

Flows & Assets Report

The Big Emerging Markets Short

First Quarter 2016

BBVA Research

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- 1. Key Messages**
- 2. Portfolio Flows & Asset Prices:** stylized facts, drivers and nowcasts
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Summary

(Review of previous quarter events & insight into 2016 on behalf of the information collected as of January 30th 2016)

Main drivers

- Global growth concerns led by China's policy shifts and inability to sooth investor concerns heightened risk off-mood particularly by year-end.
- Global monetary policy easing bias that initially prevented further deterioration lost effect. The short recess in financial volatility was followed by a relapse. Unlike previous episodes, the trigger was not in the Fed policy but China, EM vulnerabilities and potential impact of EM & DM.

Portfolio Flows

- EM Portfolio flows in Q4-15 were similar to Tantrum times (~ \$ -65 Bn.). Since the Taper it was ~ \$ -350 Bn. Very much the Lehman times alike. This happens in a context of much lower weight of EM assets in global portfolios.
- Selective and strong flow reallocation away from EMs remains with little discrimination. Increased active portfolio management and retail investor base warrant higher flow volatility and sensitivity to global financial conditions.

Summary

(Review of previous quarter events & insight into 2016 on behalf of the information collected as of January 30th 2016)

Asset prices

- Financial tensions: EM financial tensions failed to recede. China's contagiousness unveils EM's cyclical fragility. Divergent monetary paths in DM are also a source for volatility.
- Risk premia: the stint of financial tensions and worrying outlook brought a moderate risk re-pricing that derailed some EM from Investment Grade (Brazil)
- FX: currencies best gauge the negative sentiment towards EM financial assets. Global factors weighted in all currencies depreciation, intensity will vary on vulnerabilities and funding structure (more on bonds).

Forecasts & Analysis

- Baseline scenario is for EM flows steadily to run below long term trend reallocating from EMs to DMs.
- Our forecasts carry a strong tilt to the downside for EM capital flows and assets valuations amid the array of risk factors ahead (doubts about China growth, spillovers RMB devaluation, corporate debt overhang in some key EM, geopolitical tensions) and the lack of policy room to maneuver. In a risk scenario it shouldn't be discarded an enhanced activism from EM Central Banks to avoid domestic balance sheet mismatches.



100%

55.45

12.55

Capital flows

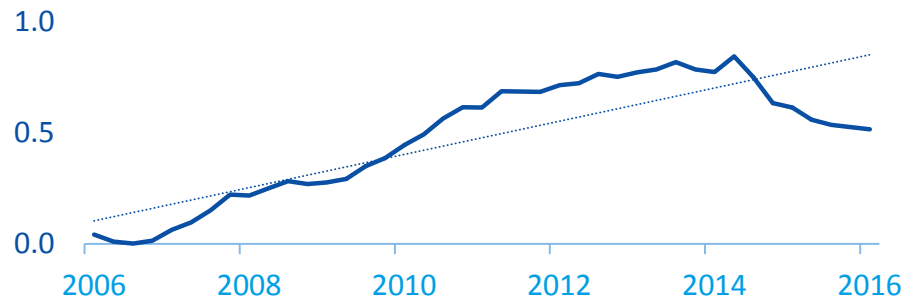
Quarterly assessment

The China triggered sell off continues

generalized by private balance sheet vulnerabilities in a context of uneven global monetary policy (in line with negative scenario)

Cumulated Portfolio Flows to Emerging Markets using High Frequency Data

(Flow in US\$ Tn)



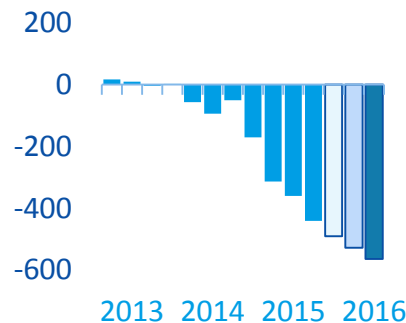
EM Portfolio flows in Q4-15 were similar to Tantrum times (~ \$ -65 Bn.)
Since Taper it was ~ \$ -350 Bn.

Events unfolded as envisaged in our negative scenario (bringing flows below the previous base scenario)

A sell-off episode that reminds early Lehman times
In both cases flows went down -50% from equilibrium levels and along the same period

High Frequency Imbalance Assessment

(Deviations from Long Term Trend in % of Portfolio Flow Excess in %)



Countries orbiting the oil setback

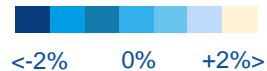
and those caught in geopolitical conflicts and strongest macro vulnerabilities register the largest net portfolio outflows

BBVA High Frequency Portfolio Flows Map

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



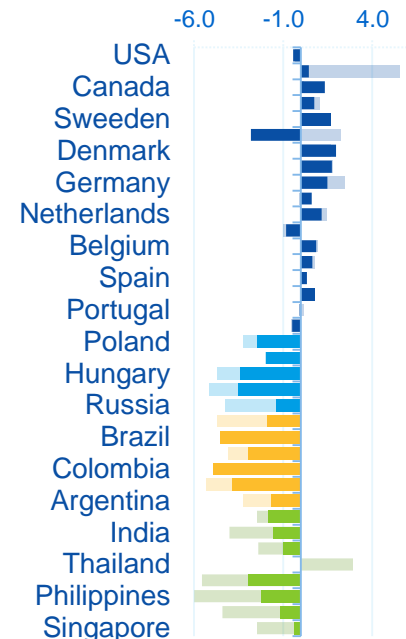
- Reallocation and *flight to quality* supported DMs (mainly, Japan). Oil concerns also strike Norway
- Discrimination in the Eurozone valuations and real interest rate conditional
- EM Europe caught in the weakening cycle and the geopolitical blockade Russia/Turkey
- Commodity prices correction and the scarce monetary room to maneuver had a stake in Latam
- Very scarce discrimination (Thailand and India) possible in Asia, caught in the weakening cycle despite of the non commodity exporting condition



*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 4Q15 vs. 3Q15

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

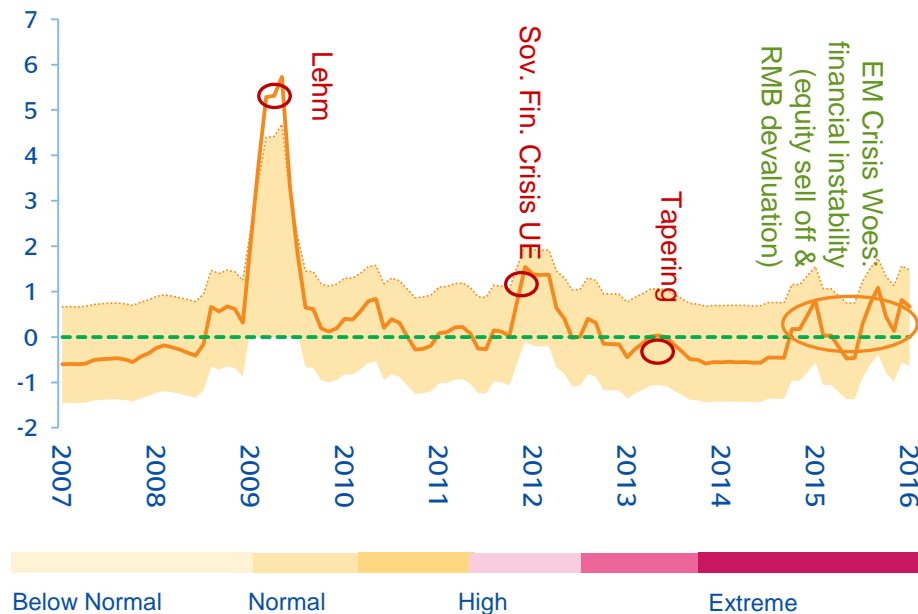


Relentless flight to quality and persistent and broad based volatility across risk assets

May anticipate this turning into an EM crisis episode with global reach

BBVA Research Safe Haven Indicator

(Median Safe Haven Factor from flows and asset prices data using the BBVA DFM/FAVAR Model)

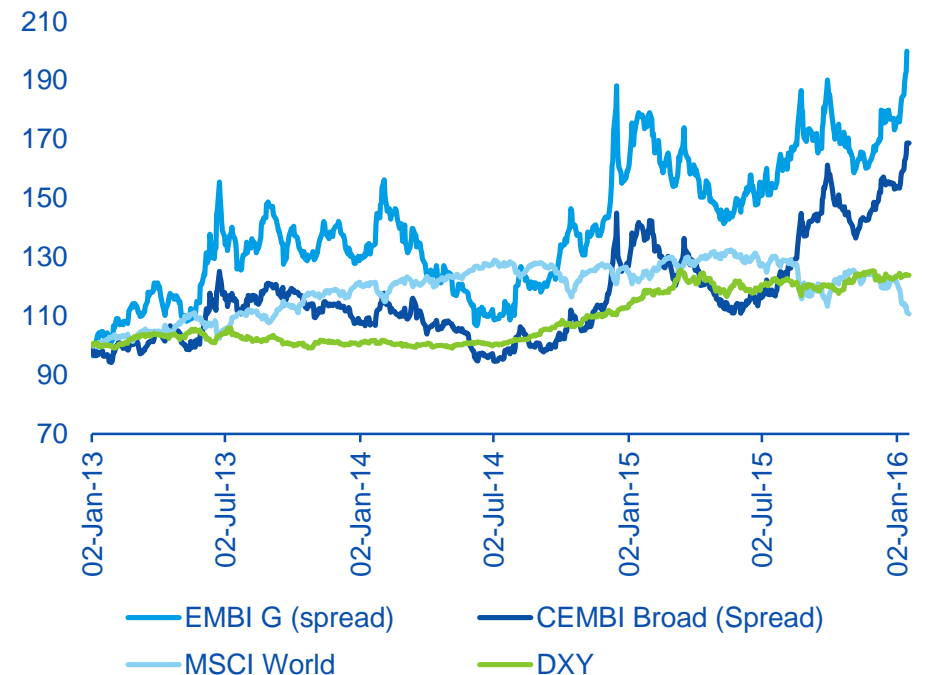


BBVA Safe Haven Indicator Represents the median of the selected Safe Haven Components in Portfolio Flows, Risk Premia and FX data

Source: BBVA Research

Performance Financial Assets

(Base year 2013) EMBI: EM sovereign bond index, CEMBI: EM corporate bond index, MSCI World: world equity index, DXY index



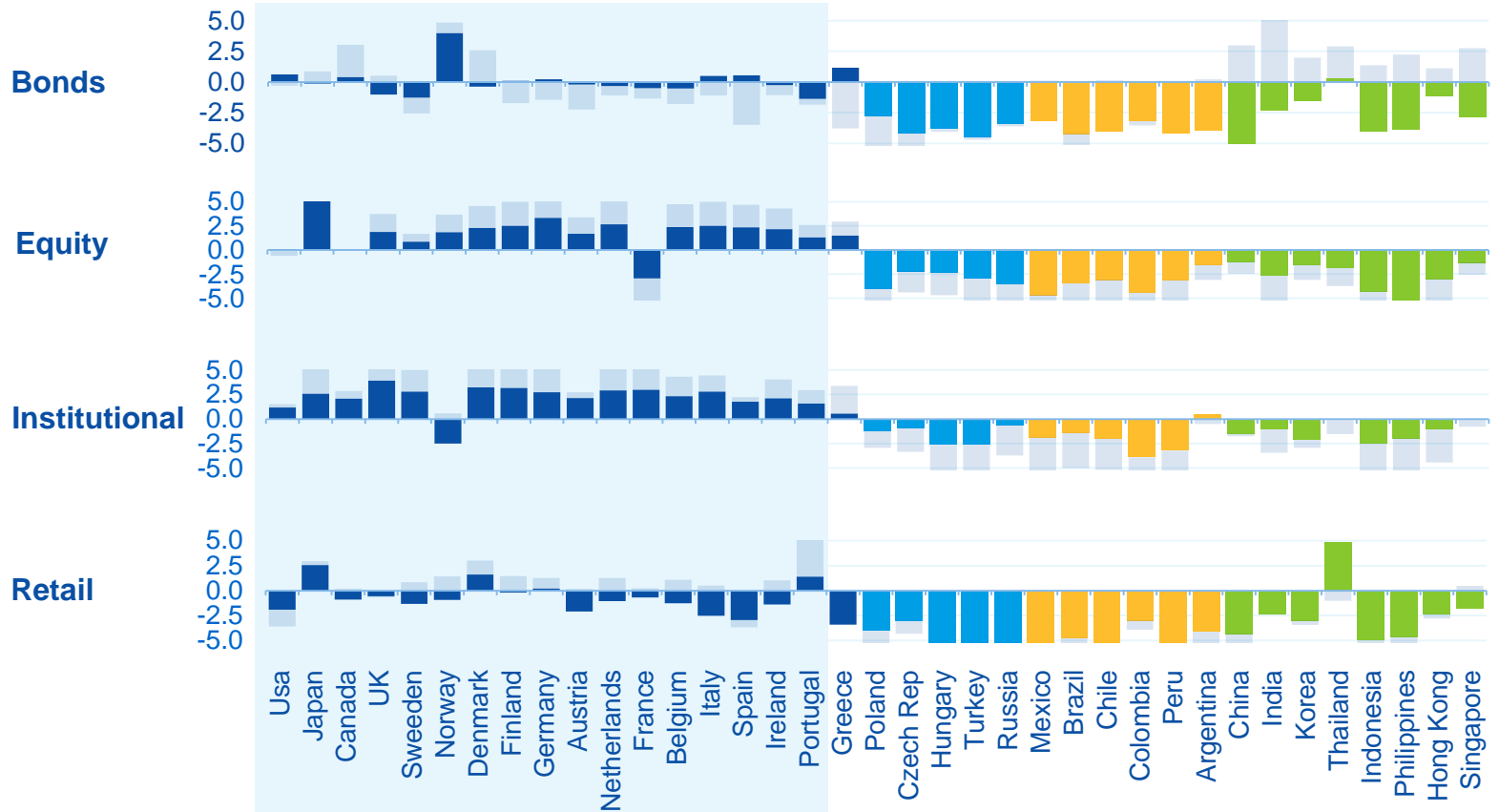
Source: BBVA Research and Bloomberg

Increased active portfolio management (open end mutual funds*) and retail investor base

warrant higher flow volatility and sensitivity to global financial conditions

Net Flows Q4 2015 by Asset Class

(% quarterly change in Country Flows over Total Assets. Shades are previous quarterly changes)



Net Flows Q4 2015 by Investor Type

(% quarterly change Country Flows over Total Assets. Shades are previous quarterly changes)

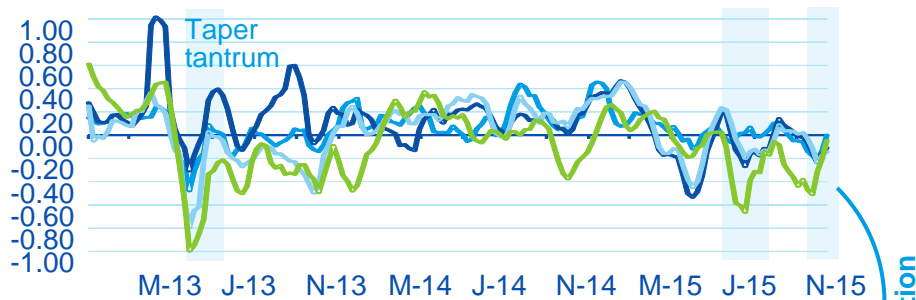
Initial rotation from Bonds (Fed lift-off) to Equity (attractive valuations)

and preference for safe assets (reallocation) soon followed by simple flight to quality (January equity global sell-off and increase in gold prices)

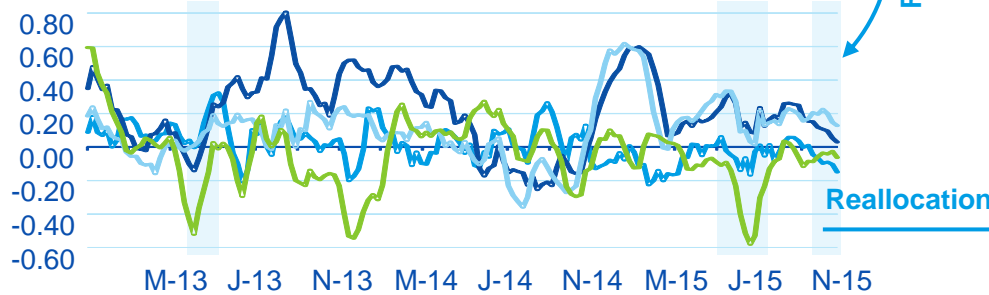
Capital flows by region: 4-week moving average

(country flows as % of AUM)

Bonds



Equity

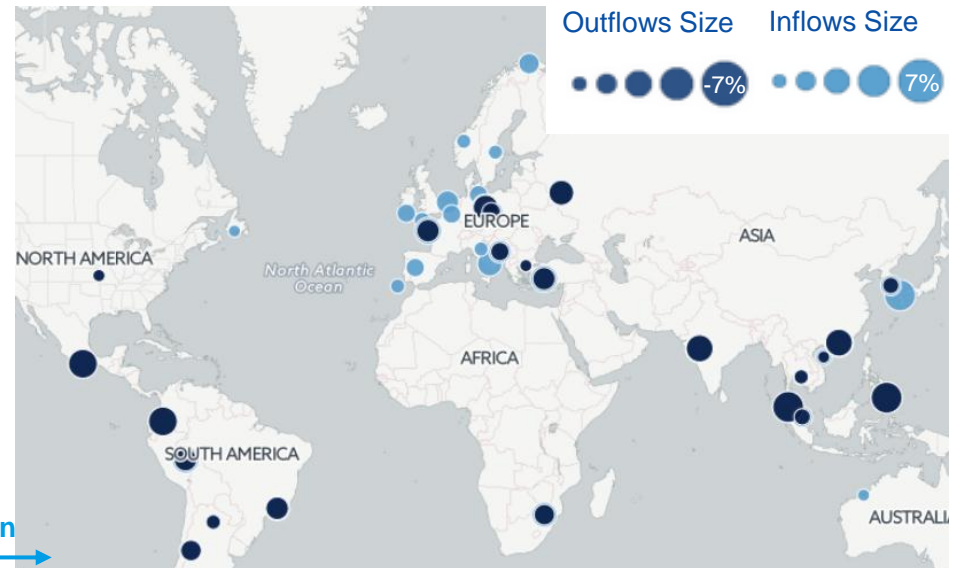


— US — Peripheral Europe — Core Europe — EM

Source: BBVA Research

Estimated Net Equity Flows Q4 2015

(Dark blue are Net Outflows, Light Blue are Net Inflows in Q415)



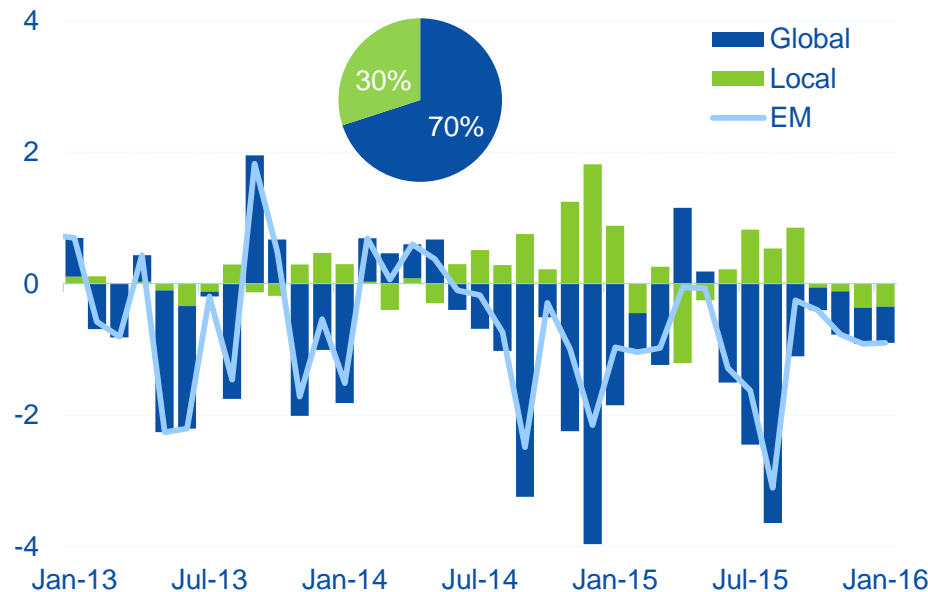
Source: BBVA Research

Global factors relentlessly dominate net outflows away from EMs*

yet the idiosyncratic cycle still plays a very relevant role.

Emerging Markets Flows

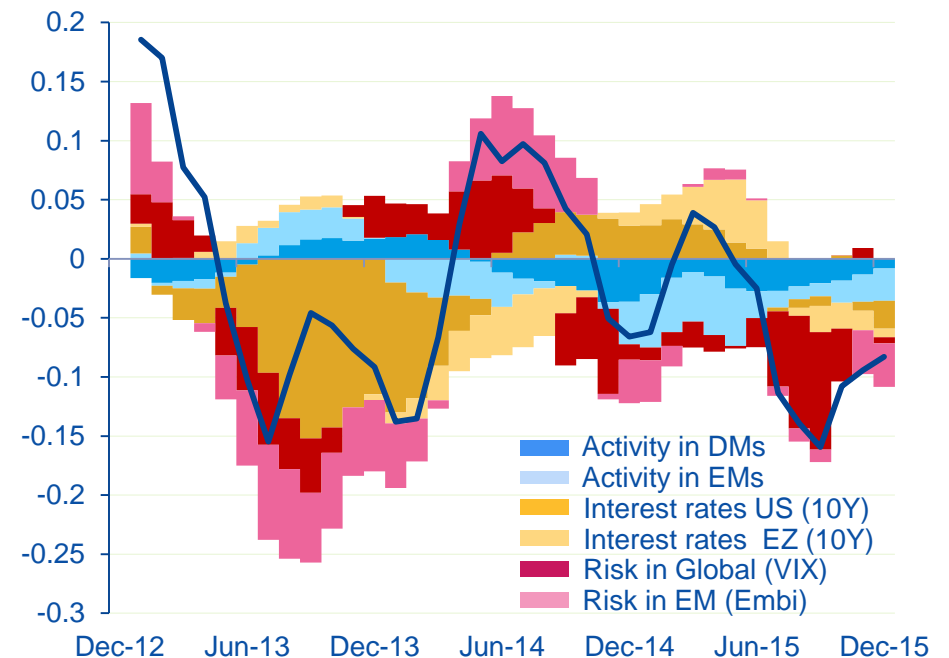
(Median Emerging Market Portfolio Flow Decomposition, monthly change in %)



(*). Increased redeemable funds acting at shorter horizons exacerbate the movement as less pension and insurance long term funds give leeway to more Open End MFs and ETFs

BBVA Global Factor of Portfolio Flows Decomposition

(First Factor from Flows using BBVA's [DFM/FAVAR Model](#) represents the main driver of flows)

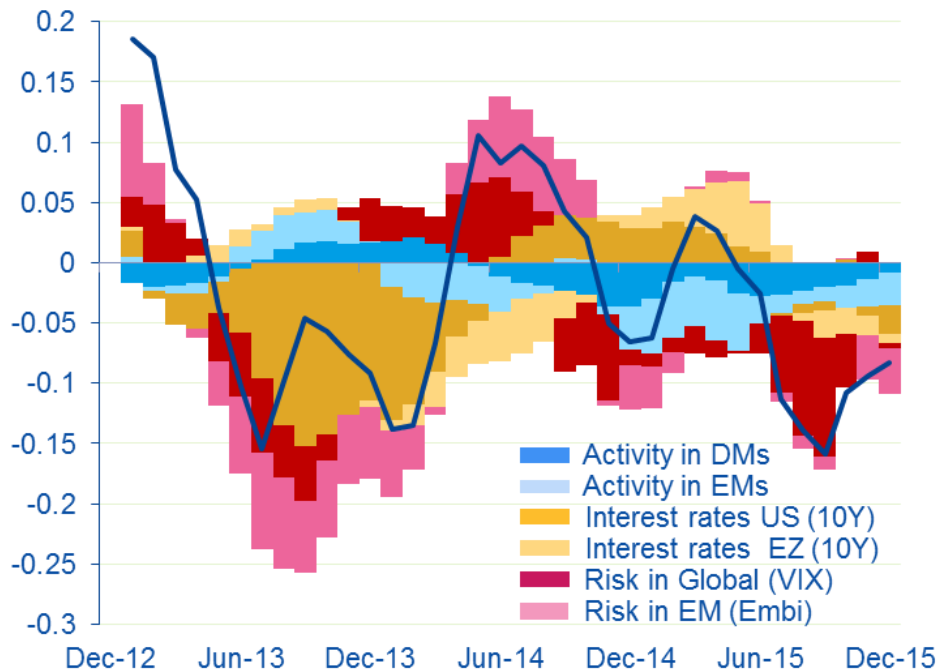


EM risk perception loops back and forth into global risk aversion

in a context of Fed's new stance

BBVA Global Factor of Portfolio Flows Decomposition

(First Factor from Flows using BBVA's [DFM/FAVAR Model](#) represents the main driver of flows)



Factors in Q4 2015

- Materializing US monetary policy shift (Dec. hike) and undershooting expectations on ECB additional measures
- Worryingly worsening of EM growth supplements tepid recovery in DMs
- Portfolio flows impaired on global risk aversion amid Chinese uncertainty (economic cycle) and EM idiosyncratic factors

Factors expected in Q1 2016

- Heightened global risk aversion bundled to monetary policy dynamics. Global liquidity concerns in the context of increased cost of capital (USD appreciation and expected US rate path)

Financial Variables

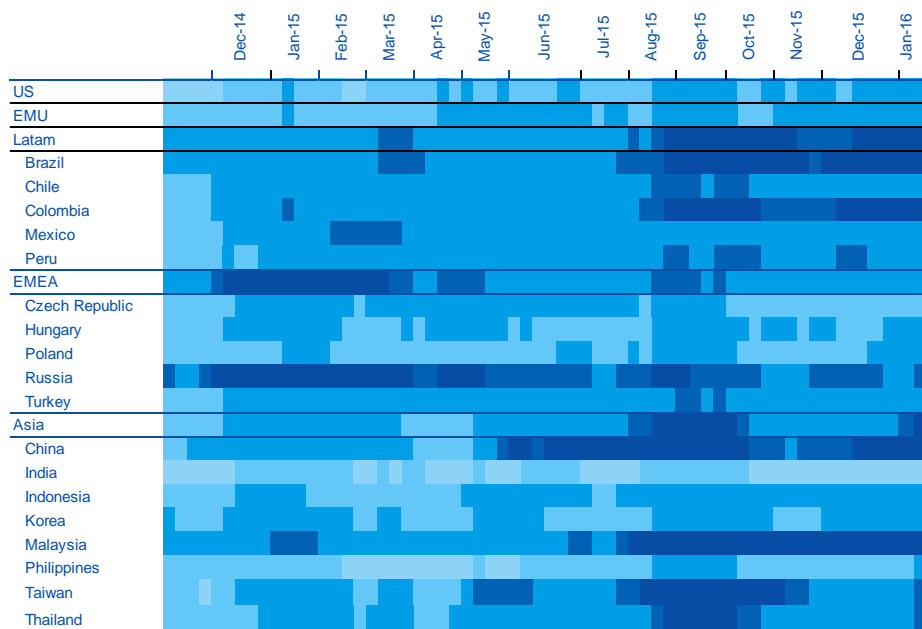
Quarterly assessment

EM Financial Tensions stuck at summer levels

China's contagiousness unveils EM cyclical fragility. Divergent monetary paths in DM are also a volatility source

BBVA Research Financial Stress Index regional map

Standard deviation $\approx (-1, 1)$



Very High Very Low

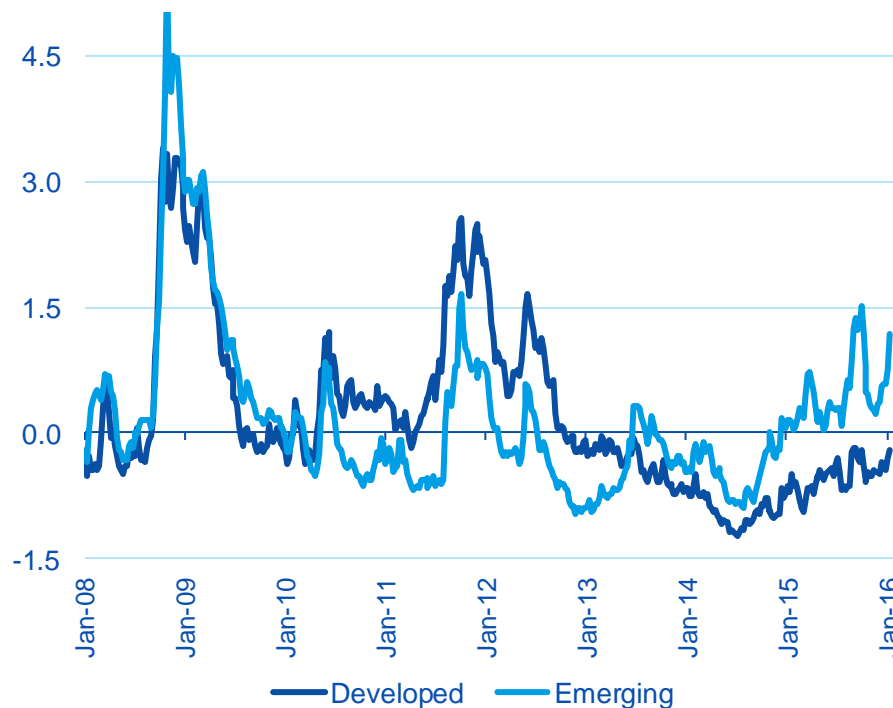


BBVA Financial Tensions Index MAP
 This indicator measures financial tensions from different indicators across DM and EM Countries
 These indicators are: sovereign risk measures, stock market volatility, bank credit risk (CDS 5yr), corporate credit risk, interest rate volatility, currency volatility and liquidity tensions.

Source: BBVA Research

BBVA Research Financial Stress Index for Developed and Emerging markets (normalized Index)

(normalized Index)



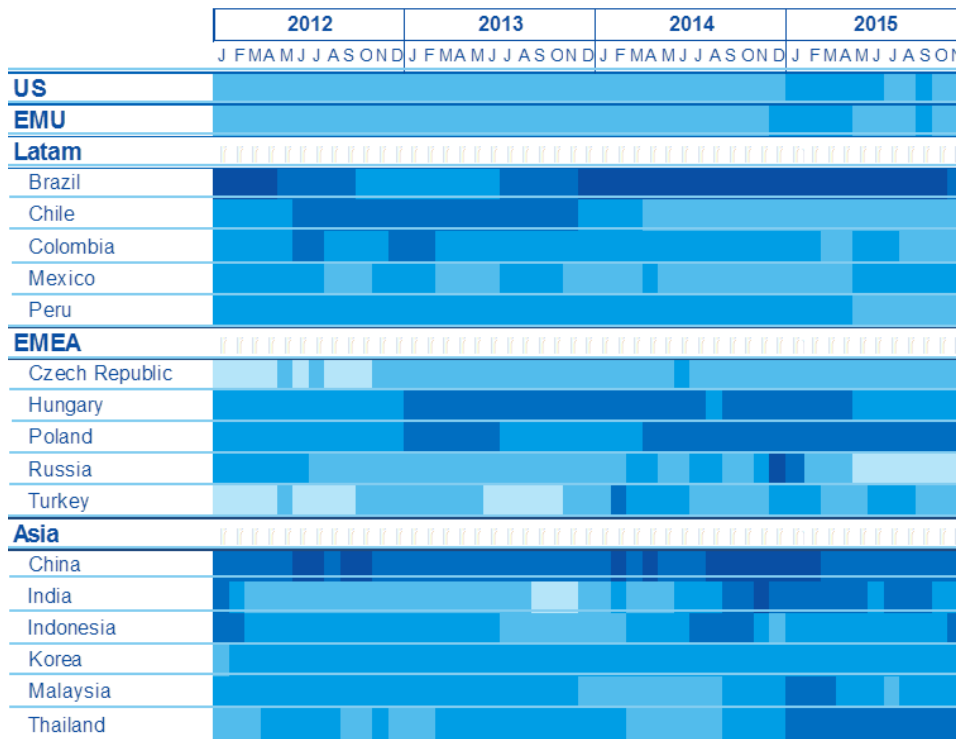
Source: BBVA Research based on Bloomberg data

EM monetary policy trilemma

remains: countercyclical role vs. inflation anchoring balance sheet stabilization

Real Interest Rates map

Level up to Nov-15



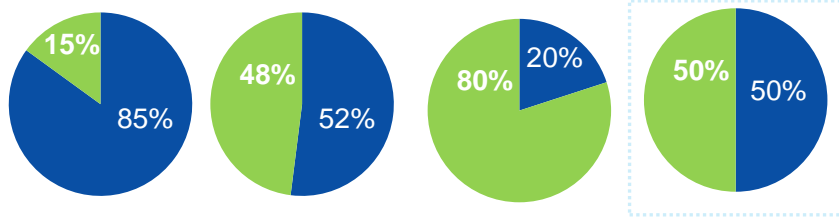
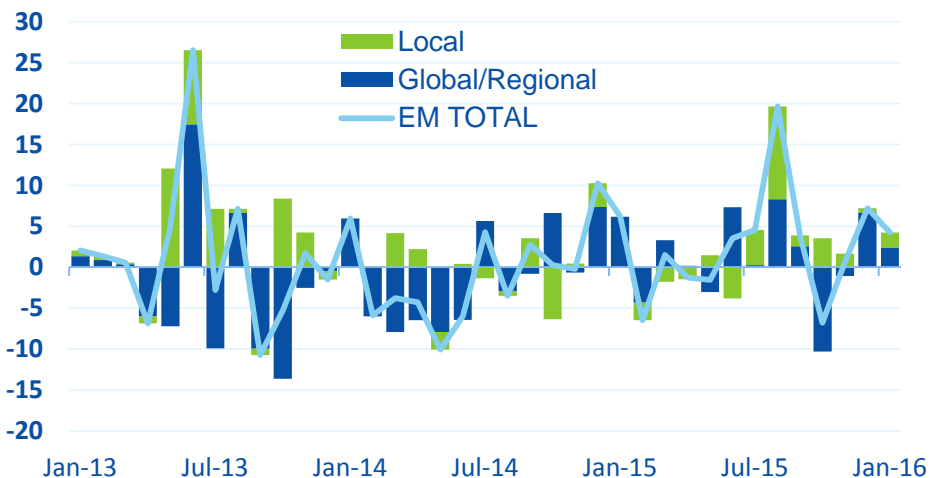
Interest rates changes in last quarter			Bias onwards
=	+	-	
			Gradual IR hikes conditioned to inflation
			No changes to promote economic recovery
			No changes to safeguard financial stability
			IR hikes needed to anchor inflation and/or guarantee financial stability
			No changes in line with ECB monetary stance?
			IR hikes needed to anchor inflation
			Additional monetary easing
			No changes and/or additional monetary easing following PBoC



EM risk premia evenly affected by a mix of global and local factors

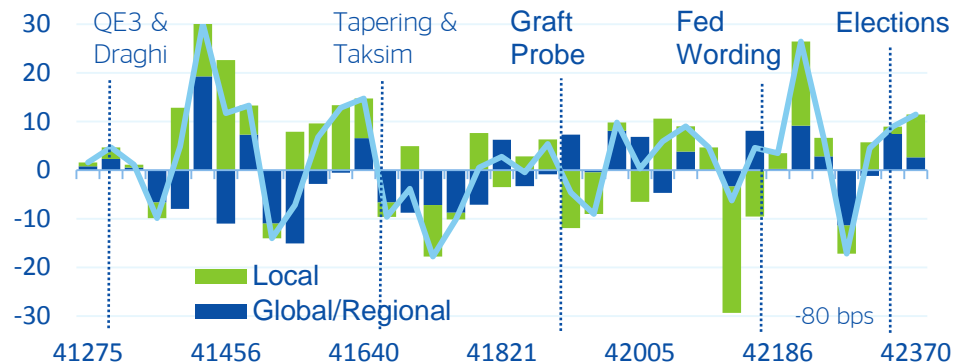
Yet a vast degree of dispersion is found among EMS

EMs change in risk premia
(Median EM 5Y CDS in bps change)

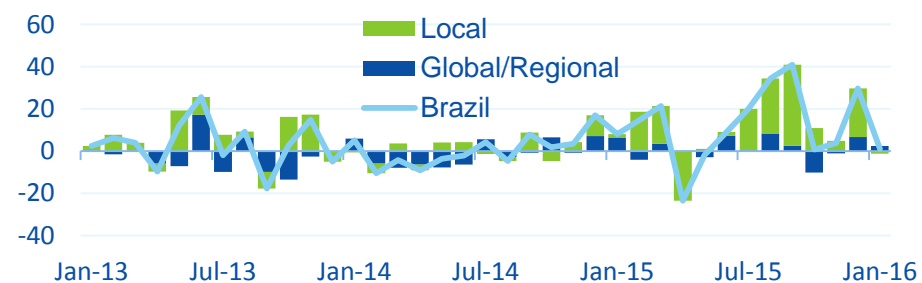


Source: BBVA Research

Risk Premium Change in Turkey and Factors



Risk Premium Change in Brazil and Factors



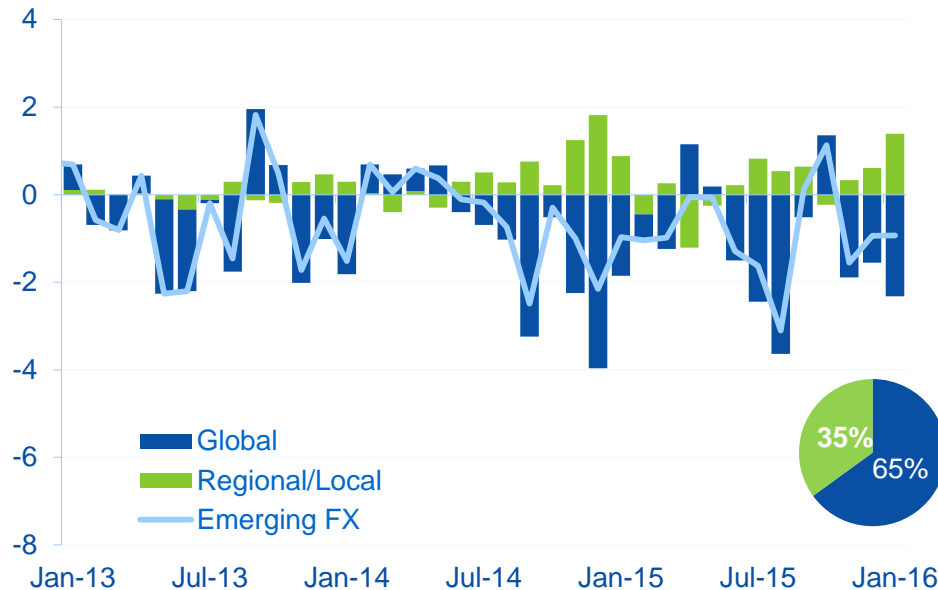
Source: BBVA Research

Exchange Rate: currencies best gauge the negative sentiment towards EM financial assets

Sudden RMB shifts triggered strong financial volatility changes

FX Change Decomposition in Emerging Markets *

(in % MoM change, negative are depreciations vs USD)

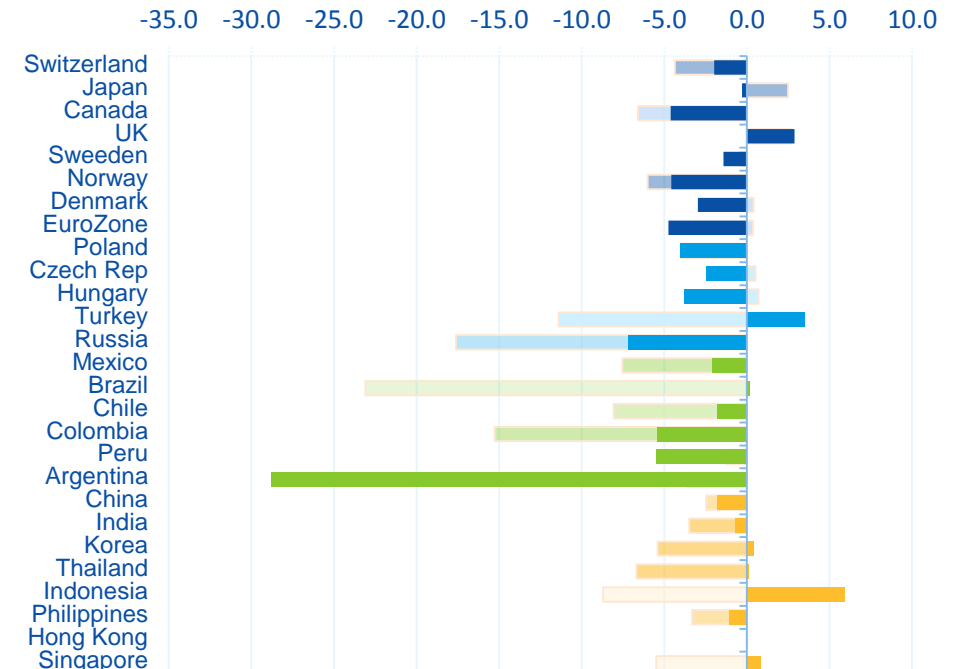


(*) Measured as median % MoM change from the following Emerging Economies; Turkey, Poland Czech. Rep., Hungary, Russia, South Africa, Mexico, Brazil, Chile, Colombia, Argentina, Peru, China, Korea, Thailand, India, Indonesia, Philippines, Hong Kong, Singapore

Source: BBVA Research

FX 4Q15 vs 3Q2015 change in %

(shades are last quarter's cum FX change vs USD)



(*) Argentinas case Comes after the new government decision to free the exchange rate controls.

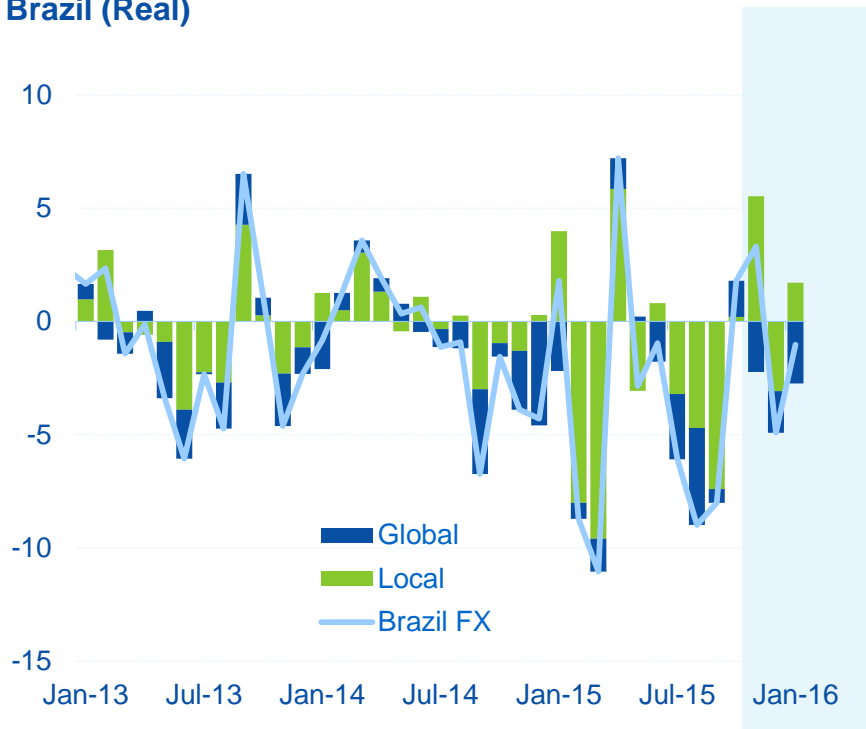
Source: BBVA Research

The effect of global factors is greater where funding remains coupled to bond inflows

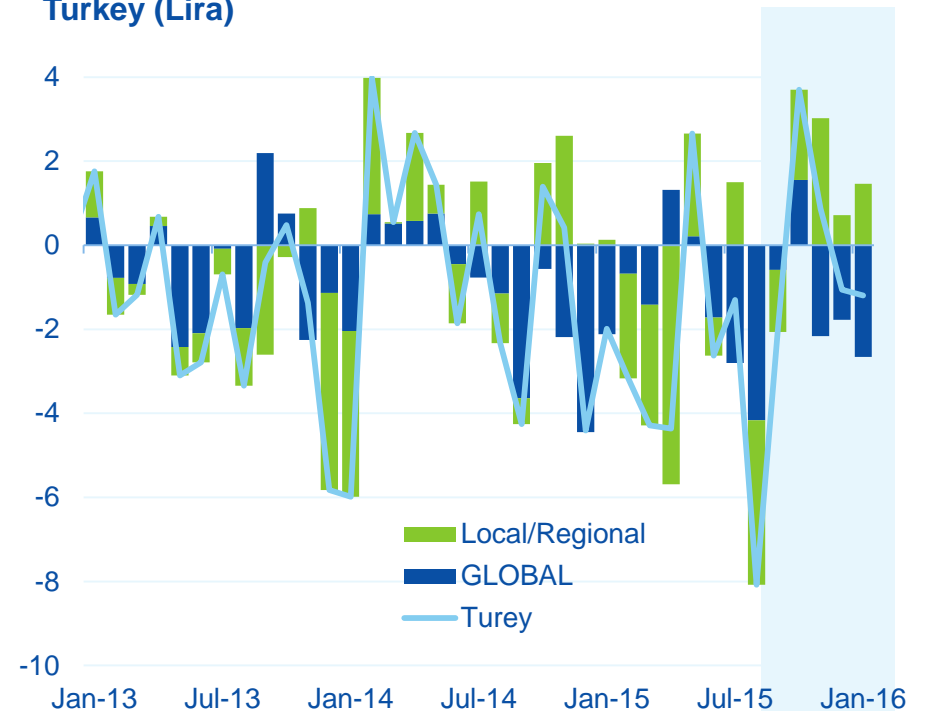
FX Change Decomposition in Emerging Markets

(in % MoM change, negative are depreciations)

Brazil (Real)



Turkey (Lira)

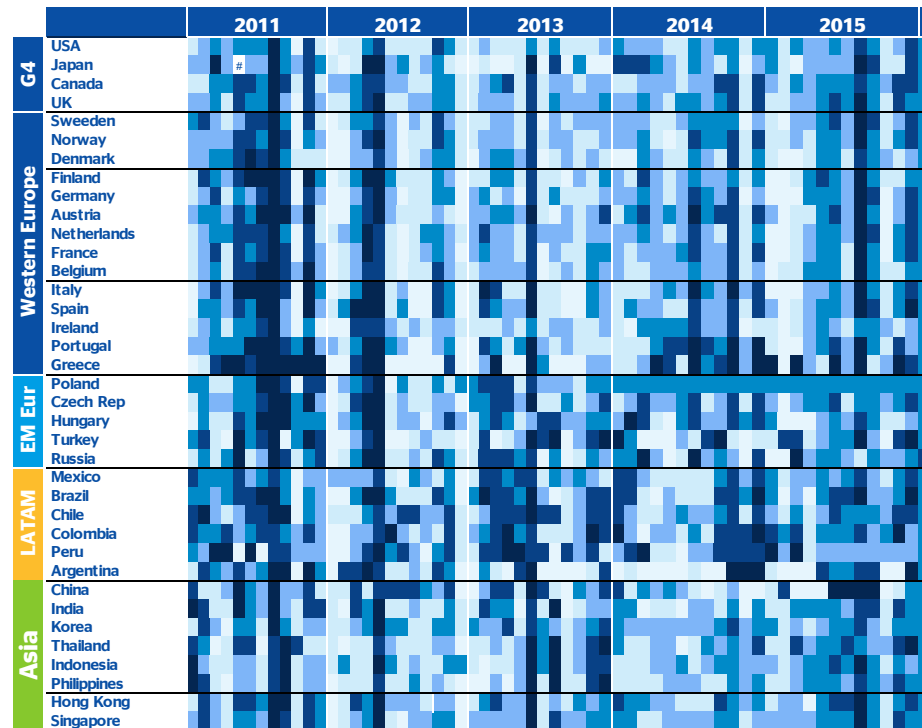


Equity prices dropped across the board in a global sell off

As anticipated FX risk re-pricing, higher cost of capital & faltering growth slashed earnings expectations

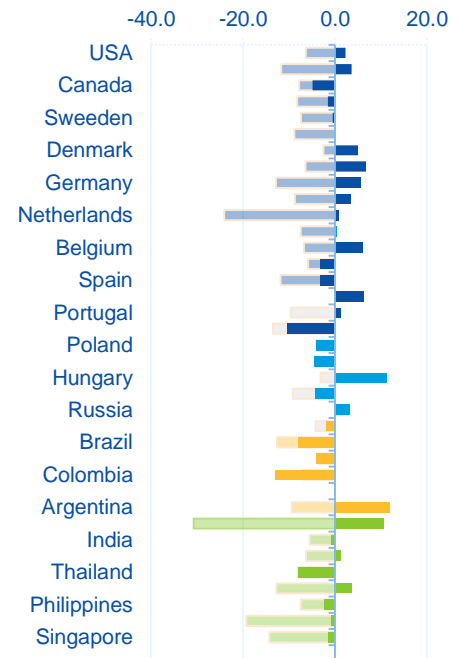
BBVA Equity Price Map

(Monthly Variation of Equity Price Indexes in %)



Q4 2015 Equity price Changes

(% QoQ) (shades are last quarters QoQ change)

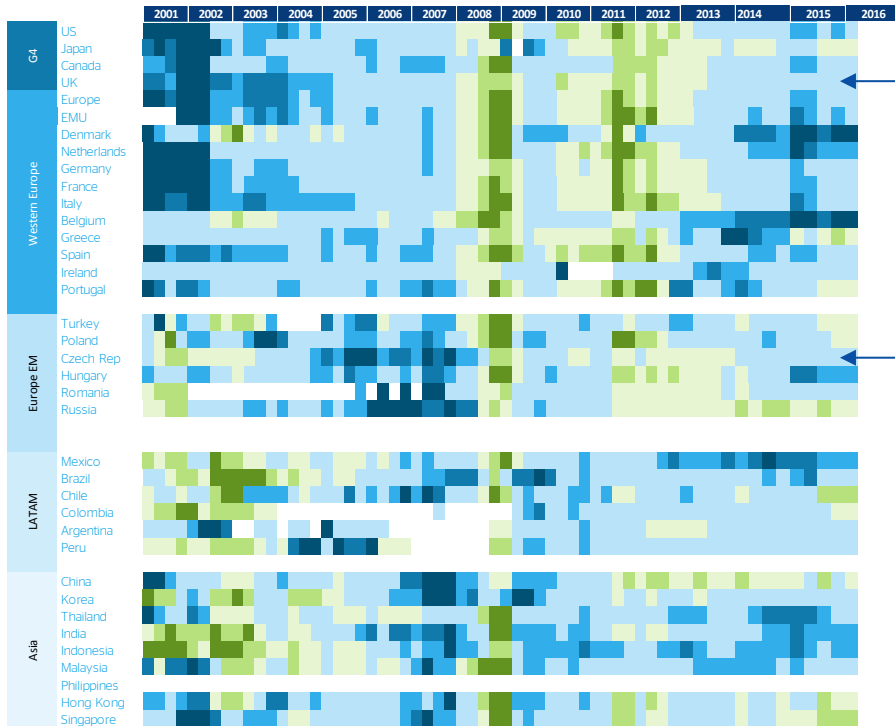


Recent sell-off improved equity markets valuations

Though short stints of reversion cannot be discarded, uncertainties about the profit cycle prevent a sustainable price recovery

BBVA Assessing Equity Market Misalignment Composite Indicator

(Weighted average, of PER 12months Forward, PER12months Trailing and P/B Ratios) updated Jan 20th

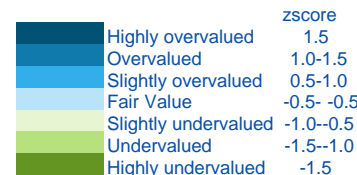


● **Most DM returned to levels close to fair value, after equity markets plunge early in 2016.** Yet, there are some core EZ stocks that remain overvalued

Equity valuations mixed in EM. In Latam, Chile and Colombia are undervalued in historical terms, while Mexico moderated its overvaluation

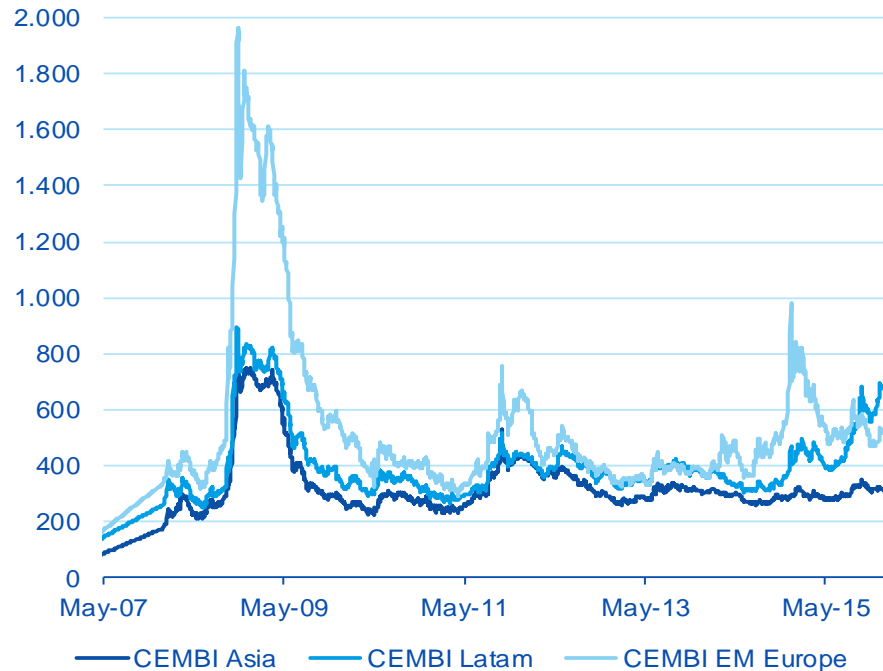
● In EM Europe, **liquid markets such as Turkey, Poland and Russia remained undervalued**, but the uncertainty about the oil prices and idiosyncratic factors limited the gains in the short-term

In Asian markets, India and Indonesia remain overvalued, while China is undervalued, although uncertainties about the policy management makes difficult a sustainable recovery of prices



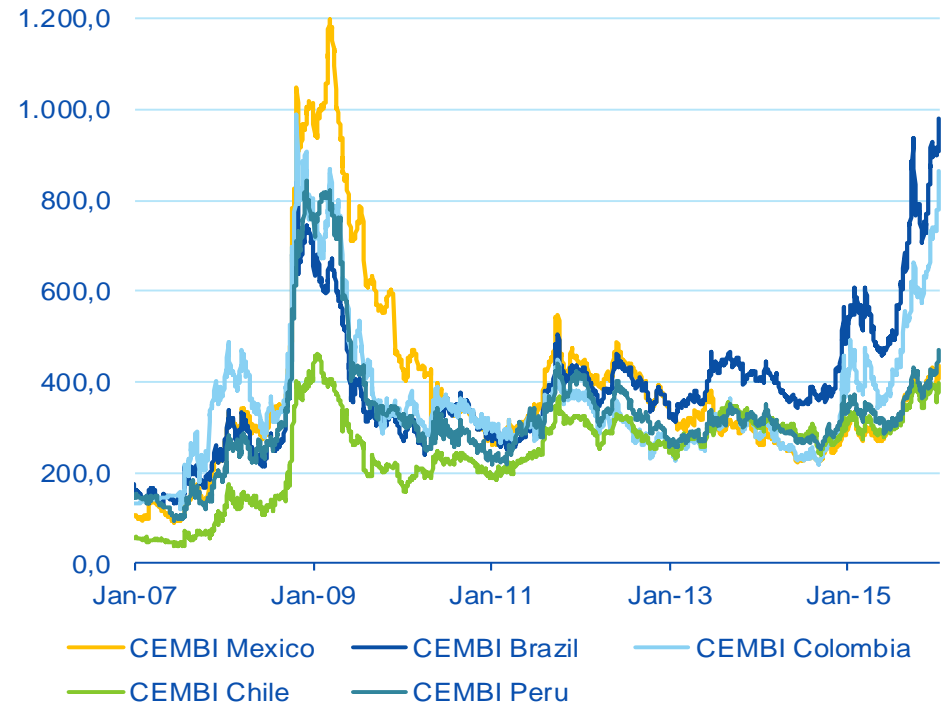
Could financial markets be pricing a 2nd. round of tail risks on corporates, sovereign & quasi-sovereign?

EM Corporate debt index
(spread bp)



Source: JP Morgan, BBVA Research

EM Corporate bond index
(spread bp)



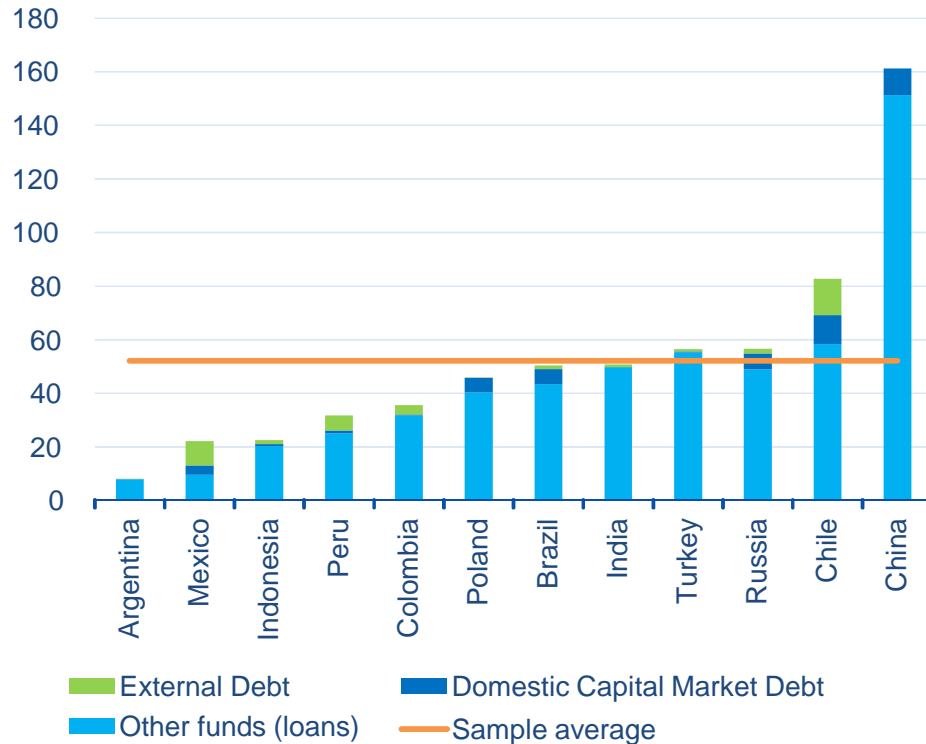
Source: JP Morgan, BBVA Research

Corporate debt overhang in key EMs could exacerbate the loop between cyclical adjustment

And higher financial costs bringing further FX depreciation & higher rates

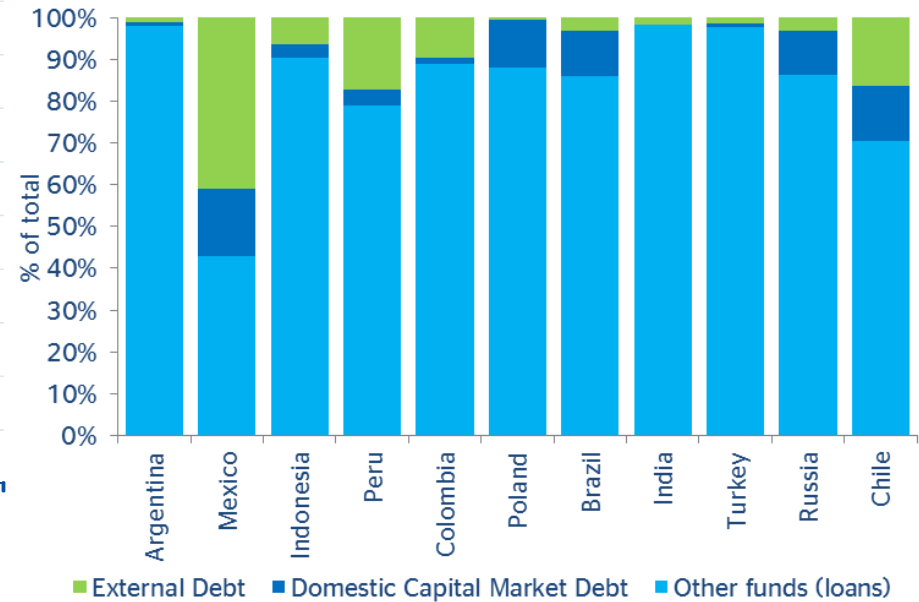
EM: Corporate debt

(as % of GDP)



Corporate Debt, structure up to Q115

(% total)





Scenarios

Simulation analysis

Shocks

Vast array of shocks with global scope

Some Known unknowns such as a sharp RMB depreciation or a credit crunch in big EM could amplify the impact

Shocks	Shock definition	Contagion Channels	Global impact: greatest impact on...
China's shock	Financial disruption -equity bubble burst and sharp RMB devaluation-with significant impact on domestic demand. Failure of economic policies to avoid a hard landing	Spike of volatility, in particular, sharp rebound in EM risk premia& FX depreciations Intense commodity prices fall (oil below 20\$/b in 2016-17) & global trade downturn	EM commodity exporters (LatAm), China's trade partners (other Asian countries and USA) and EM countries with a vulnerable external position (Turkey, Brazil)
EM Debt Overhang (Corporate leverage)	Economic downturn and credit crunch in big EM: negative feedback loop between lower corporate profitability and financial constrains. Higher impact on those corporates with more exposure to indebtedness denominated in FX	Cycle of defaults in corporates with high indebtedness. Spillovers on banking sector (rebound of NPL) and domestic activity	Vulnerable EM with high private indebtedness (China, Brazil, Turkey)
Failed recovery in EMU and Japan and/or US cyclical relapse	Stagnation in EMU and Japan and/or technical recession in US. Ineffectiveness of monetary policy (deleveraging process & capital investment constrains)	Increase of global risk aversion smoothed by additional QE stimulus Commodity prices relapse (oil close to 30\$/b in 2016-17) & global trade slowdown	Countries with close trade links with EMU (EM Europe), Japan (EM Asia) and/or US (Mexico)
Geopolitics: complex and interconnected events	Upsurge in geopolitical tensions in Middle East: new wave of refugees crisis, social unrest and spiral of terrorist attacks	Rebound of financial tensions in neighbors. Potential increase of oil prices if conflict impacts on its supply	EM Europe
	In Europe, populism gains ground and puts at risk the political stability Risk of Brexit (UK in/out EU) increases	Higher risk premia (structural reforms halt) + economic slowdown through lower confidence & credit restrictions	EMU Peripheral countries
Fed tightening path	Higher/sharper than expected interest rate hikes, not supported by domestic demand improvement, provokes US recession	Increase of global risk aversion & funding constrains across the board. Huge EM capital outflows Synchronized activity adjustment, more intense in those sectors dependent on debt funding	EM with a more vulnerable external position (FX debt & current account deficit) as, for example, Turkey and Colombia

Probability

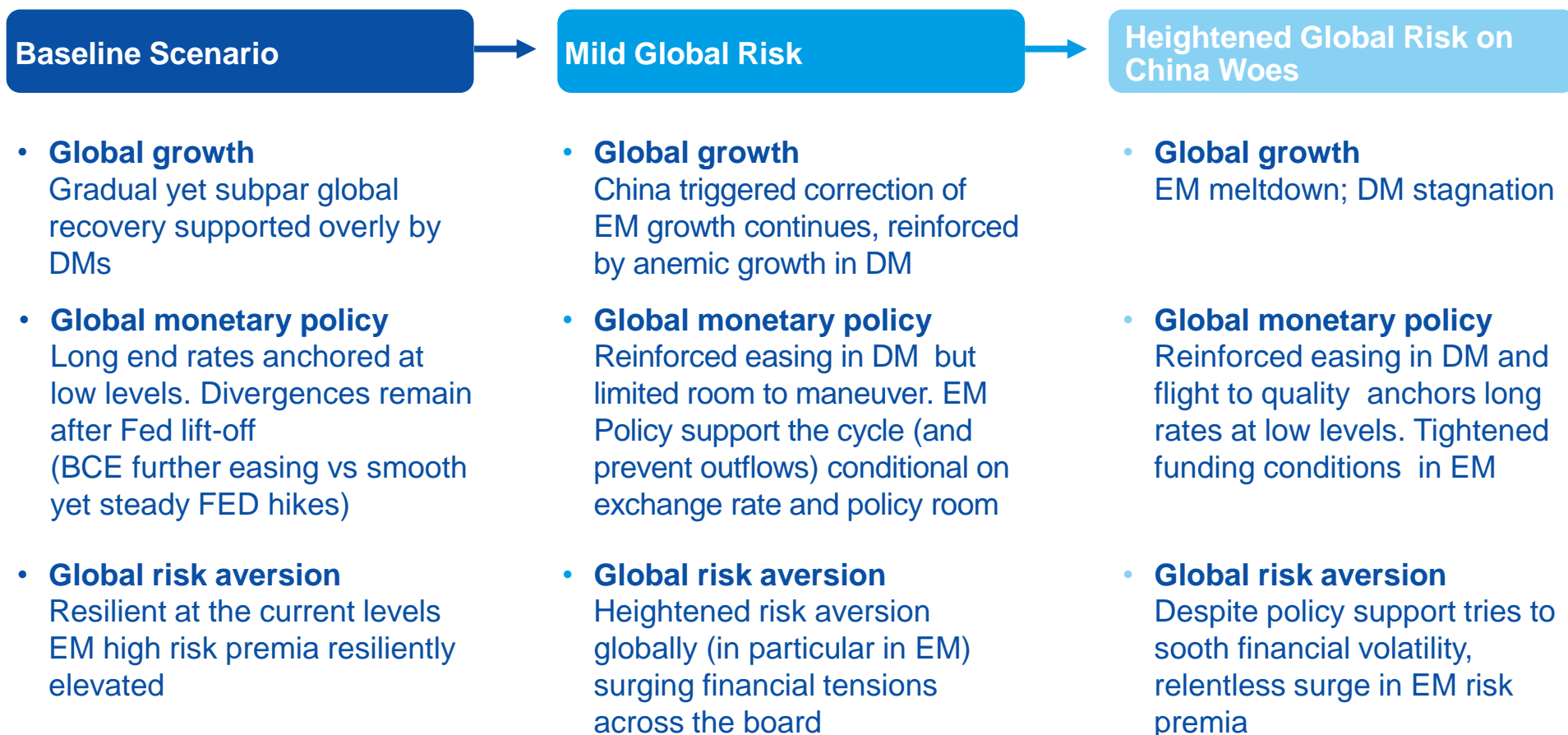


Severity degree



Scenarios

All carry a tilt to the downside for EMs



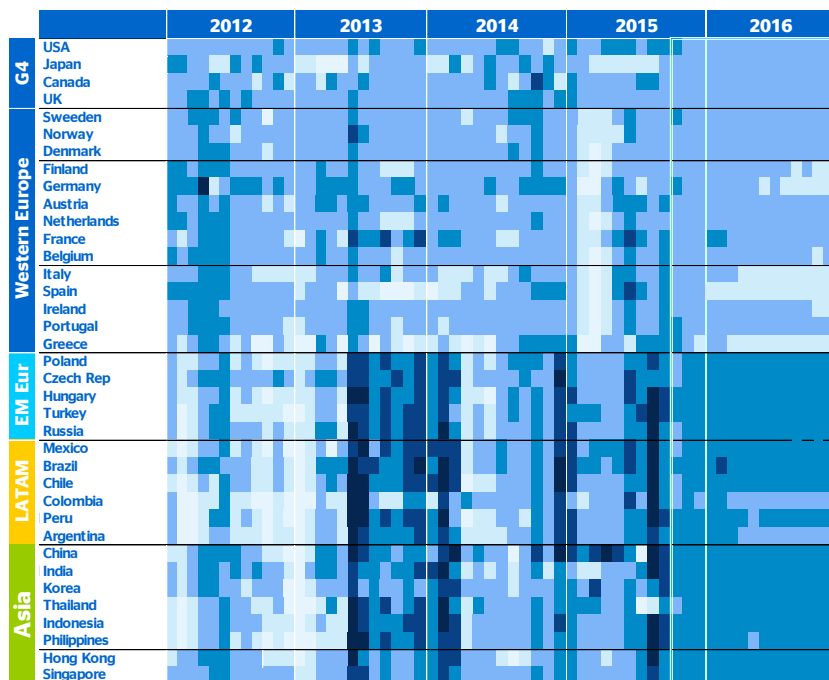
Baseline Scenario

Selective reallocation continues from EM to DMs

EM flows steadily below long term trend

BBVA Baseline Scenario of Portfolio Flows

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



Source: BBVA Research

Baseline Market & Macro Scenario

Global Growth (risk to the downside)

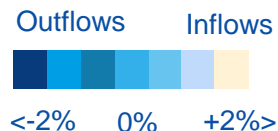
+3.6 pp in 2016-17 avg.
 +2.3 pp DM
 +4.8 pp EM

Global Monetary Policy

2.3 pp & 2.9 pp 10y T-note in 2016 & 2017 EoP
 0.60 pp & 0.9 pp 10y Bund in 2016 & 2017 EoP

Global Risk Aversion

Stable VIX relaxes back to 20 points until 2017 EoP
 EMBI resiliently elevated at 4.4 pp 2017 EoP



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

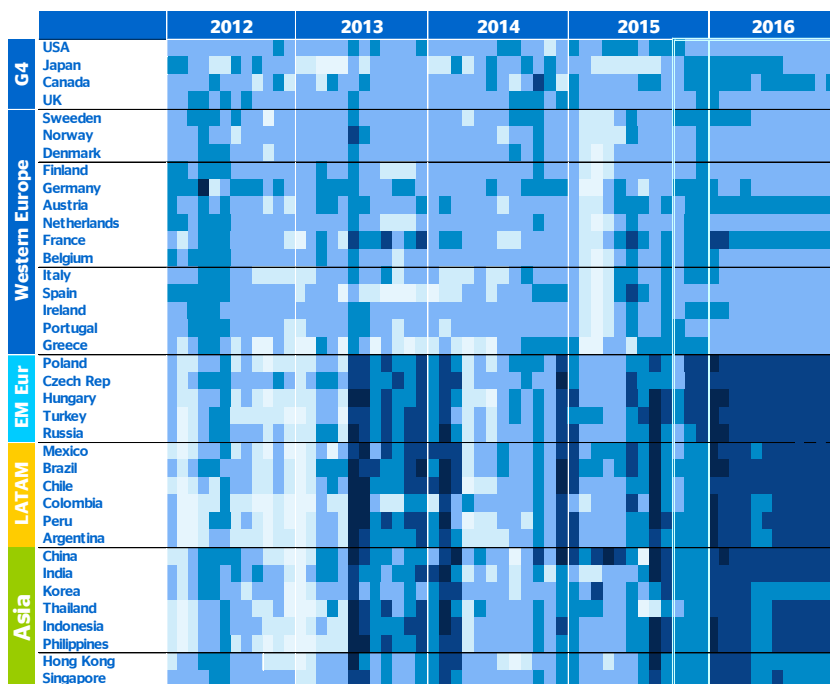
Baseline Scenario

Selective reallocation continues from EM to DMs

EM flows steadily below long term trend

BBVA Baseline Scenario of Portfolio Flows

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



Source: BBVA Research

Baseline Market & Macro Scenario

Global Growth (risk to the downside)

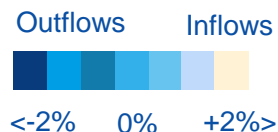
1.0 pp below baseline in 2016-17 avg.
DM -1.0 pp below baseline
EM -1.5 pp below baseline

Global Monetary Policy

10y T-note -70 pbs below baseline on average in 2016 & 2017
Bund -60bps below baseline on average in 2016 & 2017

Global Risk Aversion

VIX remains at 24 points in 2016, 20 points end 2017 EoP
EMBI increases to 5.5 pp in 2017 EoP



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

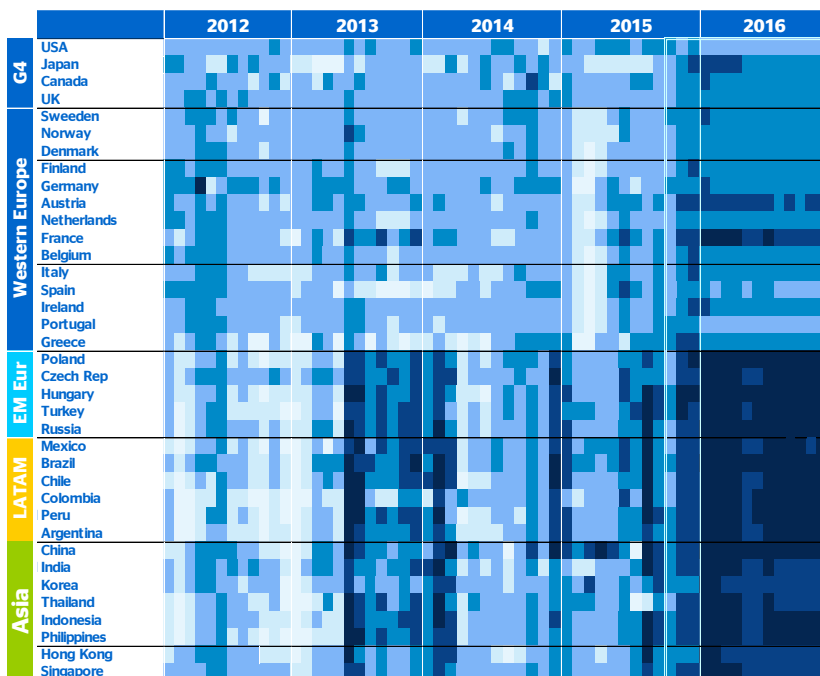
Baseline Scenario

Selective reallocation continues from EM to DMs

EM flows steadily below long term trend

BBVA Baseline Scenario of Portfolio Flows

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



Source: BBVA Research

Baseline Market & Macro Scenario

Global Growth (risk to the downside)

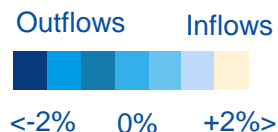
2.1 pp below baseline in 2016-17 avg.
DM -2.2 pp below baseline
EM -3.1 pp below baseline

Global Monetary Policy

10y T-note -140 pbs below baseline on average in 2016 & 2017
Bund -90 bps below baseline on average in 2016 & 2017

Global Risk Aversion

VIX Increases and stabilizes by 30 until 2017 & 25 in 2017 EoP
EMBI surges to 6.5 pp in 2017 EoP



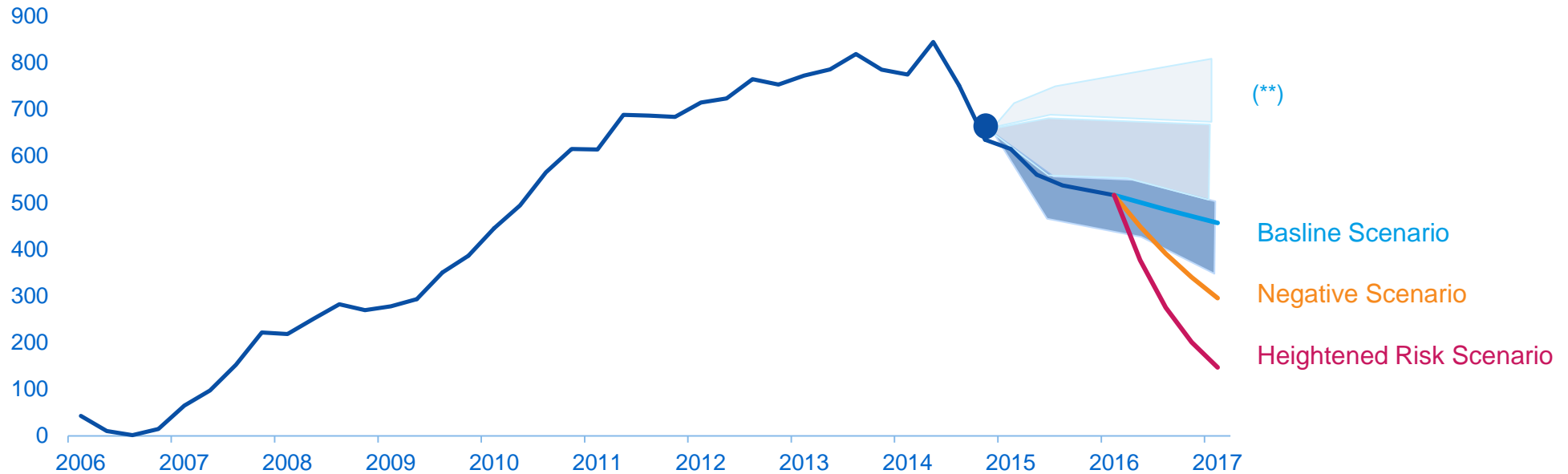
BBVA Research Portfolio Flows Map*
The Flows Map show the monthly evolution of net inflows with Darker blue colors representing sharp net outflows and lighter colors standing for net Inflows

Summary of Scenarios

All carry a tilt to the downside for EMs

Scenario Conditional Flow Paths for EMs

(Cumulated Baseline and alternative scenarios. Cumulative % variation of portfolio Flows, forecast as of December 2015)



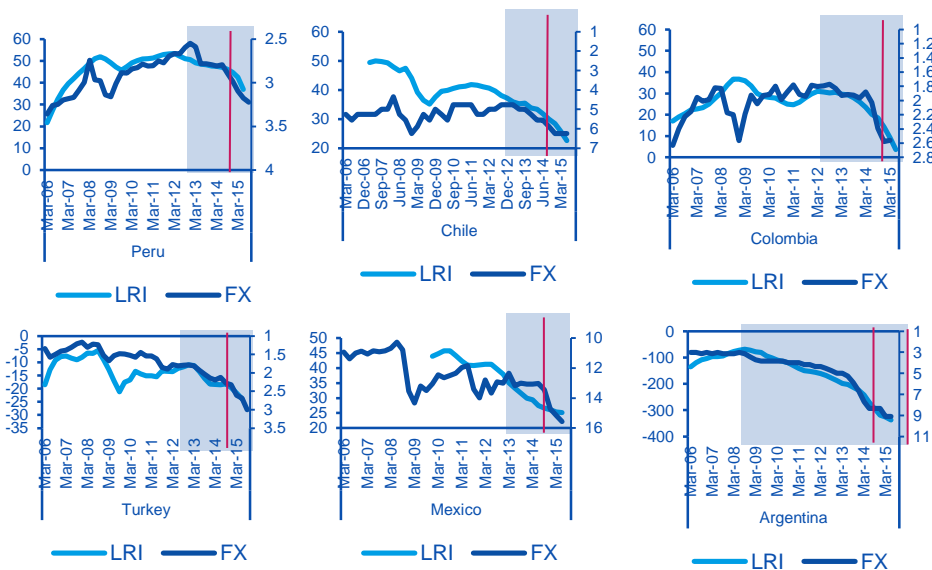


Hot Topics

Liquidity & Exchange Rates

Liquidity & Exchange Rates

Emerging Markets: Liquidity Position & Exchange Rates



Start of the Oil price Slump Q3-2014

Start of the FX depreciation (Q2-2013 or before)

We assess the risk of running short of liquidity by computing the Liquidity Risk Indicator as the share of Reserves and Trade & Capital Income relative to the amount of market liabilities (ex FDI) and short-term banking debt. A Positive value implies a margin to repay the amount of outstanding short term debt by that amount, negative value imply a shortfall of funds to repay short term debt. The chart to the right displays each country's liquidity position (LRI) vs. the exchange rate (FX - RHA in inverse order, right hand axis). Depreciations go along tighter liquidity historically. This process started already in 2013 before commodity prices started to decline.

Source: BBVA Research

Currency dynamics are deeply linked to liquidity position of a country. A tighter situation -be that due to less commodity revenues or due to increased financial severance- feeds into the expectation of reserve depletion.

Ultimately this is predicted to trigger a depreciation of the exchange rate as stabilization mechanism. Over the last two years increased global financial costs (Fed normalization, risk premia etc.) and eroding export revenues due to commodity price cuts and weaker global demand have stressed EMs liquidity positions.

As a result, free-floating currencies (in commodity and non commodity exporting countries) steadily depreciated during the same period. Though the depreciation started before the oil price slump, financial volatility and the commodity price cycle have exacerbated this process



Useful Information

Methodology and Interpreting the Results

A Dynamic Factor Model / Factor Augmented VAR to analyze and forecast flows and asset prices.

Reference Paper: [“Monetary Policy in the North and Portfolio Flows in the South”](#)

Our framework is based on the belief that there are unobservable factors or channels that act at the global (GLOBAL), regional (Developed (DM), Emerging (EM) and Safe Havens (SH) and idiosyncratic (I) transmitting from the global macro economy to flows or asset prices. The origin of these shocks can be created due to monetary policy in DMs, expected growth differentials between DMs and EMs and the differential risk aversion levels arising between the latter two.

To model the behavior between flows and asset prices and these global shocks via the described channels we use a two step approach based on a Dynamic Factor Model (DFM) and its interaction to a Factor Augmented Vector Autorregresion (FAVAR)

In the first part of the model, the “Dynamic Factor Model of Portfolio Flows and Asset Prices”, we use a version of a Dynamic Factor Model. Our set-up comprises a measurement equation block (1) and a state equation block (2). Both blocks together build the so called State Space Model. In this, the measurement equation block relates each observable portfolio flow in the (Y) matrix to several unobservable “states” or latent factors (F) with varying intensities according to the estimated parameters of each flow.

In the second part of the model the “Factor Augmented VAR (FAVAR) model” we state the relation of the extracted factors with a set of macroeconomic variables in the form of a VAR structure allowing time dynamics between the three elements of the analysis: factors, macro and flows/assets.

We have chosen a set of macro variables so that the extracted factors carry strong statistical relations to the global financial cycle represented here with the EUR and US long-term rates that proxy the term premium. Also, factors and these latter variables carry strong links to the Global Risk Aversion and the Differential Risk Aversion to Emerging Markets (here gathered with the VIX and the EMBI respectively as in Rey 2012). Lastly we have analysed the relation of these variables and variables that proxy growth and growth differentials between developed and emerging markets (here as the G7 and great -EM median GDP Q/Q growth rates).

The model is estimated by means of maximum likelihood with Bayesian techniques and a prior that leverages more in the recent past in order to gauge the recent events.

Factors are forecasted conditional to the evolution of macro economic variables following the scenarios described bellow and flows are recovered back from the forecasted factors by means of the estimated measurement equation block (1) described above.

The BBVA_PM: a two step DFM/FAVAR model

Reference Paper: “[Monetary Policy in the North and Portfolio Flows in the South](#)”

(1) The Dynamic Factor Model (DFM) to extract flows (and asset prices) factors

1 Measurement Block Relates Factors (F_t) and Flows (X_t)

$$x_t = \mu + \Lambda f_t + \xi_t$$

2) Transition Block allows for flows (F_t) dynamics as AR

$$f_t = \Phi_1 f_{t-1} + \dots + \Phi_p f_{t-p} + \varepsilon_t$$

The **Noise to Signal Ratio** is maximized, errors are iid.

The process is estimated using a Kalman Filter

Flows assumed to conceal a structure of **latent factors** (L) (**Global, Regional and Idiosyncratic**), Each factor is **orthogonal** and follows an **AR(p)** process ($f(L)$).

$$PF(t)_i = b_{1i} * Global(t) + b_{2i} * EME(t) + b_{3i} * IDIO(t) + U(t) \text{ (emerging)}$$

$$PF(t)_j = b_{1j} * Global(t) + b_{4j} * DME(t) + b_{3j} * IDIO(t) + U(t) \text{ (developed)}$$

$$PF(t)_k = b_{1k} * Global(t) + b_{4k} * DME(t) + b_{5k} * SH(t) + b_{3k} * IDIO(t) + U(t) \text{ (SH)}$$

* See Doz, Giannone, Reichlin (2006), Watson, Reis (2010), Agrippino and Rey, H. (2013) Fratzscher 2013, Rey (2012), Puy (2013) among others

(2) Factor Augmented Model (FAVAR) to combine Macroeconomic variables and factors and Variables

$$\begin{bmatrix} Y_t \\ F_t \end{bmatrix} = A(L) \begin{bmatrix} Y_{t-1} \\ F_{t-1} \end{bmatrix} + \eta_t \quad F = \{ F^{SF}, F^{DM}, F^{EM}, F^G \}$$

$$Y = \{ y^{DM}, y^{EM}, i^{US}, i^{EZ}, VIX, i^{EMbi} \}$$

Exploiting time relations between the extracted latent factors and a set of selected global macro variables (2) and recovering flows by means of the measurement equation block in the DFM.



SHOCK

- Risk Aversion (VIX /EMBI)
- Monetary Policy (Fed, ECB rates)
- Growth differentials

TRANSMISSION

- To Global the Global factor
- To Specific Markets (DM,EM, SH)

REACTION

- Retrenchment
- Reallocation
- Flight to Quality
- etc.

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