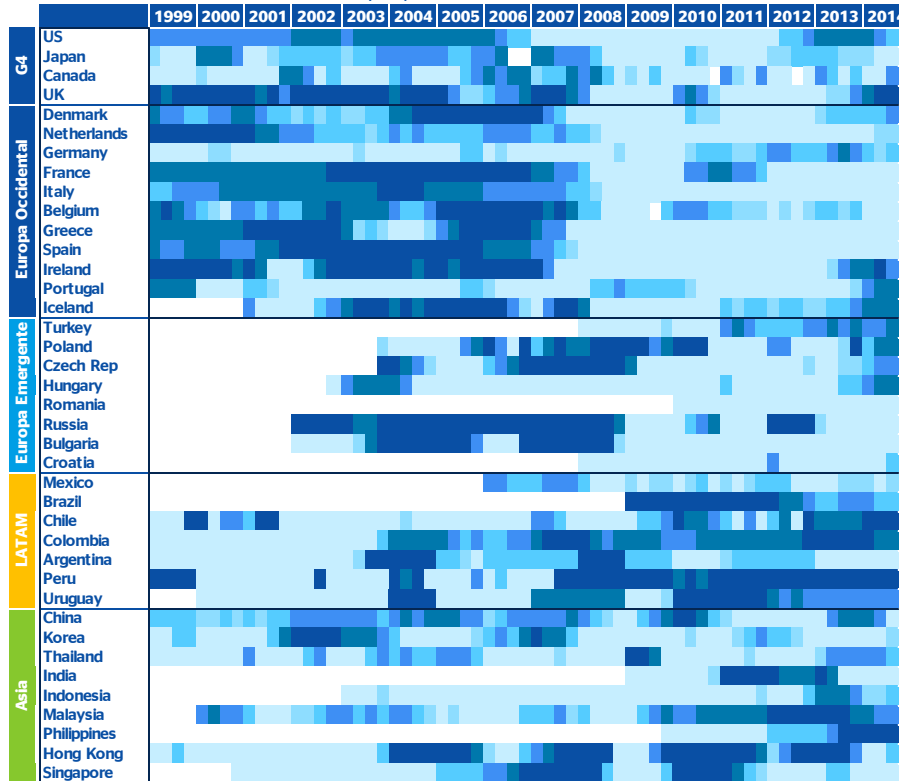
Macroeconomic vulnerability and risk assessment

Signs of recovery in European housing. Mild correction in China

Real housing prices colour map (1999-2014 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 Q3-2014



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%

- Growth in USA cooling down but UK is accelerating
- First signs of recovery start to appear in central and periphery Europe
- Turkey, Poland and Hungary showing strong growth
- Chile accelerates, Colombia moderates and Peru maintains high growth
- China's housing prices decrease, but still strong in HK and Philippines



Country Risk Report

Macroeconomic vulnerability and risk assessment

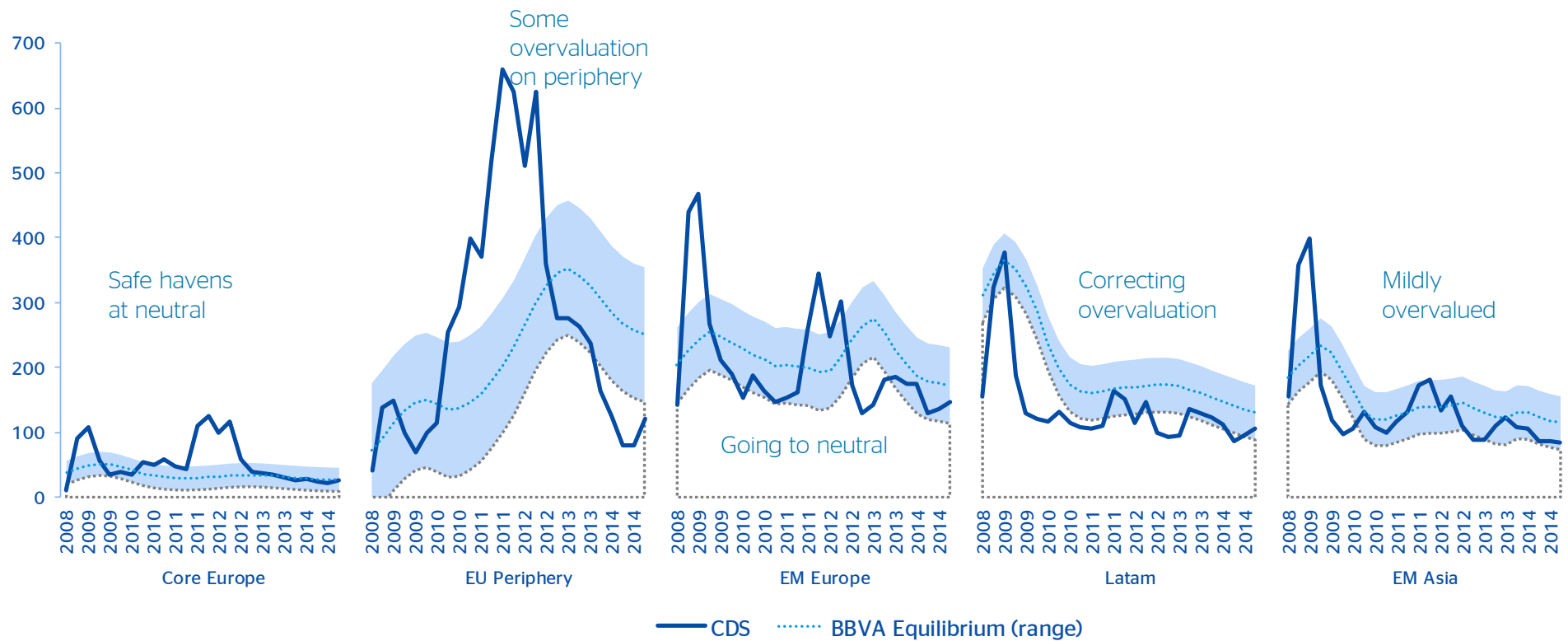
Most regions correcting previous overvaluation

CDS and equilibrium risk premium

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

*EU Periphery excludes Greece

Source: BBVA Research and Datastream





Country Risk Report

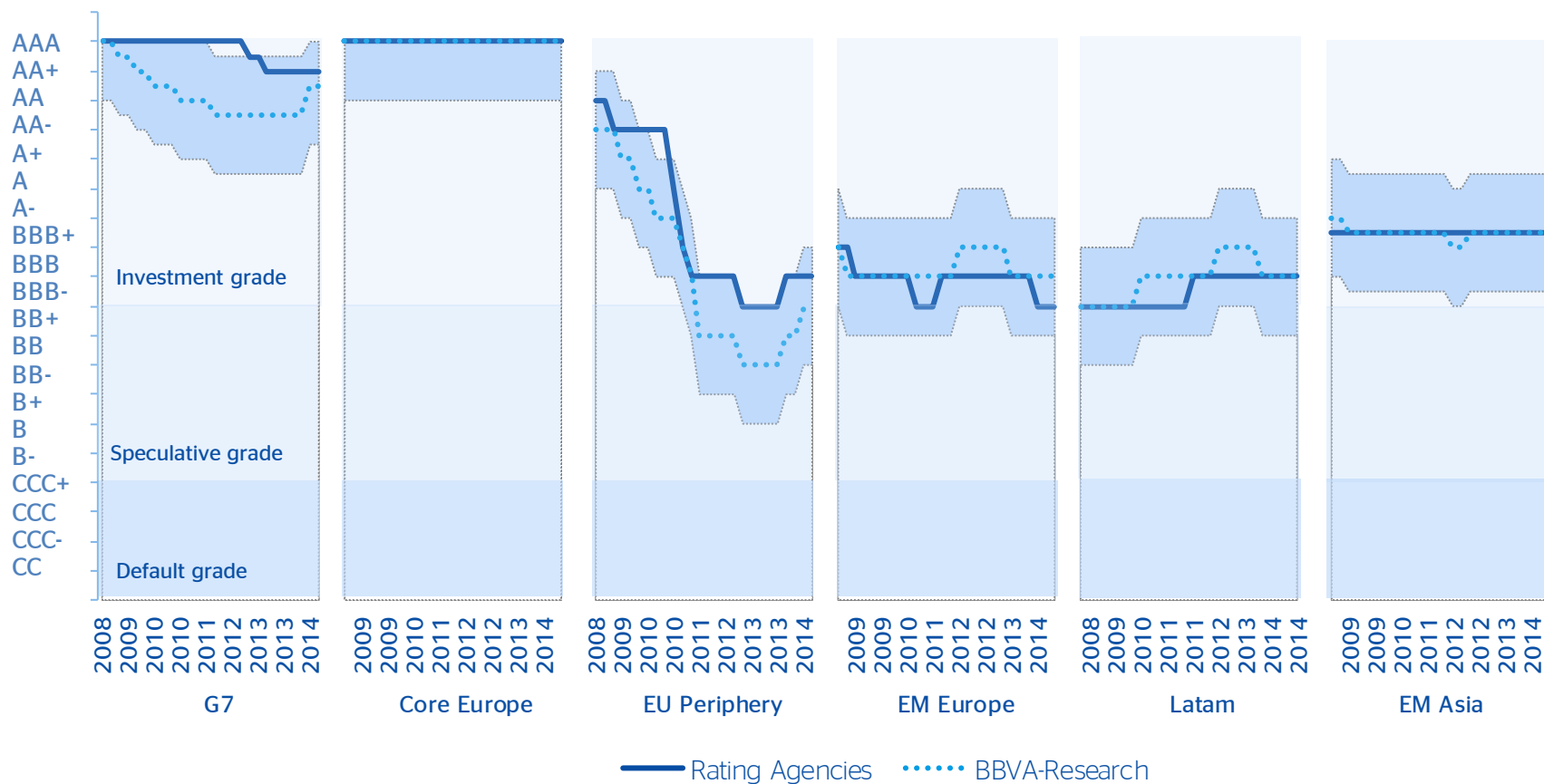
Macroeconomic Vulnerability and Risk Assessment

Europe recovers while EM stable

Agencies' Sovereign rating vs. BBVA Research

(Agencies' Rating and BBVA scores +/- 1 std dev)

Source: Standard & Pooers, Moody's, Fitch and BBVA Research



Country Risk Report

Macroeconomic vulnerability and risk assessment

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 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	-1.9	-1.6	73	-2.2	99	3.6	24	17	33	2.2	2.4	6.0	4.4	2.4	12.6	77	68	230	-0.6	-1.4	-1.6
Canada	-1.6	-0.6	88	-3.5	72	-6.4	16	15	21	1.5	1.5	7.3	0.4	-0.4	17.0	93	55	142	-1.1	-1.9	-1.8
Japan	-5.9	-1.2	245	0.0	63	-17.9	58	21	8	0.3	2.9	3.4	-0.9	4.8	11.9	74	144	79	-0.9	-1.6	-1.3
Australia	-2.2	-0.2	31	-3.3	102	-4.7	5	7	47	3.1	2.5	6.0	5.1	8.5	1.5	115	48	122	-1.0	-2.0	-1.7
Korea	-0.2	-2.1	35	5.3	31	9.7	3	11	12	3.4	1.7	3.4	2.6	0.4	1.2	79	99	194	-0.2	-0.5	-1.0
Norway	-8.5	-1.0	30	10.1	144	-3.5	-7	8	45	1.6	2.1	3.2	-4.6	2.3	21.4	87	127	343	-1.3	-2.2	-1.9
Sweden	-1.5	-1.8	42	5.3	192	-6.1	9	19	46	1.9	-0.2	7.8	7.4	1.3	11.4	83	91	285	-1.2	-2.3	-1.9
Denmark	0.1	-0.2	45	5.6	172	-0.7	8	15	40	0.9	0.8	5.6	-9.3	3.8	34.8	133	91	364	-0.9	-2.4	-1.9
Finland	-0.2	-0.4	58	5.6	172	0.6	8	10	84	0.9	0.8	5.6	1.4	-10.4	11.7	65	90	162	-1.4	-2.2	-1.9
UK	-2.3	-0.5	95	-4.1	335	6.9	12	6	28	3.0	1.5	2.9	-12.5	10.5	2.5	89	91	103	-0.4	-1.6	-1.7
Austria	-0.1	0.3	80	1.4	193	1.4	12	14	77	0.7	1.5	4.9	-2.3	2.9	-12.8	53	88	124	-1.3	-1.3	-1.8
France	-0.9	-0.3	96	-1.7	205	-1.6	18	13	63	0.4	0.7	9.5	1.6	-0.9	6.6	65	138	126	-0.6	-1.4	-1.4
Germany	1.9	-0.7	76	6.7	145	-0.4	7	7	62	1.3	0.9	6.7	-1.3	1.2	10.2	55	87	58	-0.8	-1.8	-1.6
Netherlands	1.1	-0.2	69	10.5	519	0.5	13	16	57	0.8	1.4	8.3	-4.9	0.8	12.3	120	89	104	-1.2	-2.1	-1.8
Belgium	1.0	0.5	102	-1.0	252	-1.4	15	12	63	1.0	0.2	8.6	-1.2	-0.8	20.2	58	144	63	-0.9	-1.6	-1.4
Italy	4.0	1.9	135	0.9	121	-1.2	29	26	36	-0.3	0.3	12.5	-1.8	-4.2	19.8	54	110	84	-0.5	0.0	-0.4
Spain	1.9	1.0	85	0.1	167	-1.6	21	14	43	1.3	-0.4	23.8	-14.0	-2.9	17.8	80	152	123	0.0	-1.0	-1.0
Ireland	0.5	0.4	112	4.9	921	-3.0	8	1	63	4.8	1.0	11.3	-41.5	3.7	15.0	93	264	184	-0.9	-1.4	-1.7
Portugal	2.3	0.5	131	-1.3	237	-1.5	21	12	71	0.9	0.0	13.7	-15.6	6.6	0.7	90	146	139	-0.7	-0.9	-1.0
Greece	5.4	-0.6	174	1.4	226	-3.4	15	6	86	0.9	-0.2	26.6	-3.9	-3.8	4.7	71	75	94	0.2	0.3	-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* 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 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	-0.8	0.4	22	0.8	93	-2.6	4	1.5	44	1.5	-0.4	11.3	0.4	-3.9	18.4	22	92	98	-0.3	0.2	0.1
Czech Rep	0.7	-0.9	44	-0.8	65	-8.1	8	14	36	2.6	1.2	7.6	-1.2	4.0	3.5	31	60	83	-1.0	-0.2	-1.0
Croatia	-2.8	1.7	63	-0.8	112	-1.4	11	2.3	34	-0.8	0.0	20.2	-0.5	2.7	5.9	39	36	91	-0.6	0.0	-0.2
Hungary	1.8	1.1	79	3.5	151	-7.3	24	1.5	65	3.3	0.0	8.0	-6.4	6.4	-4.2	28	98	115	-0.7	-0.3	-0.6
Poland	-0.3	-1.0	49	-1.3	73	-2.0	10	2.4	57	3.2	-0.4	12.1	1.3	5.7	9.1	36	82	107	-1.0	-0.6	-0.7
Romania	-0.2	-1.1	40	-1.0	69	1.0	9	1.4	50	2.4	2.8	4.7	-5.0	-2.1	20.2	21	44	124	-0.1	0.3	0.0
Russia	-0.3	-1.4	16	3.1	37	-5.0	2	3.9	17	0.5	6.3	5.3	3.3	-6.4	-3.5	15	34	127	0.8	1.0	0.8
Turkey	1.2	-0.5	35	-5.8	46	0.6	26	1.0	31	2.5	8.9	9.0	5.2	6.0	0.6	15	39	135	1.2	-0.2	0.0
Argentina	-0.6	-20.0	44	-1.0	28	-18.4	6	1.0	30	-1.7	42.0	7.3	0.0	-28.4	162.3	6	9	74	-0.1	0.5	0.7
Brazil	1.5	4.0	66	-3.7	24	-5.0	16	11.9	22	1.3	6.2	5.4	2.6	1.1	3.4	27	37	126	-0.1	0.1	0.1
Chile	-1.0	4.0	14	-1.3	50	-10.1	3	2.3	16	2.3	3.7	6.0	1.1	9.9	3.1	30	53	221	-0.3	-1.6	-1.4
Colombia	0.1	-0.1	36	-3.9	24	-5.4	4	3.8	28	4.7	3.4	9.5	-0.1	7.1	-3.1	16	24	219	1.4	0.4	0.4
Mexico	-1.4	-0.2	48	-1.7	34	1.8	12	2.5	34	2.1	4.0	5.0	0.6	0.4	12.6	15	12	105	0.7	0.4	0.6
Peru	-0.1	-1.3	19	-5.5	31	7.2	1	9.0	58	2.6	3.3	6.0	4.2	11.8	1.9	14	26	95	0.9	0.4	0.6
China	-0.1	-7.5	56	2.9	7	8.9	6	6.7	...	7.4	2.8	4.1	11.2	-1.6	-5.1	36	86	217	0.5	0.5	0.5
India	-2.5	-3.9	60	-1.0	23	-3.3	12	3.0	7	5.6	7.7	11.8	0.6	-11.1	37.4	10	43	79	1.2	0.6	0.1
Indonesia	-1.1	-4.9	26	-2.9	34	-7.6	4	2.4	55	5.1	7.0	6.0	-0.3	1.6	19.0	18	23	103	0.6	0.7	0.6
Malaysia	-1.9	-3.5	57	5.1	69	1.8	10	2.6	26	5.2	2.5	3.1	1.1	3.4	4.4	96	--	100	0.0	-0.3	-0.5
Philippines	1.8	-2.7	36	4.6	20	5.3	7	8.5	30	6.3	3.5	7.4	1.6	16.1	17.6	3	30	59	1.2	0.6	0.5
Thailand	-0.3	-2.9	48	2.2	39	1.8	9	2.2	11	0.6	3.2	0.6	5.2	2.5	14.6	74	54	127	1.2	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

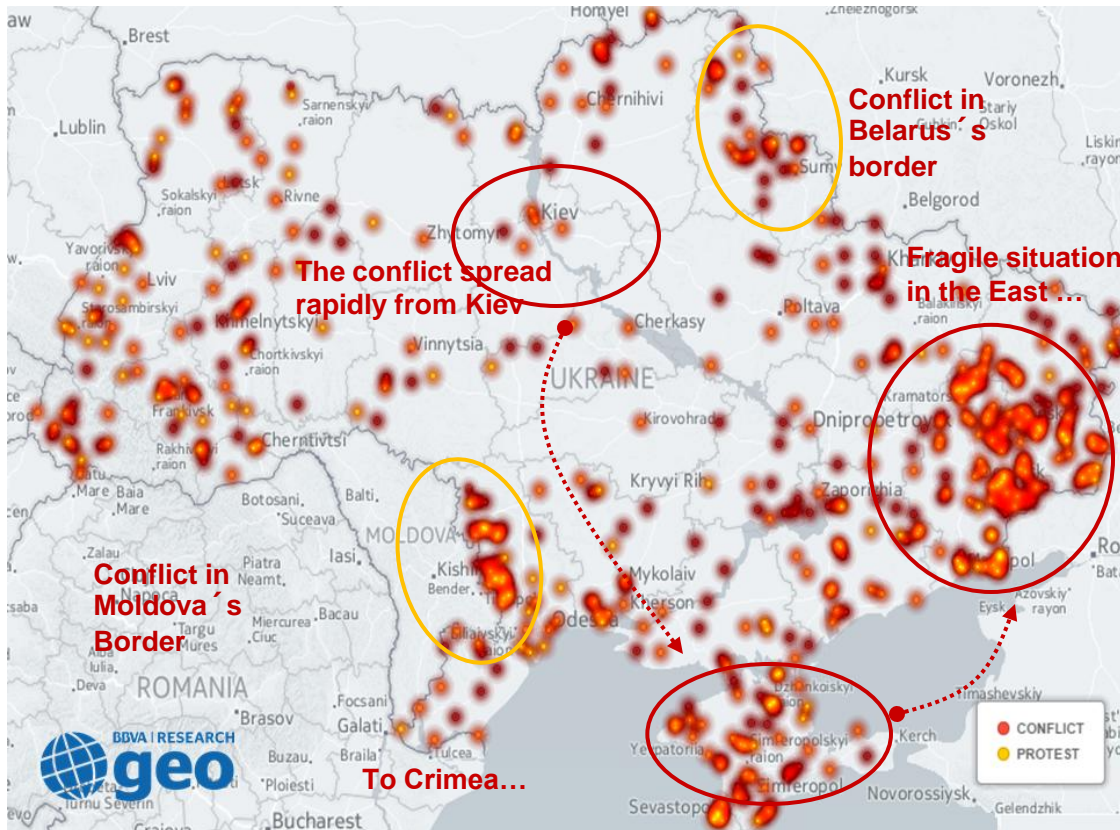
Country Risk Report

Special Topic

The Ukraine-Russia conflict is still alive

The situation in Ukraine: Conflict Index (Protest/total events and conflict/conflict events)

Source: www.gdelt.org & BBVA Research



- The **fragile ceasefire** between the separatists and the government is still in place. The worsening economic activity and the result of elections could increase pressure again.
- The new round of Western sanctions have been imposed. While **sanctions are still not affecting Putin's strategy and popularity** (87% in the Levada polls), **they are proving effective in economic terms**. The economy will stagnate this year, instead of pre-crisis forecasts of 3% growth.
- The **situation in countries with large Russian populations remains tense** (Moldova, Belarus, Georgia and, to a lesser extent, the Baltic states).

Country Risk Report

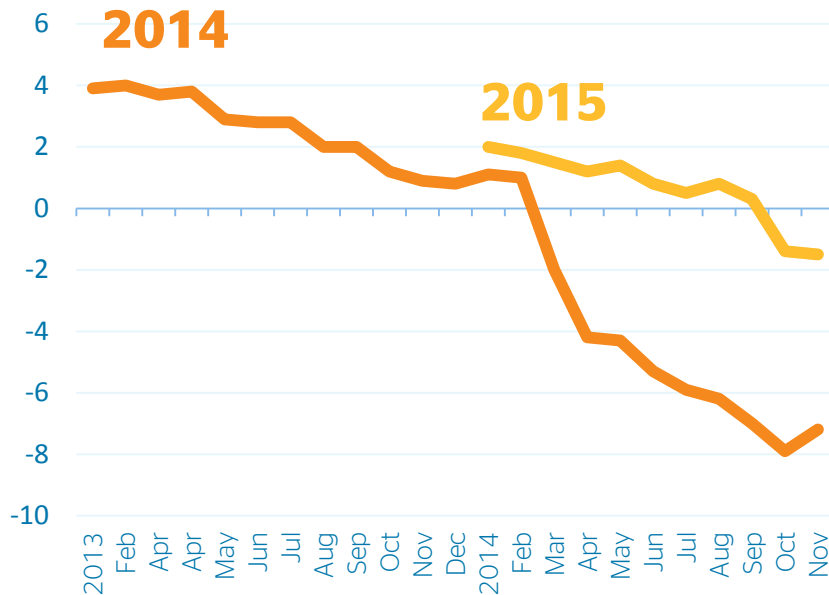
Special Topic

Economic costs for both countries are very high

Ukraine:

Expectations of economic activity 2014-15

Source: Consensus forecasts & BBVA Research

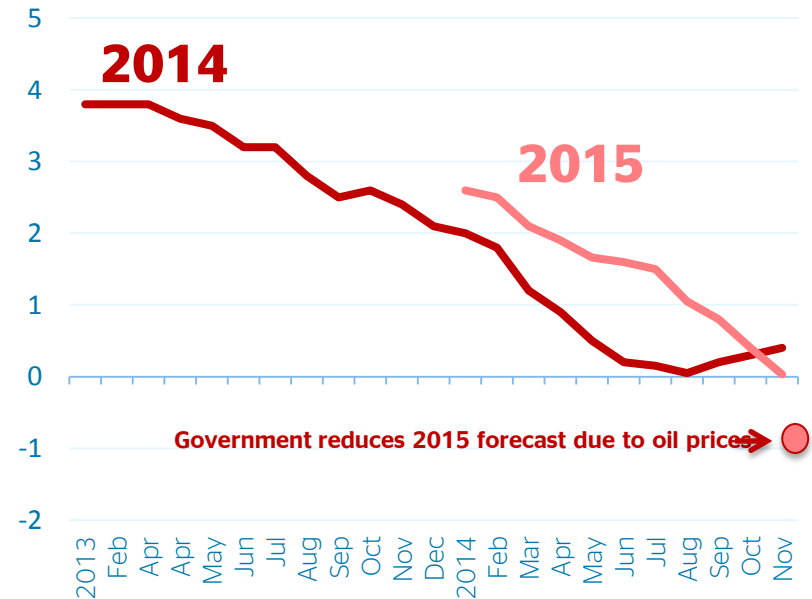


The economic situation is becoming critical in Ukraine, with fears of default despite official assistance

Russia:

Expectations of economic activity 2014-15

Source: Consensus forecasts & BBVA Research



Deterioration is also evident in Russia. 2015 will continue to test Putin's support

Russian sanctions' spillovers can be on several fronts

Russian economic sanctions network

Source: www.gdelt.org & BBVA Research

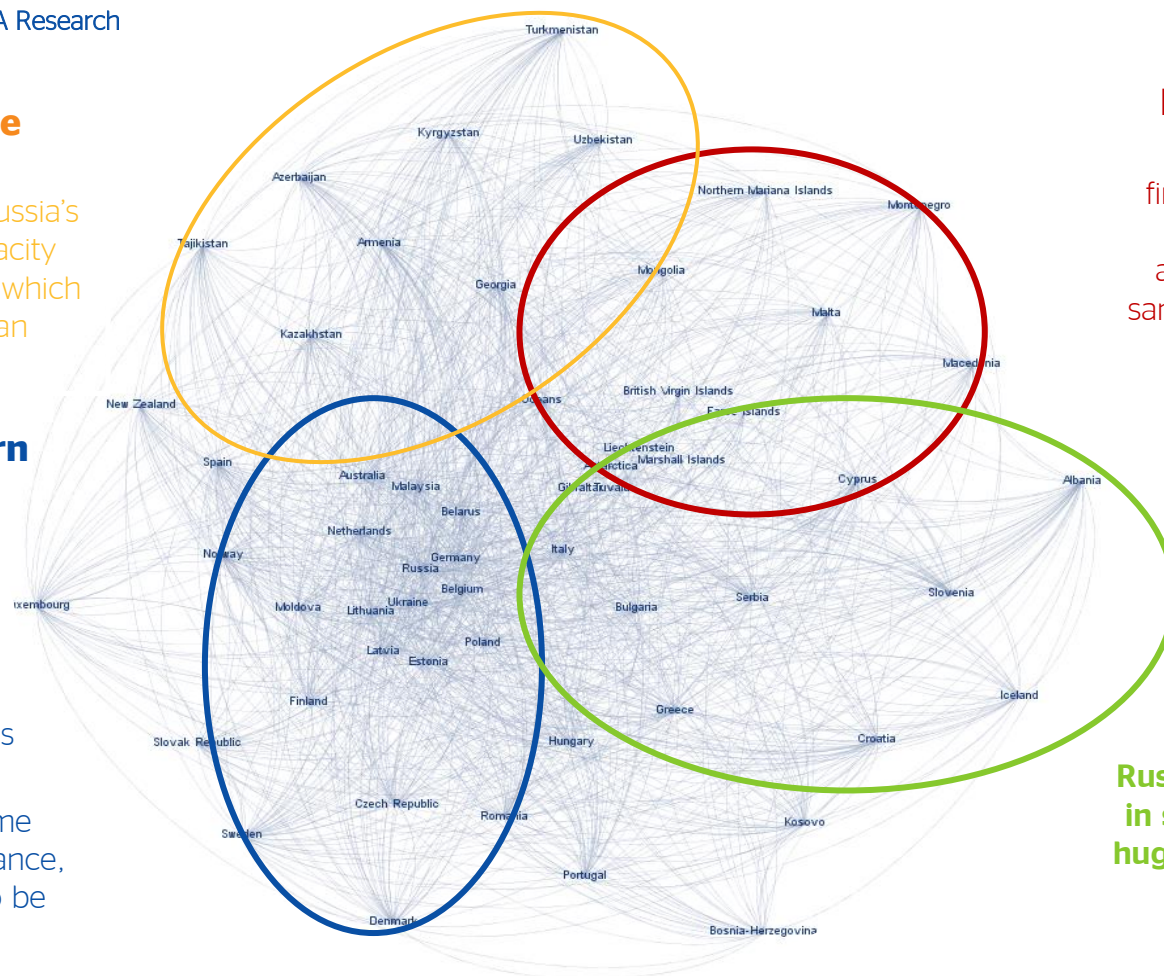
Central Asian trade

Technology exchange restrictions will affect Russia's medium/long-term capacity to extract new energy, which could affect Central Asian relationships

Central and Eastern Europe trade

The trade effects of commercial sanctions imposed on Russia will spread to other countries, particularly traditional trade partners in the East

External demand of some European countries (France, Germany, Italy) will also be affected



Financial circle

Some countries, financial centres and tax havens will be affected by financial sanctions imposed on Russia.

Investment circle

Russian investments in some regions are huge (i.e. the Balkan states)

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 differential 5 years ahead	3.6	1.1	Higher	Baldacci et al (2011). Assessing fiscal stress. IMF WP 11/100
Gross public debt	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 Commission (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 Commission (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 (8th percentile)	Lower	World Bank governance Indicators

Methodology: models and BBVA country risk

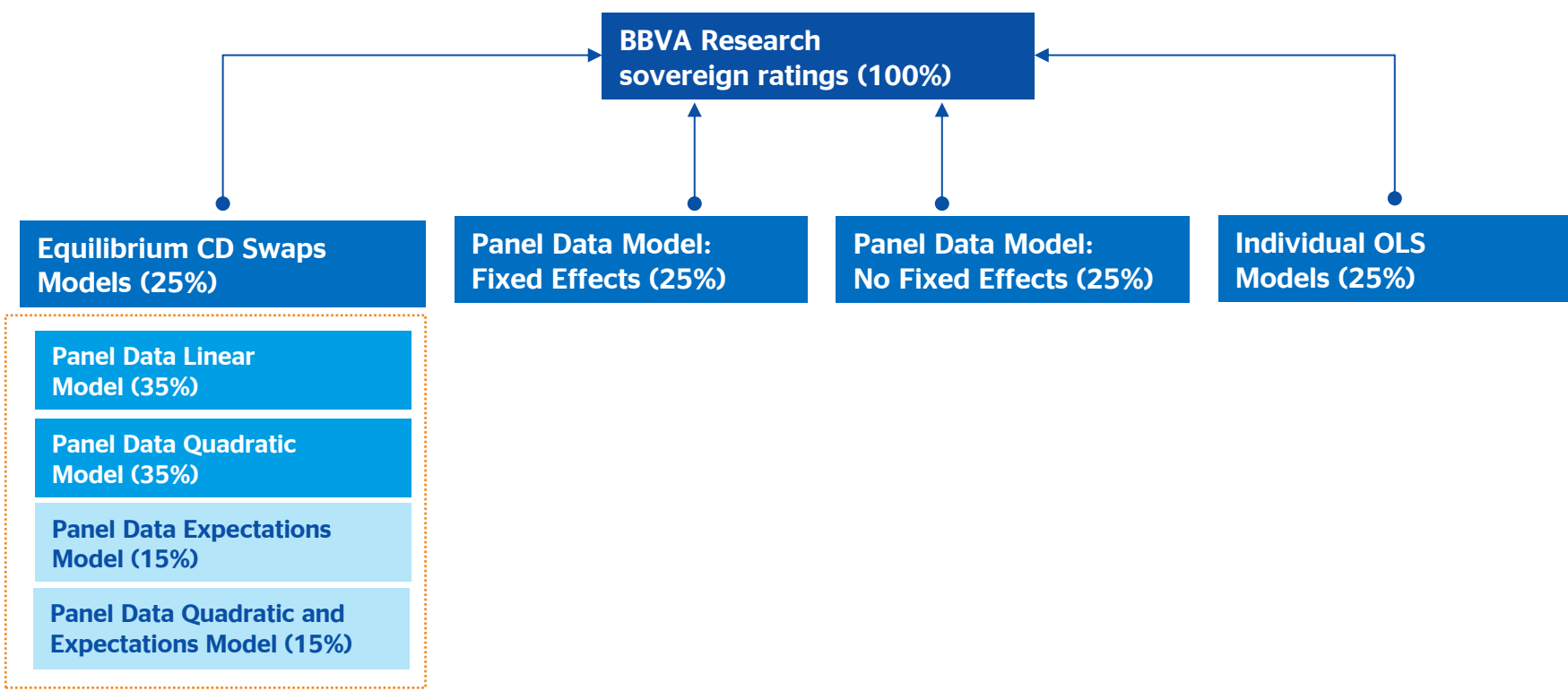
- **BBVA Research sovereign ratings methodology:** We compute our sovereign ratings by averaging four alternative sovereign rating models developed at BBVA Research:
 - **Credit Default Swaps Equilibrium Panel Data Models:** This model estimates actual and forecast equilibrium levels of CD Swaps for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