Country Risk Report

A Quarterly Guide to Country Risks

September 2017

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Summary: Financial markets' risk-on mood tightens sovereign spreads beyond fundamentals

Country Risk

Ratings agencies

- Greece was upgraded by Moody's and Fitch. Chile was downgraded by S&P and Fitch. Qatar was downgraded by the three agencies. South Africa was downgraded by Moody's ➡

Financial Markets

- **Global risk aversion has been steadily decreasing since Feb-2016, strongly tightening sovereign spreads.** The bulk of sovereign CDS are at, or close to, their minimum historical levels, which should warn us that there is no much room for further decreases ➡
- The continued decrease in sovereign spreads has caused that we continue to see more countries with upgrade rather than downgrade pressure ➡
- The reduction in downgrade pressure was most noticeable in LatAm, whereas upgrade pressure increased specially in EM Europe and Asia ➡

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- Overall, the net aggregate of vulnerabilities seem to be improving in most EMs (less external vulnerabilities) and seems stable in the Periphery of EU, lower private leverage, while old problems persist (high unemployment, high public and external debt, etc.) ➡
- Leverage growth continues to moderate in China, although housing price growth is still high. Its accumulated excess leverage still prompts a significant warning ➡
- However, **we observe signs of fast growth in private leveraging and in housing prices** in some Advanced Economies such as Canada, Australia, Norway and some North-European countries (Belgium, Finland). More recently, some warning signals are also showing up in USA related to faster increase of credit. ➡

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   Market downgrade/upgrade pressure

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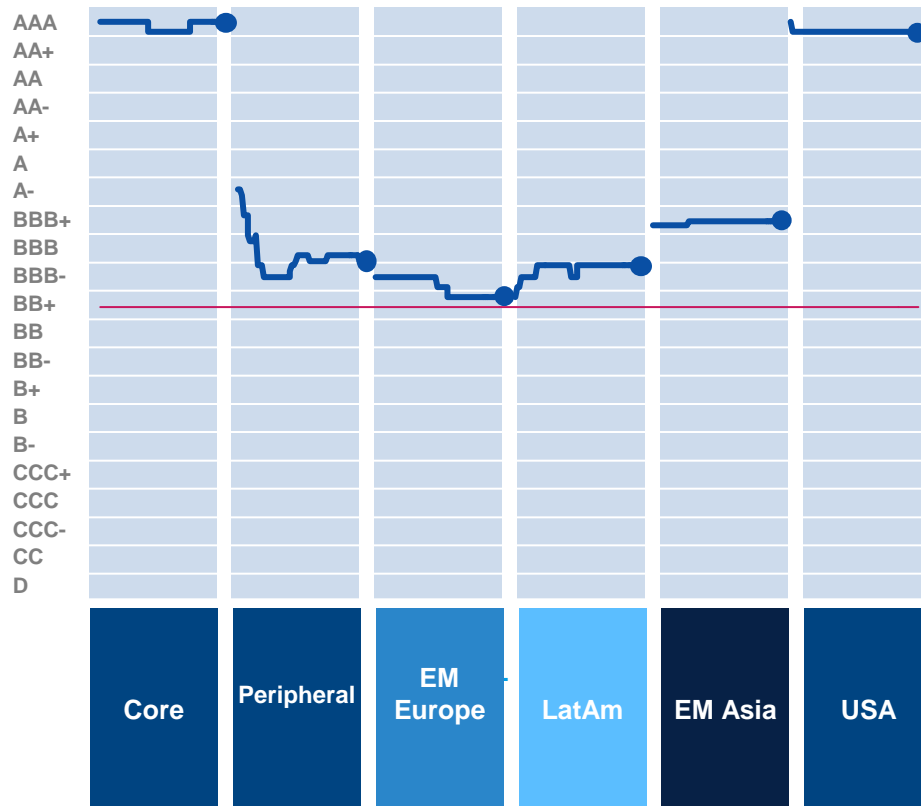• Vulnerability Indicators Table by Country

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01

Sovereign Markets and Ratings Update

Evolution of sovereign CDS by country
Evolution of sovereign ratings
Market downgrade/upgrade pressure

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Sovereign markets and rating agencies update

Sovereign Rating Index 2011-17

- No major changes in the average rating of the main economic areas

- **Greece** was upgraded by Moody's and Fitch. Slovenia and Iceland were upgraded by S&P and Fitch respectively

- **Chile** was downgraded by S&P and Fitch. **Qatar** was downgraded by the three agencies. South Africa downgraded by Moody's and Venezuela by S&P
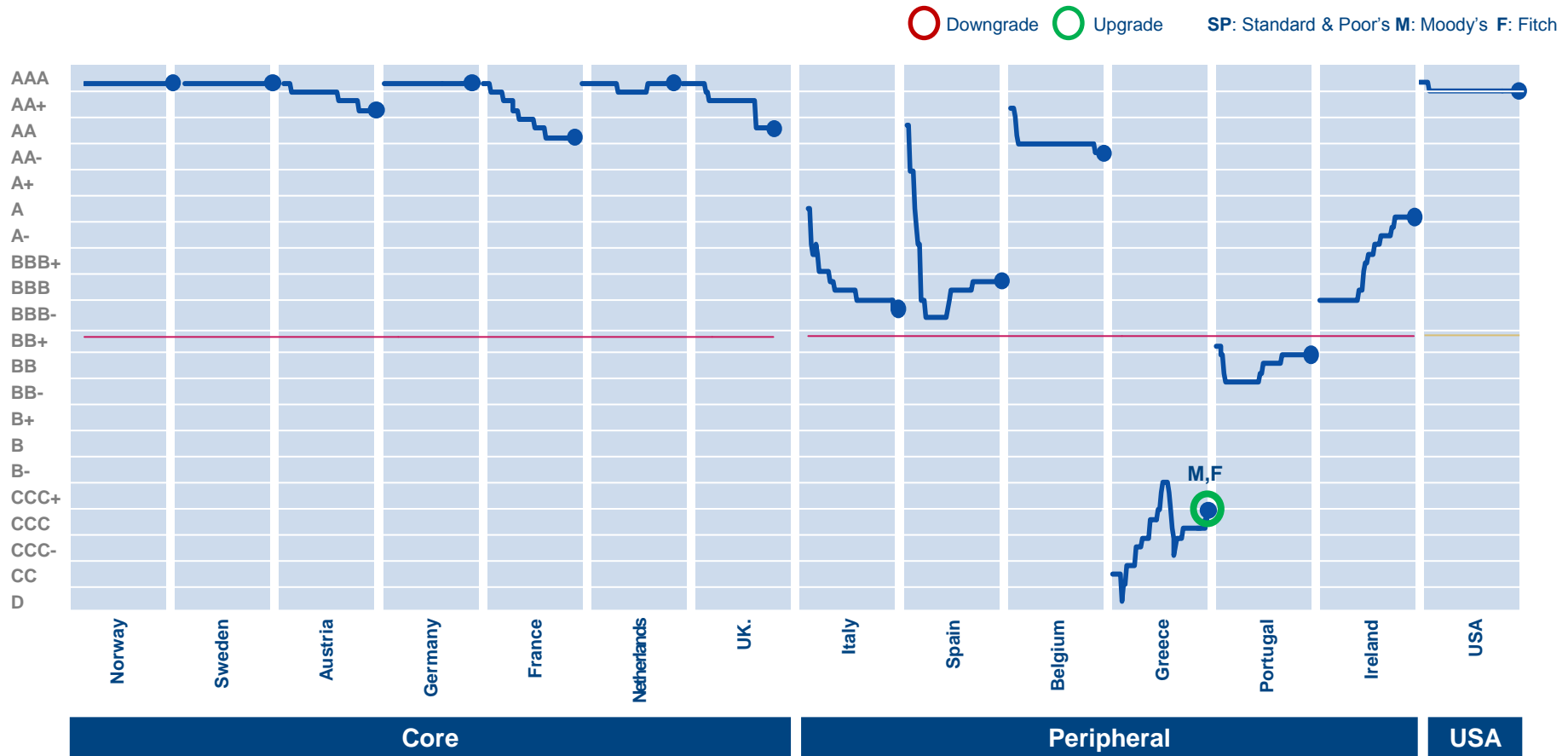
Source: BBVA Research by using S&P, Moody's and Fitch data

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.
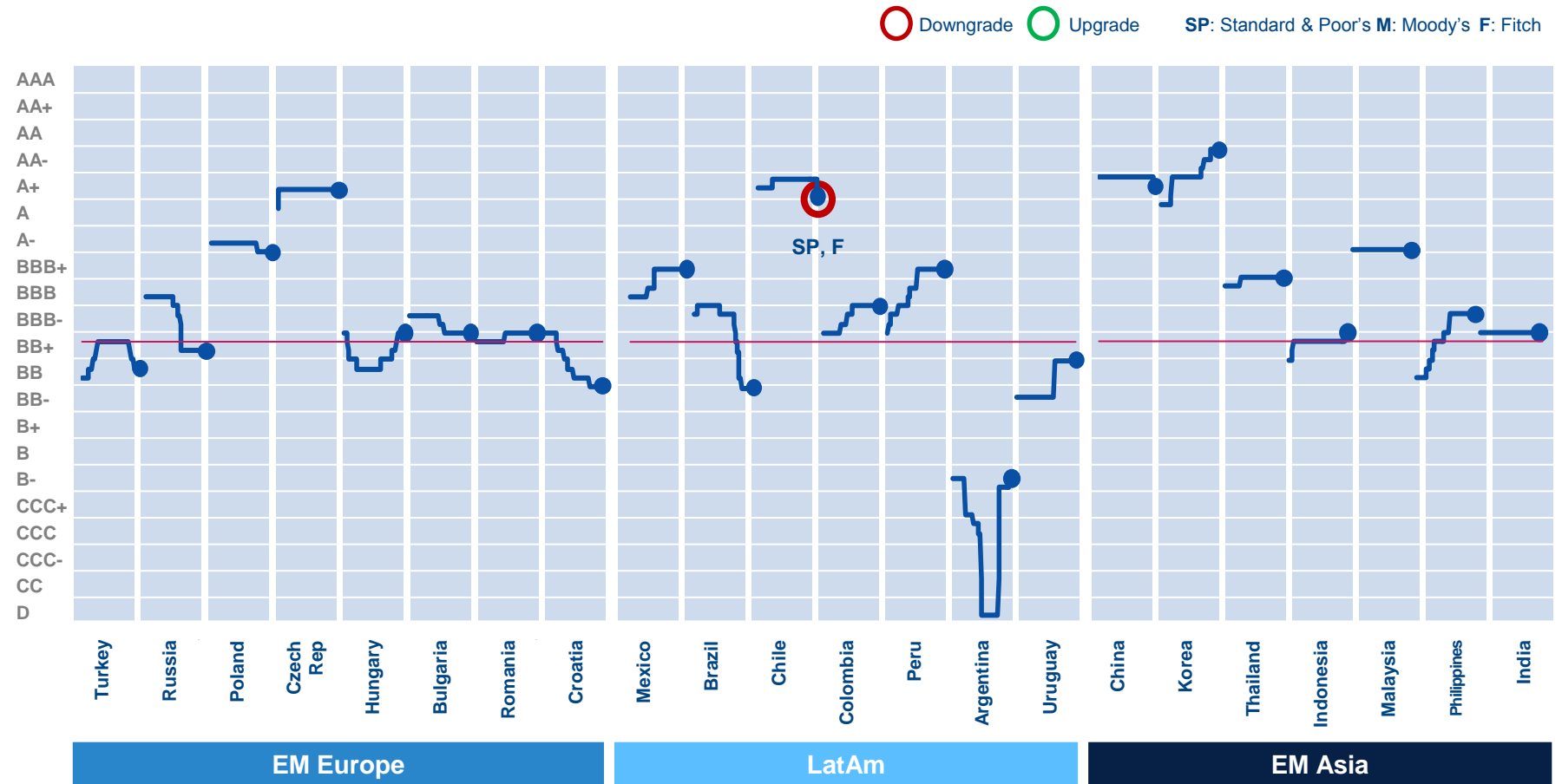
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Sovereign markets and rating agencies update

Sovereign Rating Index 2011-17: Developed Markets

Legend: ○ Downgrade (red) ○ Upgrade (green)   **SP**: Standard & Poor's **M**: Moody's **F**: Fitch

Y-axis ratings: AAA, AA+, AA, AA-, A+, A, A-, BBB+, BBB, BBB-, BB+, BB, BB-, B+, B, B-, CCC+, CCC, CCC-, CC, D

Countries (Core): Norway, Sweden, Austria, Germany, France, Netherlands, U.K.
Countries (Peripheral): Italy, Spain, Belgium, Greece, Portugal, Ireland
USA

Annotation on Greece: **M,F**

Category bands: **Core** | **Peripheral** | **USA**

Source: BBVA Research

Sovereign markets and rating agencies update

Sovereign Rating Index 2011-17: Emerging Markets

Source: BBVA Research

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Sovereign Markets and Rating Agency Update

Sovereign CDS Spreads (August 30th)

Changes
(last six months
MoM)

	2011	2012	2013	2014	2015	2016	2017	M A M J J A

Developed Markets
- USA
- UK
- Norway
- Sweden
- Austria
- Germany
- France
- Netherlands
- Italy
- Spain
- Belgium
- Greece
- Portugal
- Ireland

EM Europe
- Turkey
- Russia
- Poland
- Czech Republic
- Hungary
- Bulgaria
- Romania
- Croatia

LATAM
- Mexico
- Brazil
- Chile
- Colombia
- Peru
- Argentina

Asia
- China
- Korea
- Thailand
- Indonesia
- Malaysia
- Philippines
- India

Source: Datastream & BBVA Research

Legend: 0-50 | 50-100 | 100-200 | 200-300 | 300-400 | 400-500 | 500-600 | >600

Changes legend: < (-100) | (-100)-(-50) | (-50)-(-25) | (-25)-(-5) | (-5)-5 | 5-25 | 25-50 | 50-100 | >100

- Continued stability in advanced economies. France continues to see a slight lowering in spread levels.

- Greek CDS continues to experience a significant decrease in spread levels.

- EM Europe CDS saw a reduction or remain fairly stable.

- LatAm CDS have seen relative stability (except for slight volatility in Argentina) with slight decreases in Brazil, Peru and Colombia.

- EM Asia experienced stability as well, except for some volatility in South Korea.

A continuation in calmed CDS sovereign markets was observed. Most countries are at, or close to, their minimum historical levels, which should warn us that there is not much room for further decreases

Sovereign markets and agency ratings update

Agencies' rating downgrade pressure gap (August 30th 2017)
(difference between CDS-implied rating and actual sovereign rating, in notches)
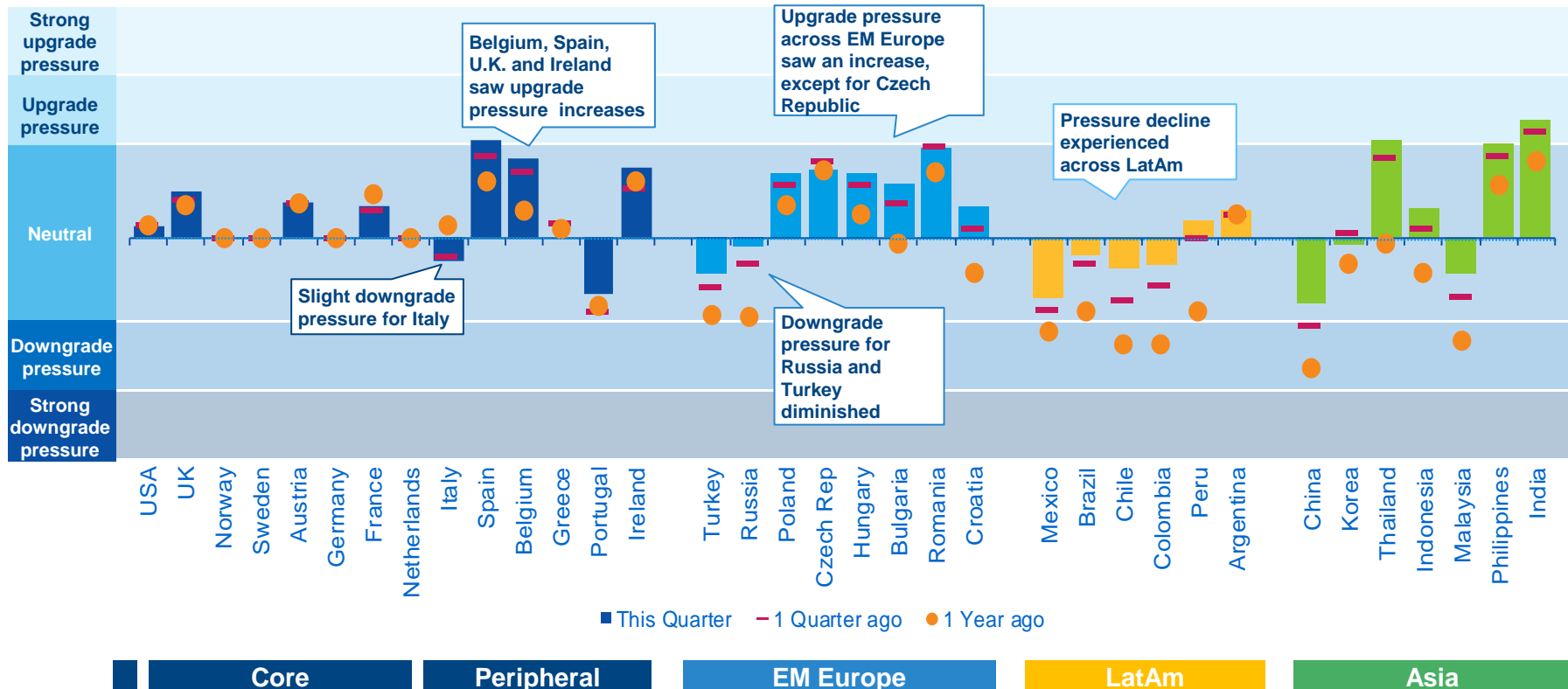
The reduction in downgrade pressure continued across the board in line with the decrease in CDS spreads, whereas upgrade pressure increased especially in EM Europe and Asia
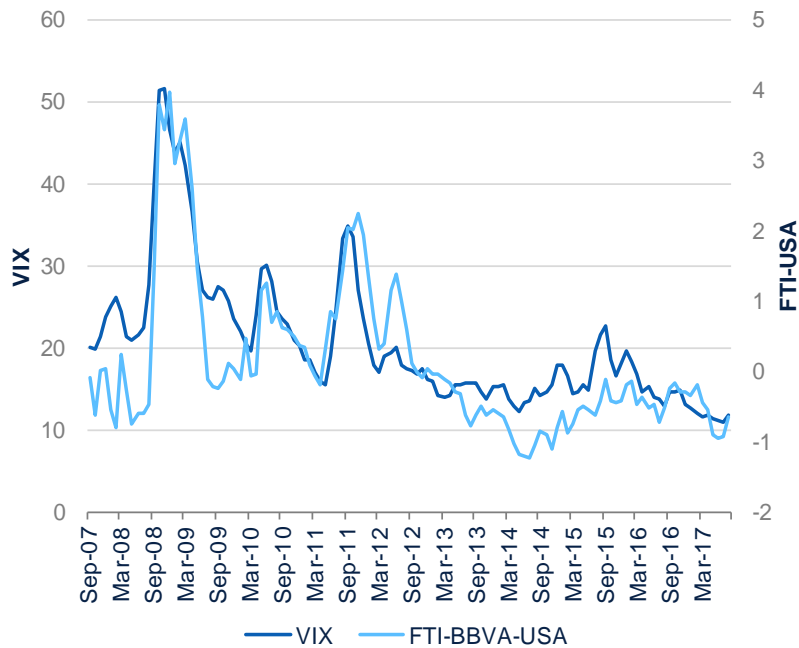
Source: BBVA Research

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Financial Tensions and Global Risk Aversion

Financial Tensions
Global Risk Aversion Evolution according to Different Measures
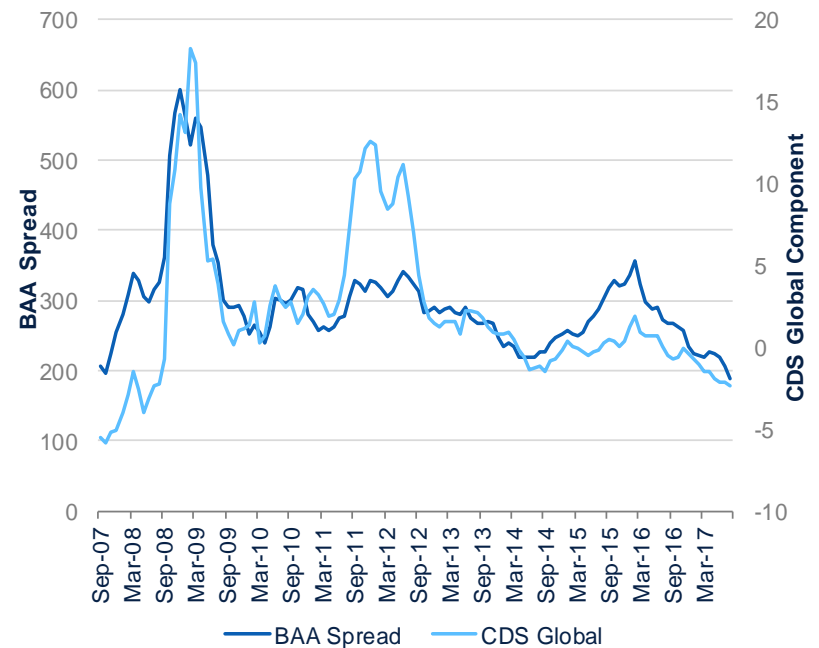
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Financial Tensions and global risk aversion

Global risk aversion indicators: VIX & FTI
(Monthly average)

Source: Bloomberg and BBVA Research

Global risk aversion indicators: BAA Spread & Global component in sovereign CDS
(Monthly Average)

Source: FED and BBVA Research

Global risk aversion has been steadily decreasing since Feb-2016, tightening sovereign and corporate spreads. Most recently, a slight rise was noted in the VIX and FTI-BBVA-USA during the last quarter, reflecting uncertainty concerning geopolitical tensions

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Financial tensions and global risk aversion

BBVA Research Financial Stress Map
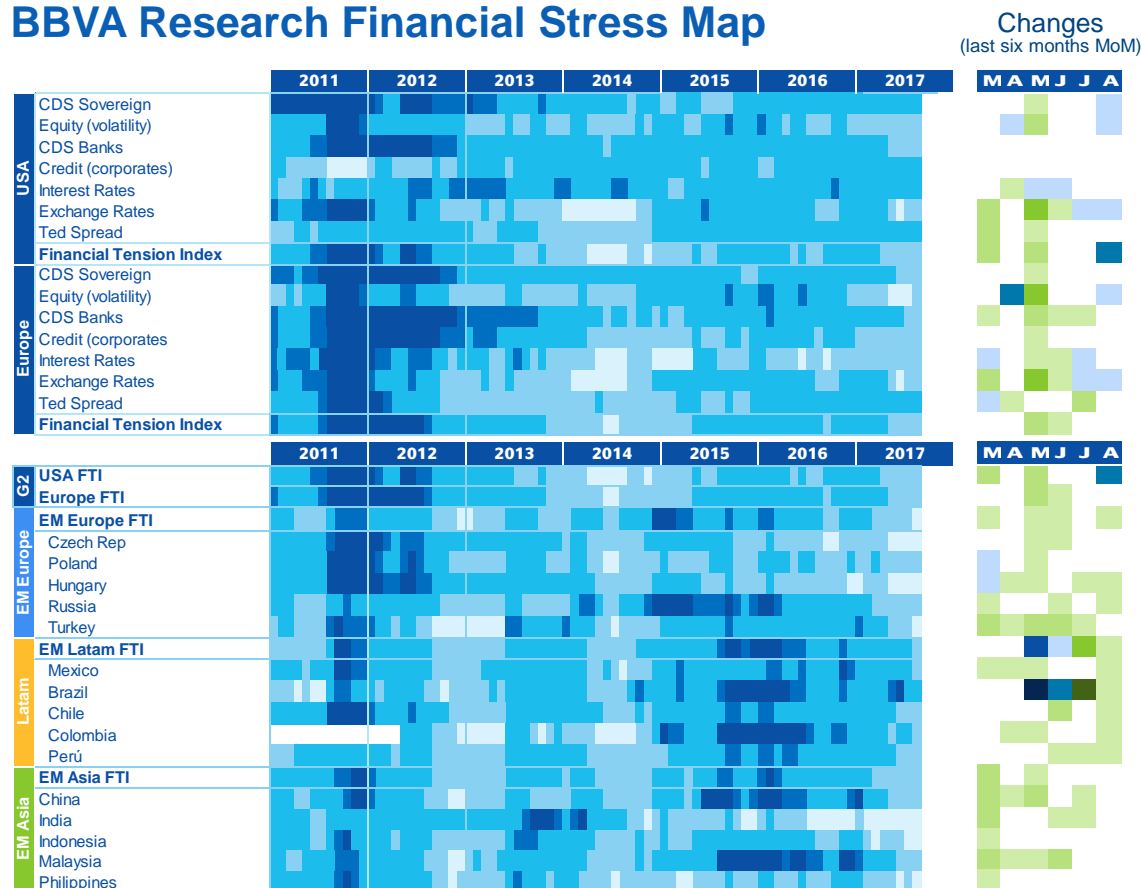
Changes
(last six months MoM)

- The U.S. experienced relative stability until August, where a slight increase in tensions was observed. Europe was relatively more stable. Both saw slight tensions in relation to exchange rates

- EM Europe continues to display remarkable stability in FT

- FT in LatAm, like other regions, displays stability and gradual lowering. Brazil seems to experience some volatility due to political tensions

- EM Asia continues experiencing mild to decreasing FT across the board

Color scale for Index in levels

- No Data
- Very Low Tension (<1 sd)
- Low Tension (-1.0 to -0.5 sd)
- Neutral Tension (-0.5 to 0.5 sd)
- High Tension (0.5 to 1 sd)
- Very High Tension (>1 sd)

Color scale for monthly changes

- < -1.0
- (-1)-(-0.75)
- (-0.75) - (-0.25)
- (-0.25) - (-0.1)
- (-0.1) - 0.1
- 0.1 - 0.25
- 0.25 - 0.75
- 0.75 - 1
- >1

Source: BBVA Research

Financial tensions (FT) are currently at remarkable low levels and declining, with the exception of the U.S. in August. The last quarter saw a further lowering and overall stability across the board
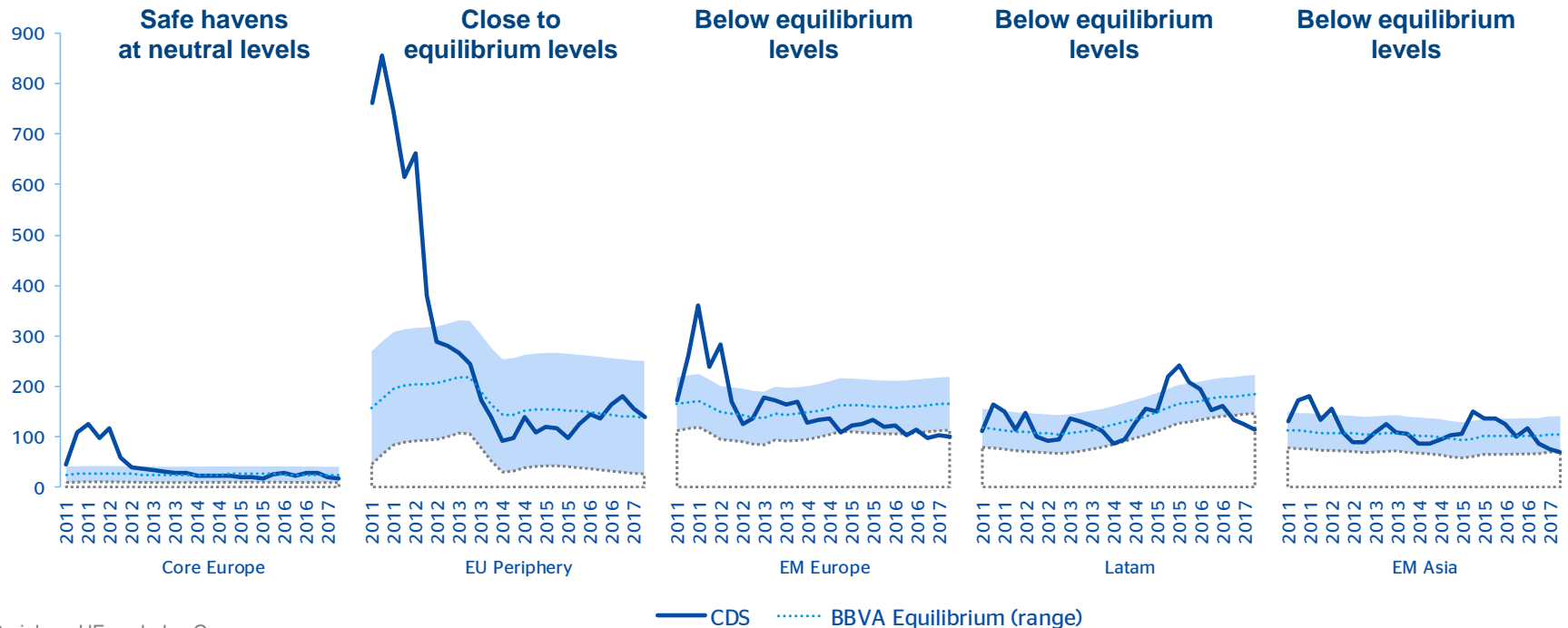
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Macroeconomic vulnerability and in-house Regional country risk assessment

BBVA-Research sovereign ratings by regions
Equilibrium CDS by regions
Vulnerability Radars by regions
Public and private debt levels

Macroeconomic Vulnerability and Risk Assessment

## CDS and equilibrium risk premium: August 2017

Periphery UE excludes Greece
Source: BBVA Research and Datastream

As mentioned before, CDS across the board are close to historical minimum levels. This also reflects in that in several countries CDS are way below their "equilibrium" levels (according to long-term fundamentals), which is most noticeable in LatAm, EM Europe and EM Asia

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Macroeconomic Vulnerability and Risk Assessment

Agencies' Sovereign Rating vs. BBVA Research
(Agencies' Rating and BBVA scores +/-1 std dev)

Rating Agencies   •••••• BBVA-Research
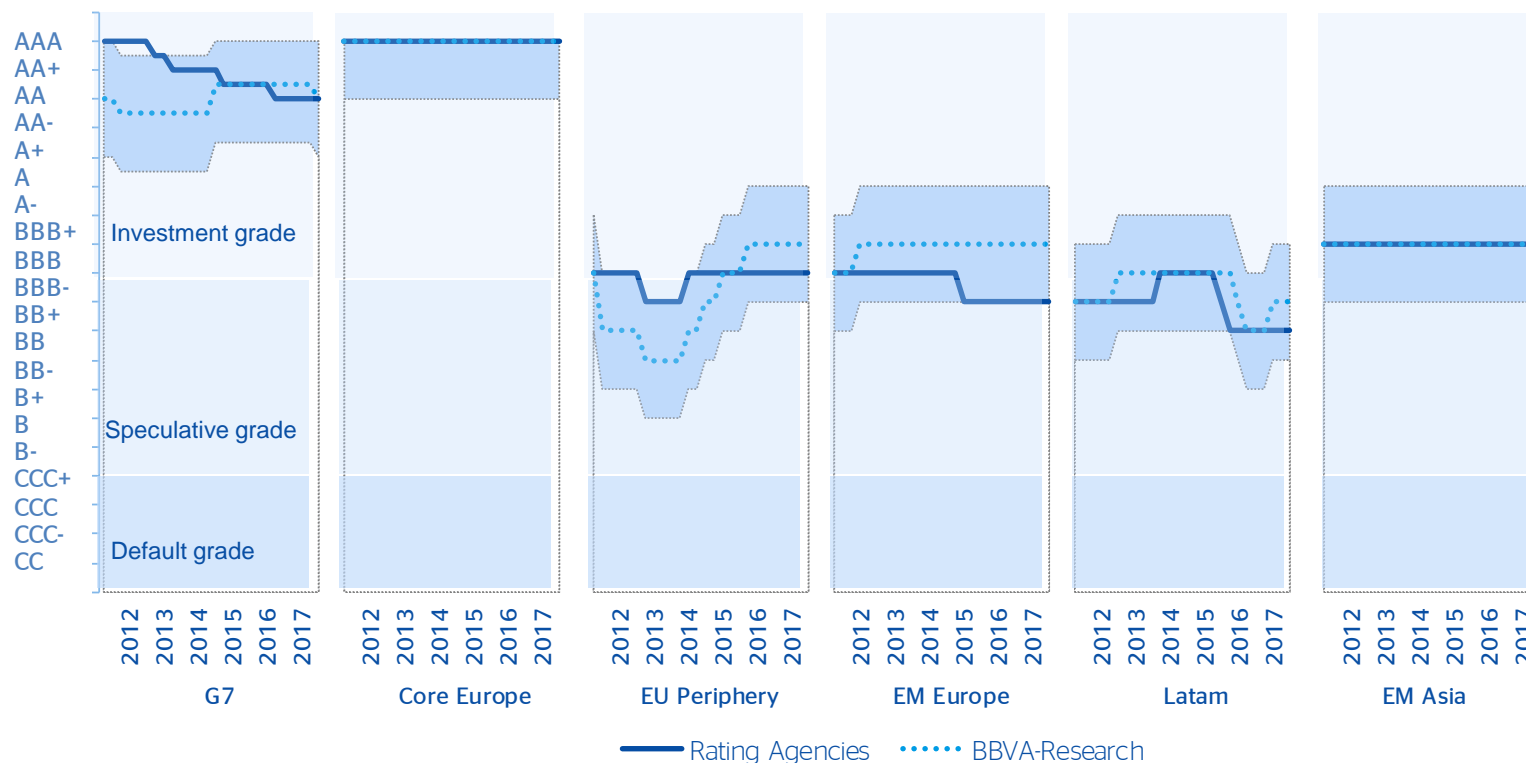
Source: Standard & Poors, Moody's, Fitch & BBVA Research

LatAm's agencies average rating continues below investment grade threshold and below our BBVA Research rating. EU Periphery and EM Europe average rating still below fundamentals, in line with sovereign markets' upgrade pressure

Macroeconomic Vulnerability and Risk Assessment

Public and external debt levels have kept worsening in several developed economies. Equity valuation risks and political instability are at elevated levels of vulnerability

Developed markets: vulnerability radar 2017

(Relative position for the developed countries. Max risk=1, Min risk=0. Previous year data is shown as a dotted line)

G7: Public, external debt and equity levels remain high. Unemployment and corporate leverage decreasing

Core Europe: Corporate leverage slightly declining while political instability is rising. Equity vulnerability increases and external debt remains high.

Periphery EU: Public, external debt and unemployment levels remain elevated, while equity and political stability are also estimated as high risk.
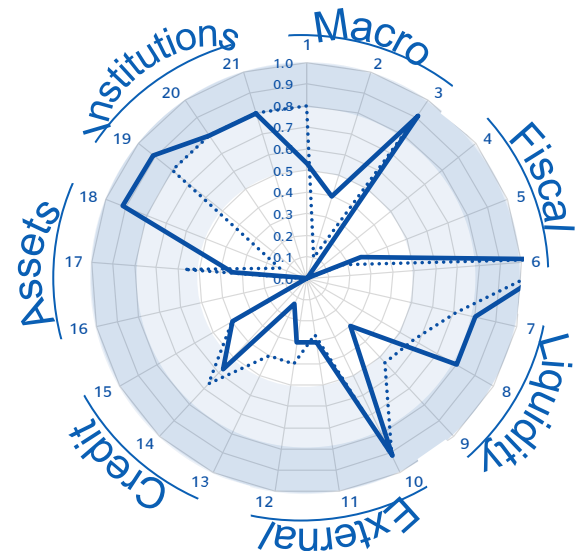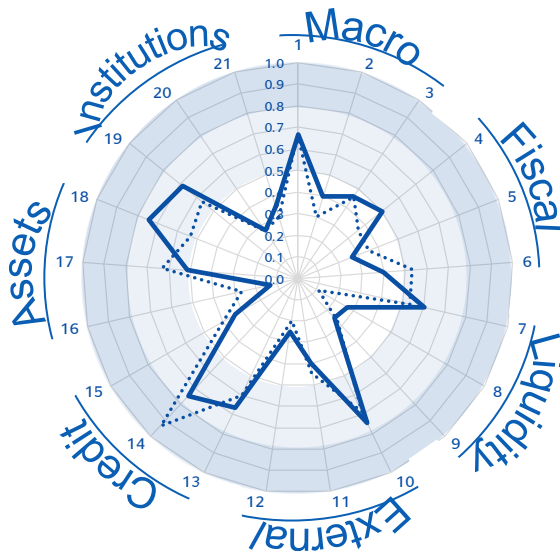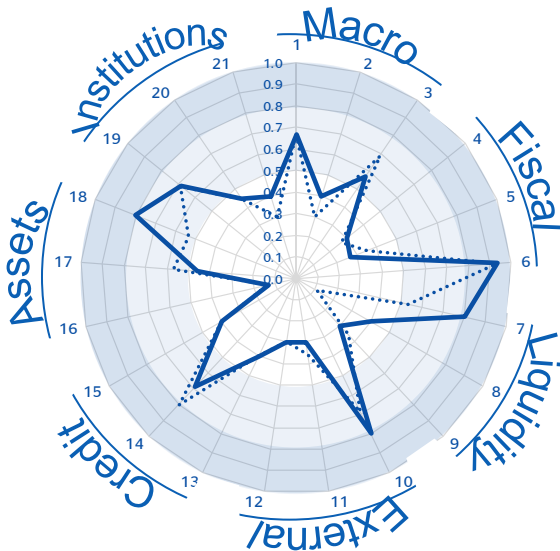
High risk   Moderate Risk   Safe

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 (%GDP) (14) Corporate (%GDP) (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

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Macroeconomic Vulnerability and Risk Assessment

Overall, some vulnerabilities seem to be improving in EMs. However, external vulnerabilities and equity valuations risks are at high levels in EM Europe and LatAm. Public debt levels should be monitored in LatAm and Asia

Emerging markets: vulnerability radar 2017
(Relative position for the emerging countries. Max risk=1, Min risk=0. Previous year data is shown as a dotted line)

EM Europe: Significant increase in equity risk, and a continuation of high levels in external debt and debt held by non-residents

LatAm: Overall, most vulnerabilities are at a medium level of risk, except for vulnerabilities related to growth

EM Asia: Political instability and household credit continue to be high risks. REER sees significant depreciation and risk lowering
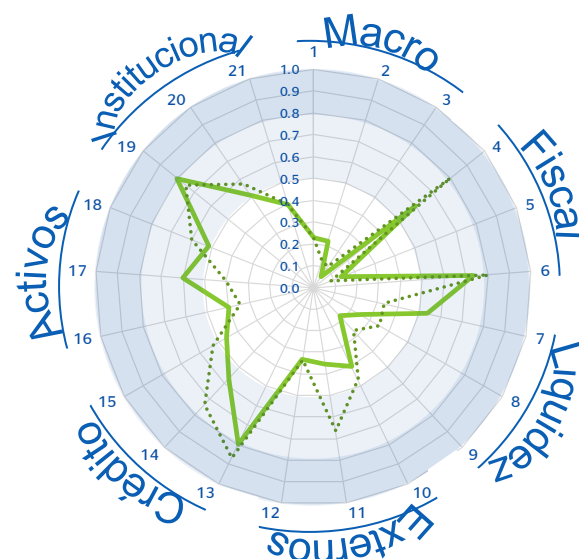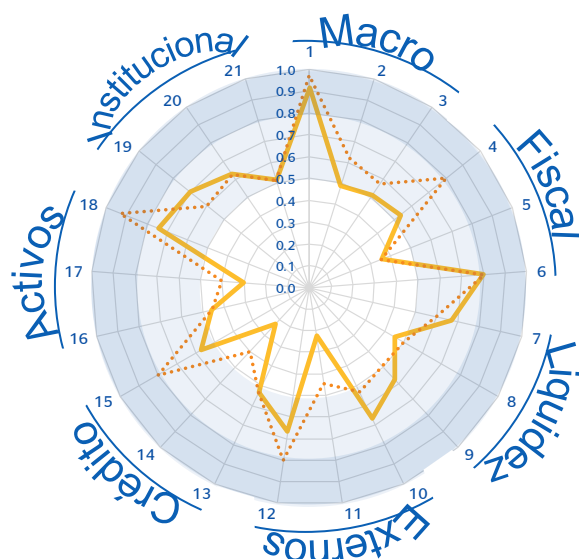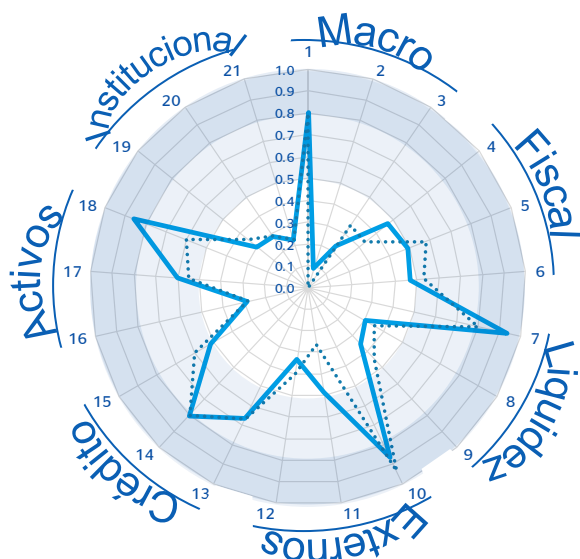
Riesgo alto   Riesgo moderado   Riesgo bajo

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

Macroeconomic vulnerability and risk assessment

Gross Public Debt 2017
(% PIB)
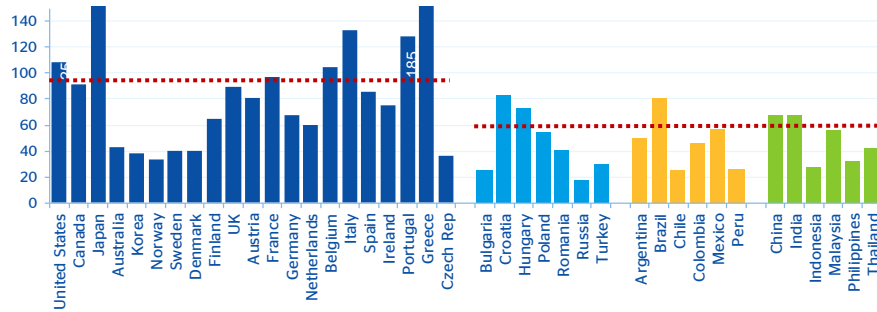
External Debt 2017
(% GDP)
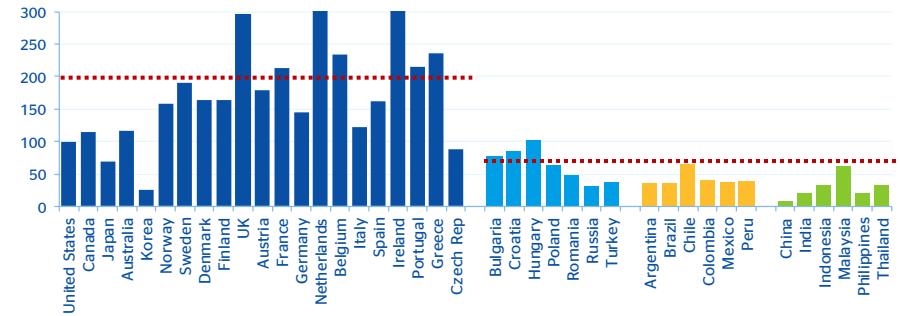
Household Debt 2017
(% GDP)
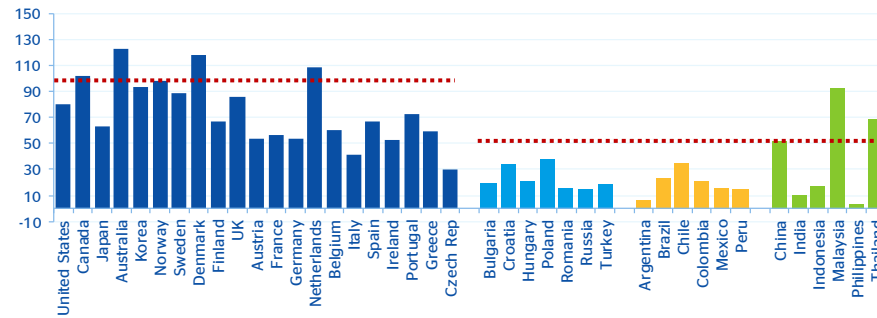
Corporate Sector Debt 2017
(% GDP)
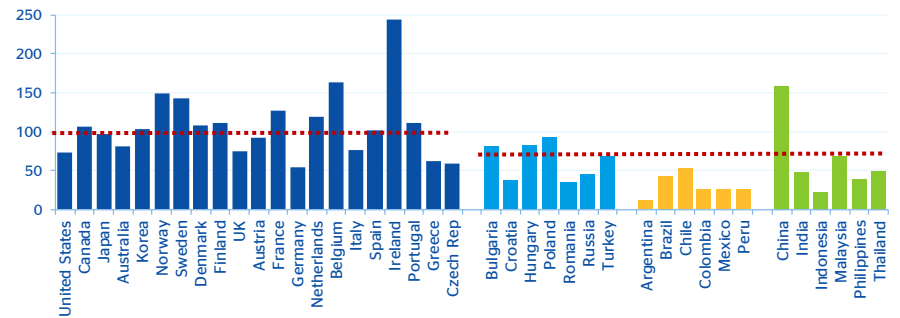
Source: BBVA Research and BIS Source: BBVA Research and IMF

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04

Assessment of financial and external disequilibria

Private credit growth by country
Housing prices growth by country
Early warning system of banking crises by regions
Early warning system of currency crises by regions

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Assessment of financial and external disequilibria

Leverage growth has seen a slight pickup in 2017 in some advanced economies and parts of EM Asia. Chinese leverage growth continues to decelerate but remains high in YoY terms.

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Private credit color map (2002-2017 Q1)
(yearly change of private credit-to-GDP ratio (YoY

QoQ growth
Last four qurters up
until Q1-2017
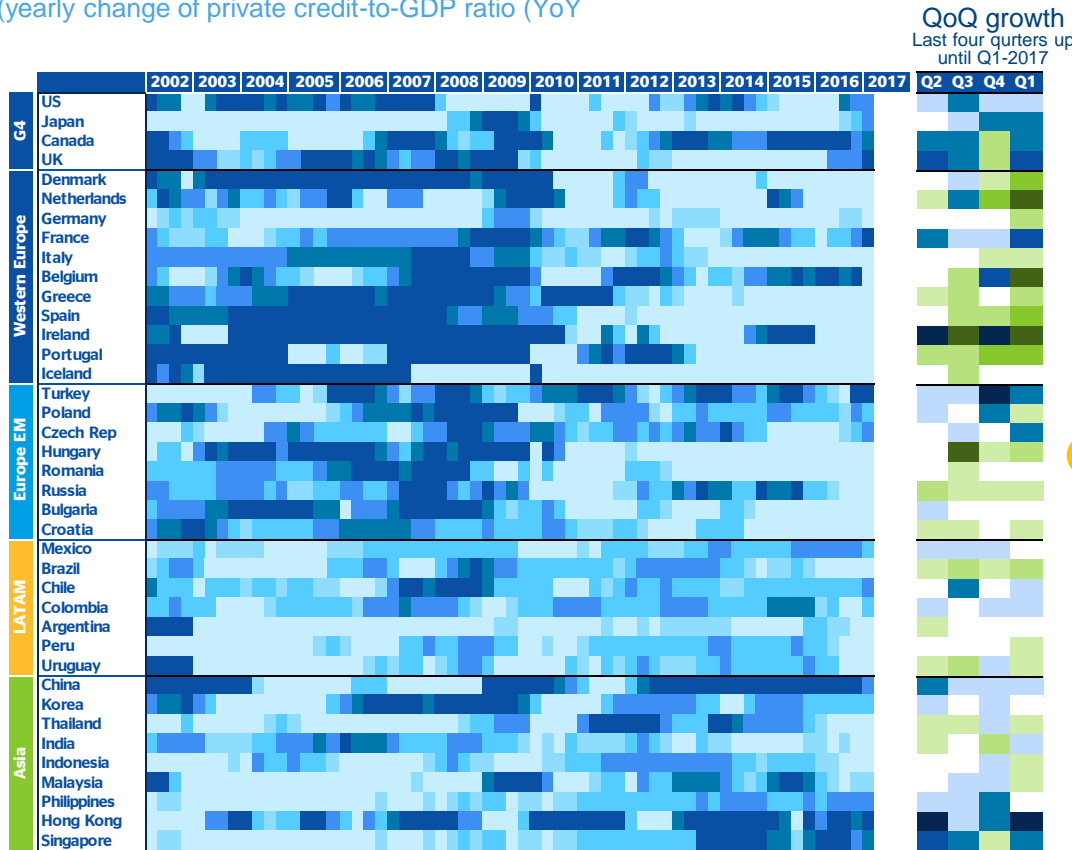
● Canadian credit growth seems to pick up again after a slight slowdown. Japan, U.K., and France have also seen a similar pickup in leverage

● Credit growth continues peaking in Turkey. Except for Czech Republic, EM Europe credit growth remained weak or negative overall.

● Credit growth in LatAm continued to decelerate. Meanwhile, Chile and Colombia experienced slight leverage growth

● Credit growth in China keeps on decelerating, although is still high YoY. Growth in Hong Kong and Singapore is also picking up

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%

Source: IFS, BIS & BBVA Research,

Assessment of financial and external disequilibria

Strong housing price growth was also seen in several DMs. Deceleration in housing price growth or relative stability was seen across the board in EM countries, although price growth in China still strong

Real housing prices color map (2002-2017 Q1)
(yearly change of real housing prices YoY)

QoQ growth
Last four quarters up
until Q1-2017
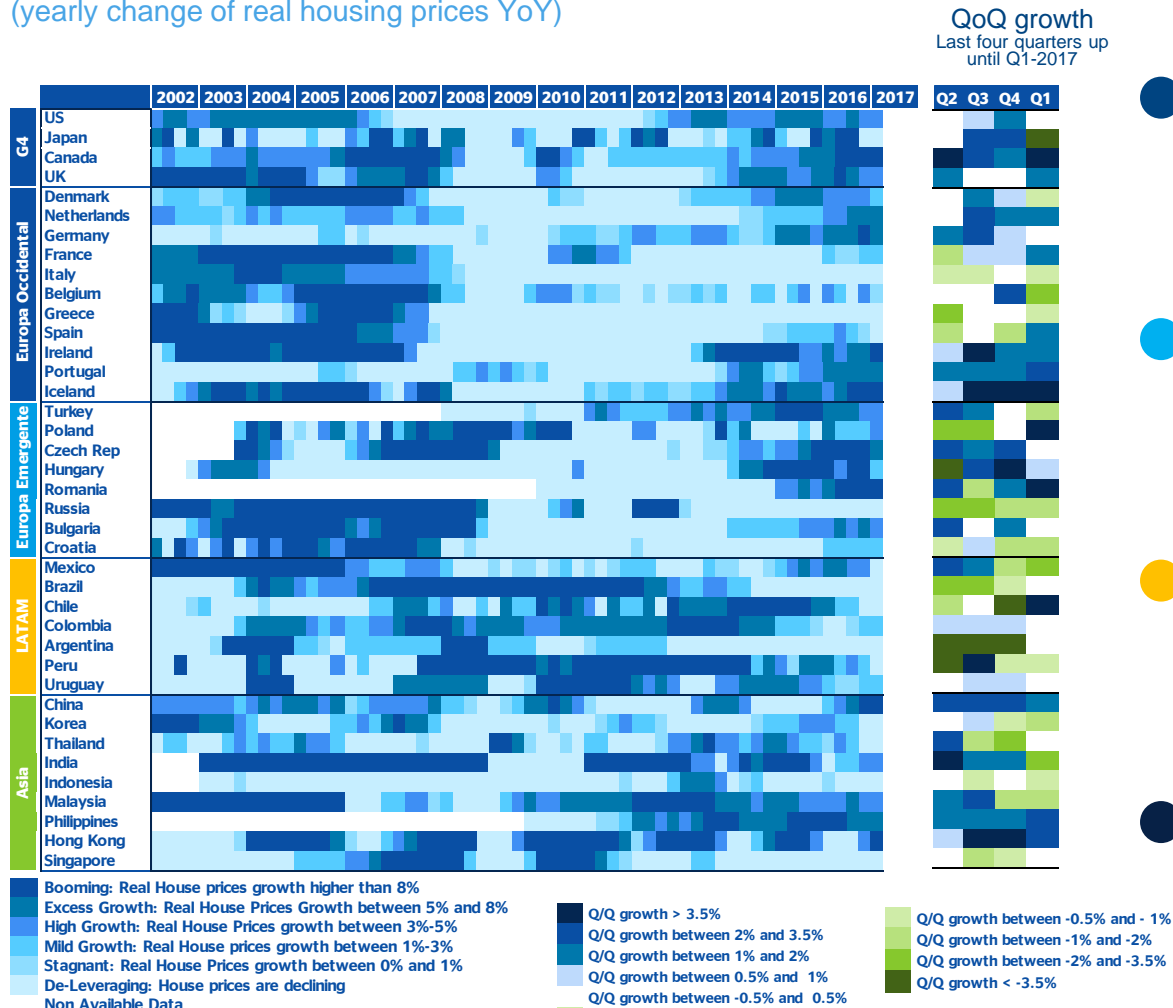
- Price growth was high in Canada, Iceland, U.K., Netherlands and Germany. Price fluctuations are observed in Italy

- Mixed quarterly data from EM Europe. Romania and Poland experience significant price growth. Meanwhile stability or slight lowering can be seen elsewhere

- Mexican growth continued to decelerate. Chile saw a QoQ increase while other countries saw relative price stability

- China show mild signs of a slowing, although prices are still growing. Mild growth or deceleration was seen in other countries except for Philippines and HK

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

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%

Source: BBVA Research, BIS, Haver and Oxford Economics.

Assessment of financial and external disequilibria

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Early warning system (EWS) of Banking Crises (1996Q1-2018Q4)
(Probability of Systemic Banking Crisis (based on 8-quarters lagged data*):
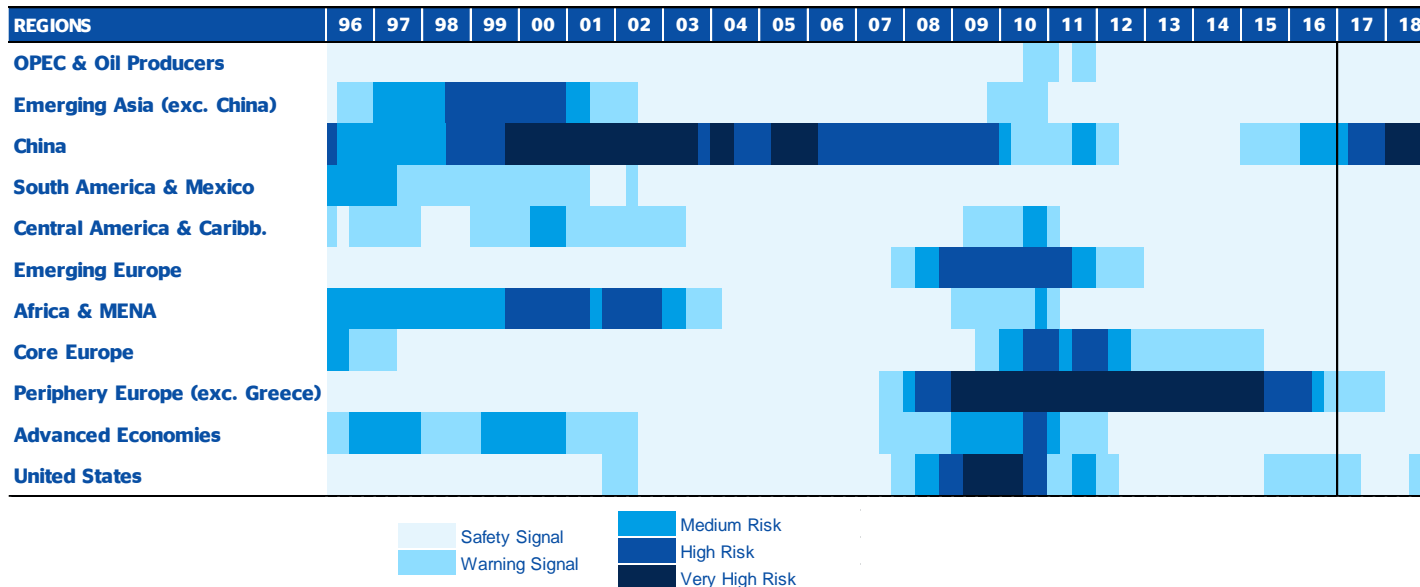
- Excessive leverage in China continues to generate a major alert. This has triggered a regulatory tightening to control this risk
- Some countries in Europe's periphery (ex. Greece) continue to show signs of banking stress
- The U.S. begins to show warning signals

- A banking crisis in a given country follows the definition by Laeven and Valencia (2012), which is shown in the Appendix
- The complete description of the methodology can be found at https://goo.gl/r0BLbI and at https://goo.gl/VA8xXv
- The probabilities shown are the simple average of the estimated individual countries probabilities for each region. The definition of each region is shown in the Appendix

*The probability of a crisis in Q4-2016 is based on Q4-2014 data. Source: BBVA Research
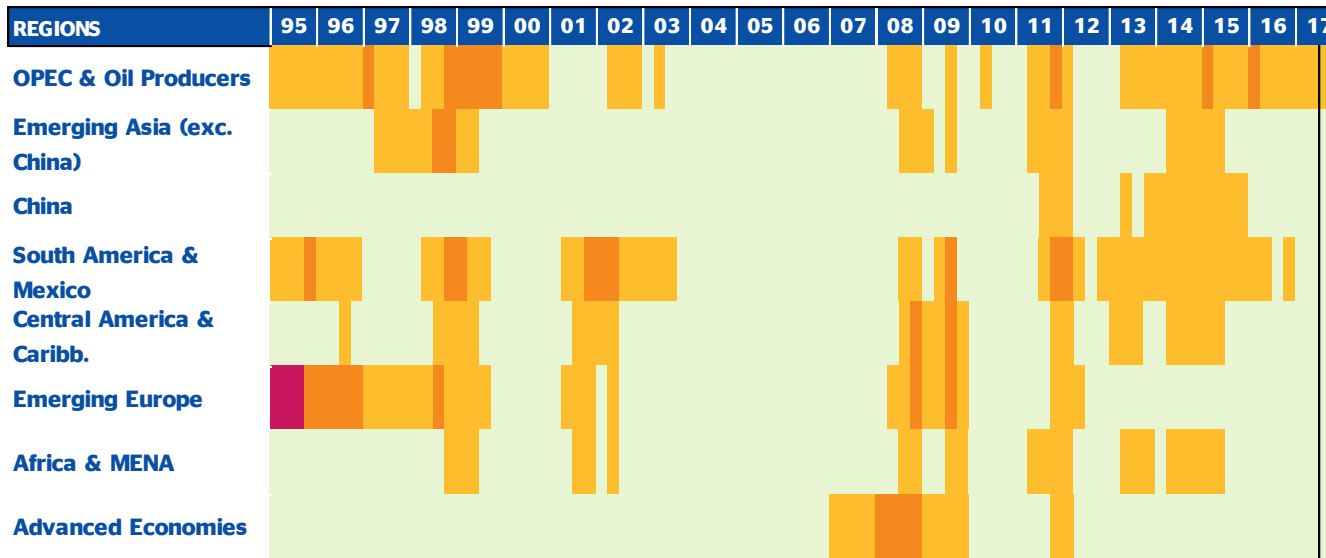
China remains as the main region/country with a significant probability of a banking crisis, which authorities are tackling with regulatory overhaul. However, the U.S. begins to show warning signals related to a faster increase in credit.

Assessment of financial and external disequilibria

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Early warning system (EWS) of Currency Crisis Risk: probability of currency tensions
The probability of a crisis is based on 4-quarters lagged data, e.g. Probability in Q4-2016 is based on Q4-2015 data
Source: BBVA Research

REGIONS	95	96	97	98	99	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17

- OPEC & Oil Producers
- Emerging Asia (exc. China)
- China
- South America & Mexico
- Central America & Caribb.
- Emerging Europe
- Africa & MENA
- Advanced Economies

● The probability of currency tensions in OPEC & Oil Producers countries such as Russia, Azerbaijan and Venezuela continues but has decreased

Safe
Warning
High Risk
Very High Risk

- We have developed a similar Currency-Crises Early Warning System EWS that allow us to estimate the probability of a currency crisis, which is defined as a "large" fall in the exchange rate and in foreign reserves in a given country, according to certain predefined measures.
- The probabilities shown in the table are the simple average of the individual countries probabilities for each region. The list of the leading indicators used in the estimation of the probability and the definition of each region are shown in the Appendix.

Source: BBVA Research

The probability of currency tensions in OPEC & Oil Producer countries during 2017 has decreased. We do not envisage serious tensions in the coming months in these groups of countries as a whole, although this might not be the case for individual countries within each region

Vulnerability Indicators table by country

Vulnerability Indicators Table

Vulnerability indicators* 2017: developed markets

	Fiscal sustainability			External sustainability			Liquidity management			Macroeconomic performance			Credit and housing			Private debt			Institutional		
	Structural primary balance (1)	Interest rate GDP growth differential 2016-21	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	-1.0	108	-2.4	100	4.5	19	14	32	2.3	2.6	4.5	4.5	3.2	19.1	80	74	64	-0.7	-1.4	-1.6
Canada	-1.5	-0.4	91	-2.9	114	-7.1	11	9	24	1.9	2.1	6.9	6.9	-1.8	7.9	102	107	131	-1.2	-1.9	-1.8
Japan	-3.7	-1.1	239	4.2	69	1.0	41	15	10	1.2	0.8	3.1	4.0	15.2	28.6	63	97	48	-1.0	-1.6	-1.5
Australia	-0.7	-1.3	43	-2.8	116	-1.8	3	2	42	3.1	2.0	5.2	-4.4	9.2	8.5	122	81	131	-0.9	-1.9	-1.8
Korea	0.4	-1.3	39	6.2	26	0.1	2	6	12	2.7	2.2	3.8	1.0	-1.1	21.4	93	103	98	-0.1	-0.5	-1.0
Norway	-10.8	-1.5	33	5.7	158	-3.9	-9	8	55	1.2	2.6	4.5	2.1	7.1	15.6	98	148	134	-1.1	-2.3	-2.0
Sweden	-1.1	-2.1	40	4.6	189	-5.4	5	10	42	2.7	1.5	6.7	17.0	6.6	21.1	89	144	196	-1.0	-2.2	-2.0
Denmark	-0.7	-1.0	40	7.5	164	-0.7	5	9	38	1.5	0.7	5.8	-3.8	1.6	3.2	118	108	306	-0.9	-2.2	-2.0
Finland	-0.8	-1.6	64	-1.3	164	-1.5	8	9	81	1.3	1.5	8.5	-45.2	-1.8	21.1	67	111	102	-1.0	-2.3	-2.1
UK	-1.0	-0.8	89	-3.2	297	-9.8	9	7	34	1.7	2.6	4.9	8.3	3.4	12.4	86	75	56	-0.6	-1.9	-1.8
Austria	0.6	-0.9	81	2.4	179	0.2	5	5	85	1.4	1.7	5.9	-1.6	0.2	48.2	54	92	98	-1.2	-1.5	-1.9
France	-0.8	-1.2	98	-1.3	213	-1.5	13	10	65	1.4	1.5	9.6	7.3	1.7	20.8	57	127	105	-0.3	-1.3	-1.4
Germany	1.2	-1.4	68	7.6	145	-1.3	3	5	63	1.7	2.0	4.2	-2.1	6.1	27.3	53	54	84	-0.7	-1.8	-1.8
Netherlands	1.0	-1.2	60	9.2	516	-1.0	6	5	55	2.1	1.2	5.4	-17.6	5.3	16.4	108	118	89	-0.9	-1.9	-1.9
Belgium	0.1	-0.9	104	0.9	234	0.5	18	15	67	1.6	1.4	7.8	-3.9	0.5	6.2	60	163	51	-0.6	-1.6	-1.4
Italy	1.9	0.8	133	2.5	122	-1.8	17	11	39	1.0	1.6	11.4	-2.2	-2.4	27.1	41	76	101	-0.3	0.0	-0.3
Spain	-0.1	-2.2	85	1.8	162	-0.4	18	15	51	3.0	2.1	17.3	-9.2	-0.5	27.9	67	102	101	-0.3	-0.5	-0.9
Ireland	1.4	-1.6	75	4.7	746	-1.6	6	7	69	3.5	1.4	6.5	-35.4	9.1	21.0	53	244	47	-0.9	-1.6	-1.8
Portugal	2.7	0.7	129	-0.3	216	-0.6	12	8	64	1.7	2.6	10.6	-11.1	6.3	19.3	73	112	120	-0.9	-0.9	-1.1
Greece	3.3	-1.8	181	-0.3	236	-1.8	15	6	82	2.2	1.3	21.9	-4.6	-3.4	51.9	60	63	146	0.2	0.1	-0.2

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

*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

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Vulnerability Indicators Table

SUMMARY   INDEX

Vulnerability indicators* 2017: emerging markets

	Fiscal sustainability			External sustainability			Liquidity management			Macroeconomic performance			Credit and housing			Private debt			Institutional		
	Structural primary balance (1)	Interest rate GDP growth differential 2016-21	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	-0.5	0.4	24	2.3	76	-1.3	4	2.8	44	2.9	1.7	7.1	-0.1	3.2	54.4	20	80	79	0.0	0.3	0.1
Czech Rep	0.3	-1.6	36	1.2	89	4.0	6	15	46	2.8	2.3	3.8	3.5	7.3	20.0	30	59	82	-1.0	-0.4	-1.1
Croatia	1.0	0.3	83	2.8	83	0.3	15	3.7	39	2.9	0.8	13.9	-2.8	1.0	11.3	33	36	96	-0.6	-0.2	-0.2
Hungary	1.6	-1.5	73	3.7	102	0.5	16	1.8	51	2.9	2.8	4.4	-8.8	2.3	33.7	20	83	88	-0.7	-0.1	-0.4
Poland	-1.4	-2.1	55	-1.7	63	0.0	10	2.2	53	3.4	2.3	5.5	2.1	3.8	36.4	37	92	108	-0.9	-0.6	-0.8
Romania	-2.6	-2.6	41	-2.8	47	-4.8	8	2.9	47	4.2	2.2	5.4	-1.6	8.2	21.3	16	36	84	-0.2	0.0	-0.2
Russia	-2.0	0.0	17	3.3	31	3.0	4	5.6	17	1.4	4.4	5.5	-4.9	-9.8	-0.6	15	45	106	1.0	0.9	0.7
Turkey	-1.1	-1.9	29	-4.7	49	0.6	8	1.0	37	5.0	9.0	11.3	9.9	3.2	30.8	18	68	126	1.3	0.1	0.1
Argentina	-4.0	-12.6	51	-4.0	35	1.1	11	1.2	36	2.7	20.5	7.4	-0.5	-25.4	49.2	6	12	62	0.1	0.6	0.8
Brazil	-1.1	2.4	81	-0.7	35	-1.2	17	6.9	9	0.6	3.7	12.1	-5.1	-6.1	22.1	24	43	96	0.4	0.4	0.2
Chile	-1.3	-1.8	25	-1.4	65	-0.7	4	2.3	22	1.3	2.8	6.9	3.1	-0.4	18.8	35	53	151	1.1	-1.3	-1.3
Colombia	0.6	0.9	46	-3.6	41	-24.8	5	3.4	33	2.3	4.1	9.5	1.8	2.7	11.6	21	26	112	1.1	0.3	0.3
Mexico	0.5	0.4	57	-2.8	36	-8.4	9	0.3	34	1.6	5.6	4.1	2.6	0.0	12.4	16	26	84	0.9	0.7	0.5
Peru	-1.4	-2.2	26	-2.0	38	-3.9	4	0.1	46	2.2	2.1	6.7	-1.4	-2.7	16.4	15	25	98	0.5	0.6	0.5
China	-2.7	-5.6	67	2.3	9	-4.1	4	3.3	..	6.3	2.3	4.0	4.8	9.7	0.4	52	159	85	0.6	0.3	0.3
India	-1.5	-4.1	68	-1.2	20	9.7	11	4.3	6	7.2	4.5	3.4	-3.2	3.7	14.5	10	47	83	0.9	0.4	0.1
Indonesia	-0.8	-3.1	28	-1.9	33	5.1	4	2.5	59	5.1	4.2	5.4	-0.3	-1.0	16.2	17	23	97	0.6	0.5	0.4
Malaysia	-0.9	-2.8	56	1.8	61	-6.6	11	0.9	34	4.4	2.7	3.4	0.6	3.8	6.6	93	--	110	-0.2	-0.3	-0.6
Philippines	0.8	-4.3	33	0.9	19	-3.7	8	5.1	31	6.6	3.3	6.0	4.1	7.6	0.6	3	38	66	0.8	0.4	0.3
Thailand	-0.8	-1.5	42	8.4	33	0.5	7	2.8	12	3.4	1.4	0.7	-1.3	-1.9	9.0	69	49	99	1.0	0.4	0.1

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

*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

Methodological Appendix

Appendix
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 Maps: 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: 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

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Appendix
Methodology: indicators and maps

Risk Thresholds Table

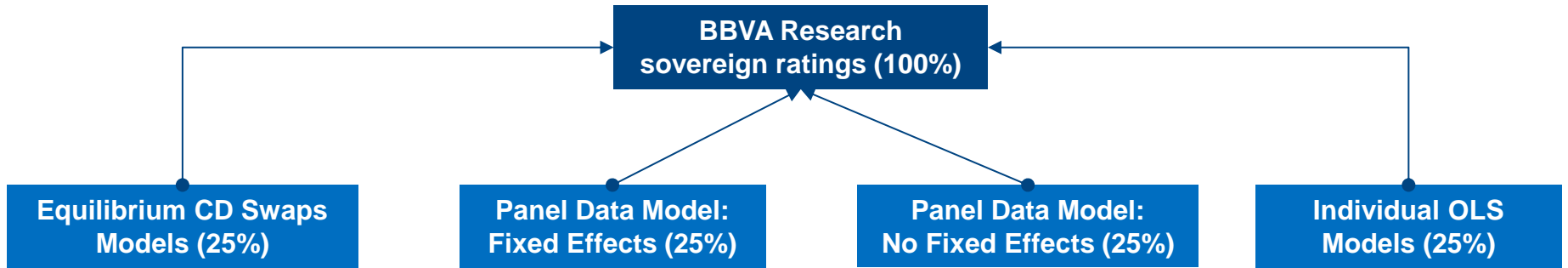| Vulnerability Dimensions	Risk thresholds Developed Economies	Risk thresholds emerging economies	Risk direction	Research
Macroeconomics				
GDP	1.5	3.0	Lower	BBVA Research
Inflation	4.0	10.0	Higher	BBVA Research
Unemployment	10.0	10.0	Higher	BBVA Research
Fiscal vulnerability				
Cyclically adjusted 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

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Appendix
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 CDS for 48 developed and emerging countries and 10 macroeconomic explanatory variables. The CDS equilibrium is calculated using the centered 5-year moving average of the explanatory variables weighted according to their estimated sensitivities. For estimating the equilibrium level, the BAA spread is left unchanged at its long-term median level (2003-2016). The values of these equilibrium CDS are finally converted to a 20 scale sovereign rating scale.

- 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: We used the estimates of the previous model but retaining only the contribution of the macroeconomic and institutional variables, without adding the country "fixed-effect" contribution. In this way we are able to account more clearly for the effect of only those macroeconomic variables that we can identify.

- 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. The estimation comes from Oxford Economics Forecasting (OEF) for the majority of countries. For those countries that are not analysed by OEF, we estimate a similar OLS individual model.

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Appendix
Methodology: models and BBVA country risk
BBVA Research sovereign ratings methodology diagram

BBVA Research sovereign ratings (100%)

Equilibrium CD Swaps Models (25%)

Panel Data Model: Fixed Effects (25%)

Panel Data Model: No Fixed Effects (25%)

Individual OLS Models (25%)

Fuente: BBVA Research

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Appendix
Methodology: Early Warning Systems

EWS Banking Crises:
The complete description of the methodology can be found at https://goo.gl/r0BLbI and at https://goo.gl/VA8xXv. A banking crisis is defined as systemic if two conditions are met: 1) Significant signs of financial distress in the banking system (as indicated by significant bank runs, losses in the banking system, and/or bank liquidations), 2) Significant banking policy intervention measures in response to significant losses in the banking system. The probability of a crisis is estimated using a panel-logit model with annual data from 68 countries and from 1990 to 2012. The estimated model is then applied to quarterly data. The probability of a crisis is estimated as a function of the following leading indicators (with a 2-years lag):

- Credit-to-GDP Gap (Deviation from an estimated long-term level)
- Current account balance to GDP
- Short-term interest rate (deviation against US interest rate)
- Libor interest rate
- Credit-to-Deposits
- Regulatory Capital to Risk Weighted Assets ratio..

EWS Currency Crises:
We estimate the probability of a currency crisis (a large fall in exchange rate and foreign reserves event) is estimated using a panel-logit model with 78 countries from 1980Q1 to 2015Q4, as a function of the following variables (with an 4-quarters lag):

- Credit-to-GDP ratio Gap (based on HP filter)
- Inflation
- BAA Spread
- Cyclical Current Account (based on HP filter)
- Short-term interest rate (deviation against US interest rate)
- Libor interest rate (different lags)
- Real effective exchange rate
- Investment to GDP
- GDP real growth rate (HP-trend and cyclical deviation from trend)
- Total trade to GDP

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Appendix
Methodology: Early Warning Systems

EWS Banking Crises Definition of Regions:

- OPEC and Other Oil Exporters: Algeria, Angola, Azerbaijan, Bahrain, Canada, Ecuador, Nigeria, Norway, Qatar, Russia and Venezuela
- Emerging Asia: Bangladesh, China, India, Indonesia, Malaysia, Pakistan, Philippines, Thailand and Vietnam.
- South America & Mexico: Argentina, Brazil, Chile, Colombia, Mexico, Paraguay, Peru and Uruguay
- Other LatAm & Caribbean: Bolivia, Costa Rica, Dominican Rep., El Salvador, Guatemala, Honduras, Nicaragua and Panama
- Africa & MENA: Botswana, Egypt, Israel, Morocco, Namibia and South Africa.
- Emerging Europe: Armenia, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovak Rep, Slovenia, Turkey, Ukraine
- Core Europe: Austria, Belgium, Denmark, Finland, France, Germany, Netherlands, Sweden and United Kingdom.
- Periphery Europe: Greece, Ireland, Italy, Portugal and Spain
- Advanced Economies: Australia, Japan, Korea, Singapore, Iceland, New Zealand and Switzerland.

EWS Currency Crises Definition of Regions:

- OPEC and Other Oil Exporters: Algeria, Angola, Azerbaijan, Bahrain, Nigeria, Norway, Oman, Qatar, Russia, Trinidad and Tobago, United Arab Emirates and Venezuela
- Emerging Asia: Bangladesh, China, Hong Kong, India, Indonesia, Malaysia, Pakistan, Philippines, Thailand and Vietnam.
- South America & Mexico: Argentina, Brazil, Chile, Colombia, Mexico, Paraguay, Peru and Uruguay
- Other LatAm & Caribbean: Bolivia, Costa Rica, Dominican Rep., El Salvador, Guatemala, Honduras, Jamaica and Nicaragua
- Emerging Europe: Armenia, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovak Rep, Slovenia, Turkey, Ukraine
- Africa & MENA: Botswana, Egypt, Israel, Morocco, Namibia, South Africa and Tunisia
- Advanced Economies: Australia, Japan, Korea, Singapore, Canada, Iceland, New Zealand and Switzerland.

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