

Portfolio flows & Assets Report

Flows to EM will continue to grow but at a lower pace

Third Quarter 2016

BBVA Research

Sara Baliña, Joaquin Iglesias Turina,
Juan Navarro & Cristina Varela

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Summary

(Review of 3Q 2016 events & insight into 2016)

Main drivers

- **Low global financial volatility** once diluted the transitory impact of Brexit outcome
- **Ultra-low interest rates & “search of yield” process** in response to the delay of the next Fed rate hike and the easing bias kept by the other DM central banks
- **Tepid signals of cyclical stabilization**, mainly in some major EM as China or Brazil
- **Onwards, pending on:**
 - the outcome of US elections
 - the cautious tone of DM central banks
 - the evolution of oil prices
 - concerns on European banks

Asset prices

- Financial tensions receded across the board, with EM closing the positive gap with DM (despite the recent rebound of LatAm)
- Gains in risky assets (EM and equity) and lower demand of “safe-haven” assets amidst ultra-low long interest rates
- **Risk Premia:** reduction of risk perception at global scale but mainly in EZ periphery and LatAm (with the exception of Greece, Portugal, Mexico and Turkey)
- **Exchange rates:** benign funding conditions did not support EM FX as expected
- **Equity prices:** recovery built on more favourable valuations. Profits have to take up the torch

Summary

(Review of 3Q 2016 events & insight into 2016)

Portfolio flows

- Our Reallocation Tracker confirms the shift of demand towards EM
- Strong recovery of capital inflows to EM in 3Q (+20% QoQ) for the second quarter in a row driven by the “search of yield” in global portfolios (*reallocation* process)
- The appetite for EM remained spurred by global forces (low risk aversion & cyclical stabilization), still concentrated in bonds and supported by institutional and retail investors
- All EM regions but China received a breath of fresh air
- DM funds remained almost flat, ballasted by low yields (except US bonds) and equity funds. EZ underperformance continued

Scenarios for EM flows

- **Baseline Scenario:** although monetary conditions will remain supportive, we expect a slowdown of inflows in next quarters (+6.0% QoQ in 4Q, leaving the full of year at +10%) due to some increase in volatility
- **Risk Scenarios (biased to the downside):**
 - **Mild: a relatively deep but short-lived financial “slippage”.** Inflows to EM would suffer the impact of higher global volatility, only partially offset by easing monetary policies in DM
 - **Stress: China’s financial crisis.** Global portfolio retrenchment in 2017 with severe impact on EM. Unwinding positions cashed into deposits

Asset prices

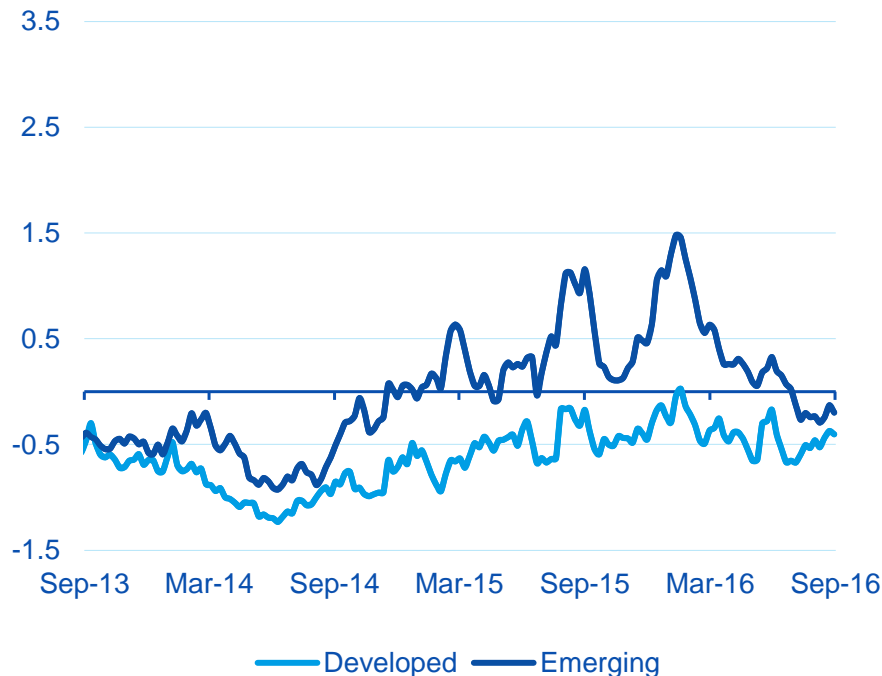
Quarterly assessment

Financial tensions remained subdued across the board...

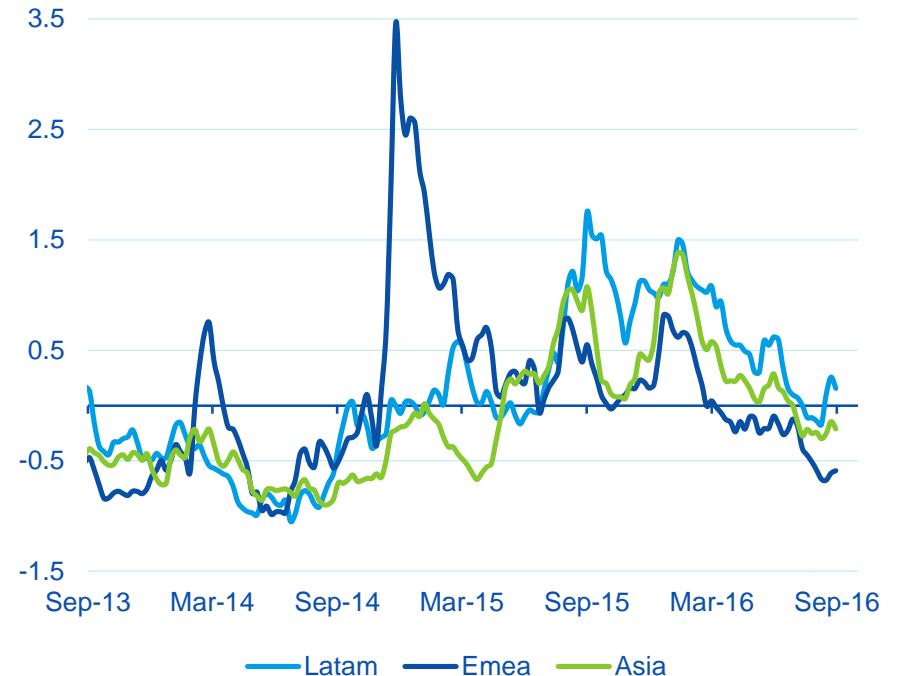
Low and stable interest rates promoted the reduction of the financial volatility during 3Q. Recently, markets have started to reassess the global monetary policy towards a less dovish stance, interrupting the path of correction of financial tensions in both DM and EM.

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

Developed and Emerging markets



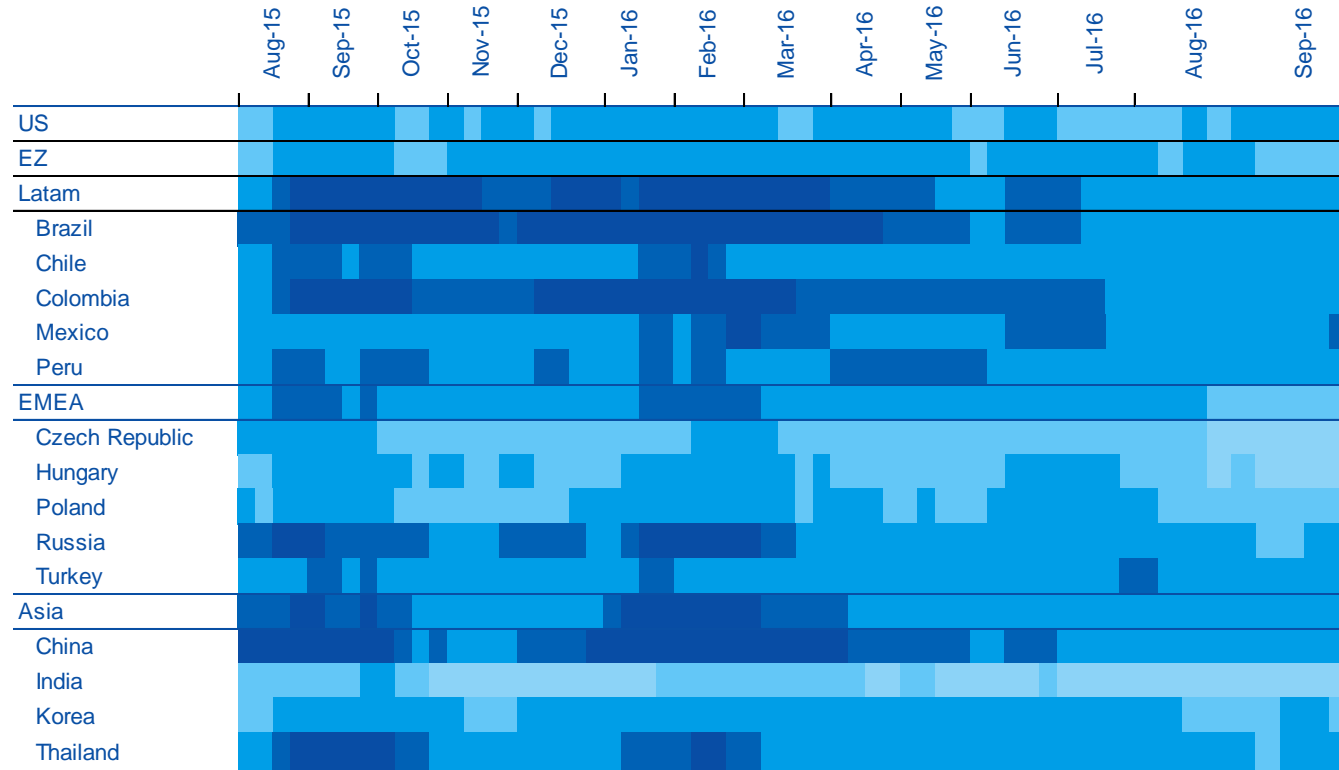
Emerging markets



...with EM closing the gap with DM despite the recent rebound in LatAm

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

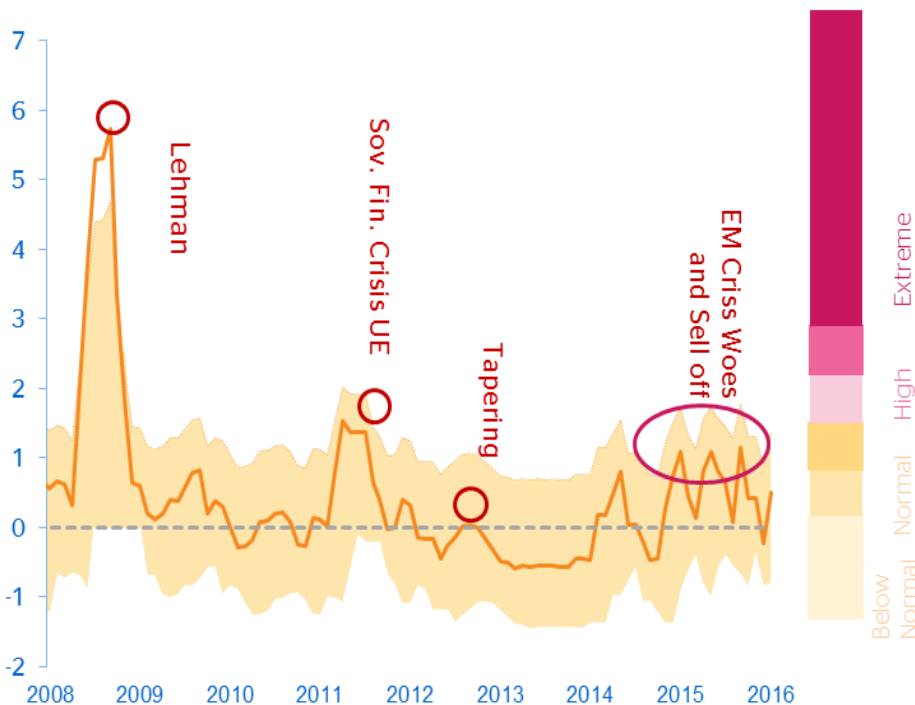
These indicators are: sovereign risk measures, stock market volatility, bank credit risk (CDS 5yr), corporate credit risk, interest rate volatility, currency volatility and liquidity tensions.

Gains in risky assets & lower demand of “safe-haven” assets

Valuations of risky assets were supported by long-term interest rates anchored at very low levels

BBVA Research Safe Haven Indicator

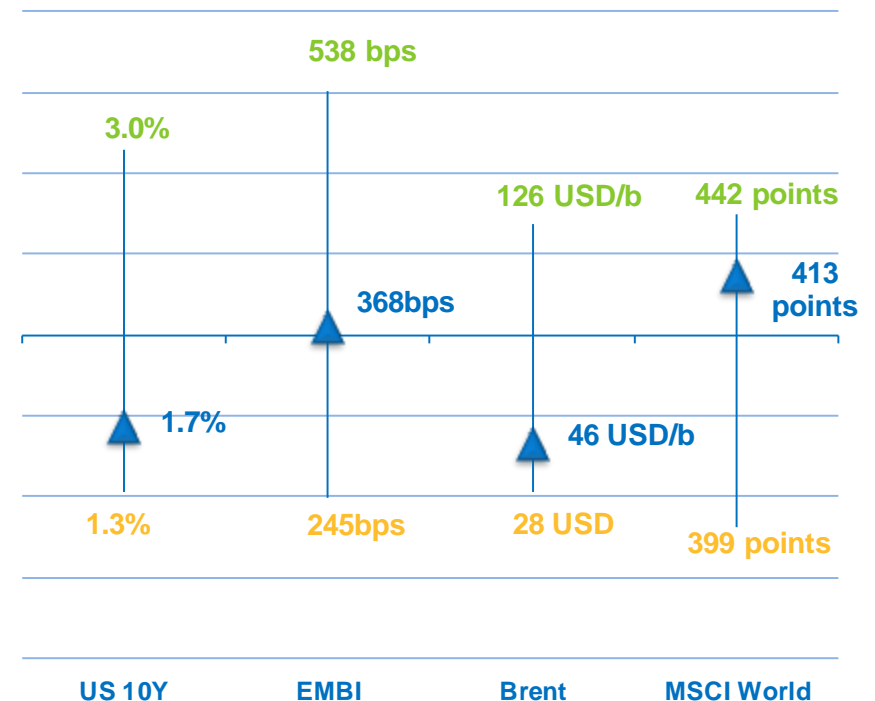
(Median Safe Haven Factor from flows and asset prices data using the BBVA DFM/FAVAR Model)



Performance Financial Assets (2012-2016)

Maximum, minimum and recent prices

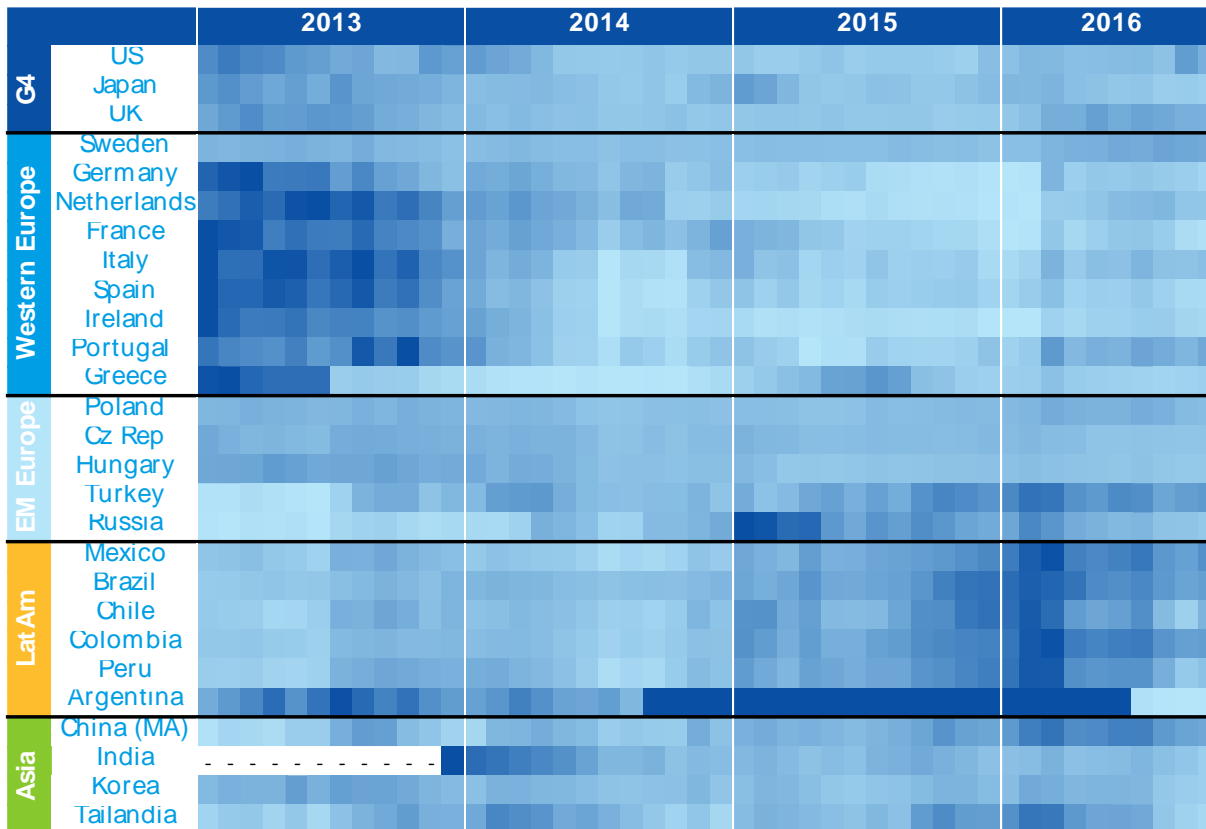
EMBI: EM sovereign bond index, MSCI World: world equity index



Risk Premia (CDS): reduction of risk perception at global scale but mainly in EZ periphery and LatAm

Risk Premia (CDS) Map

(deviation respect to 2012-16 average)

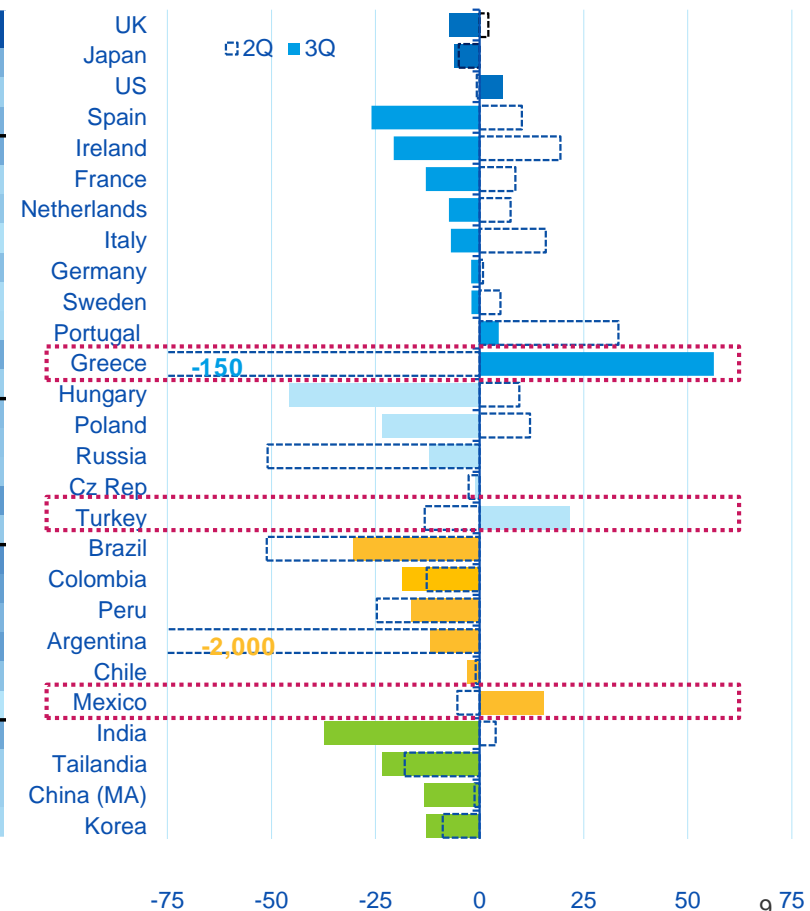


High Risk Low Risk



Q3 2016 CDS (quarterly change, bps)

(shades are variations in previous quarter)

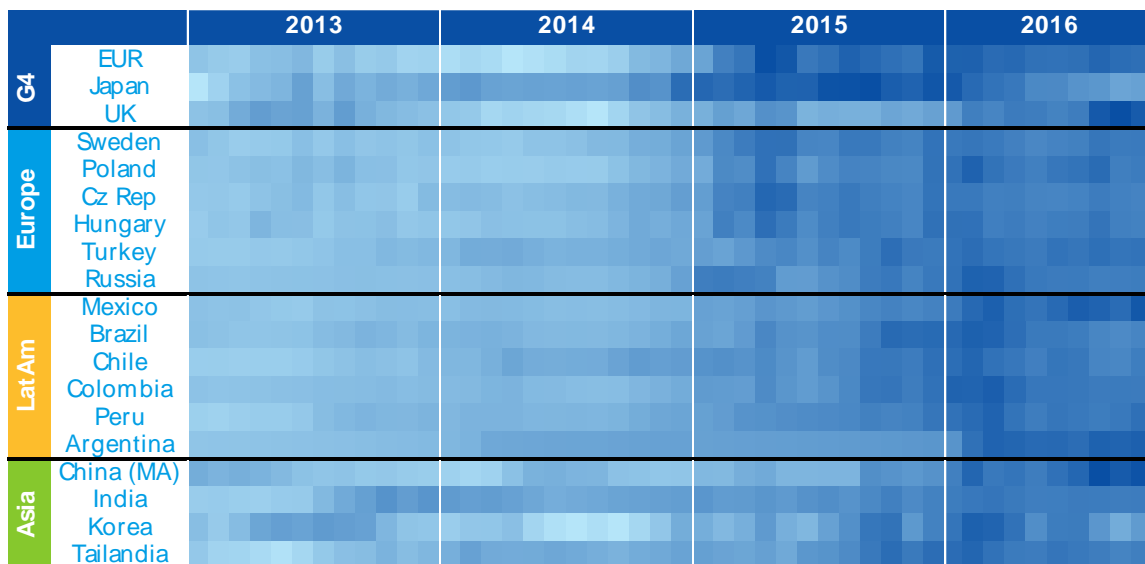


Exchange rates: benign funding conditions did not support EM FX as expected

Major developed central banks seem comfortable with recent levels of currencies

Exchange rate Map (currencies against USD)

(deviation respect to 2012-16 average)

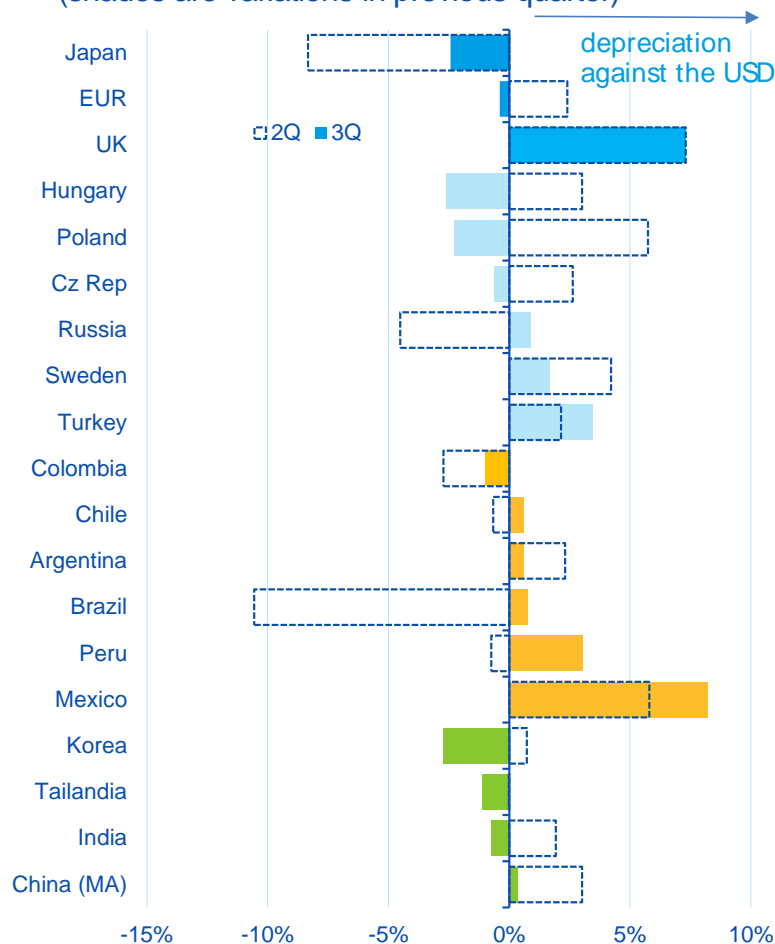


Higher levels against USD (more depreciated) Lower levels against USD (more appreciated)



Q3 2016 FX (quarterly change, %)

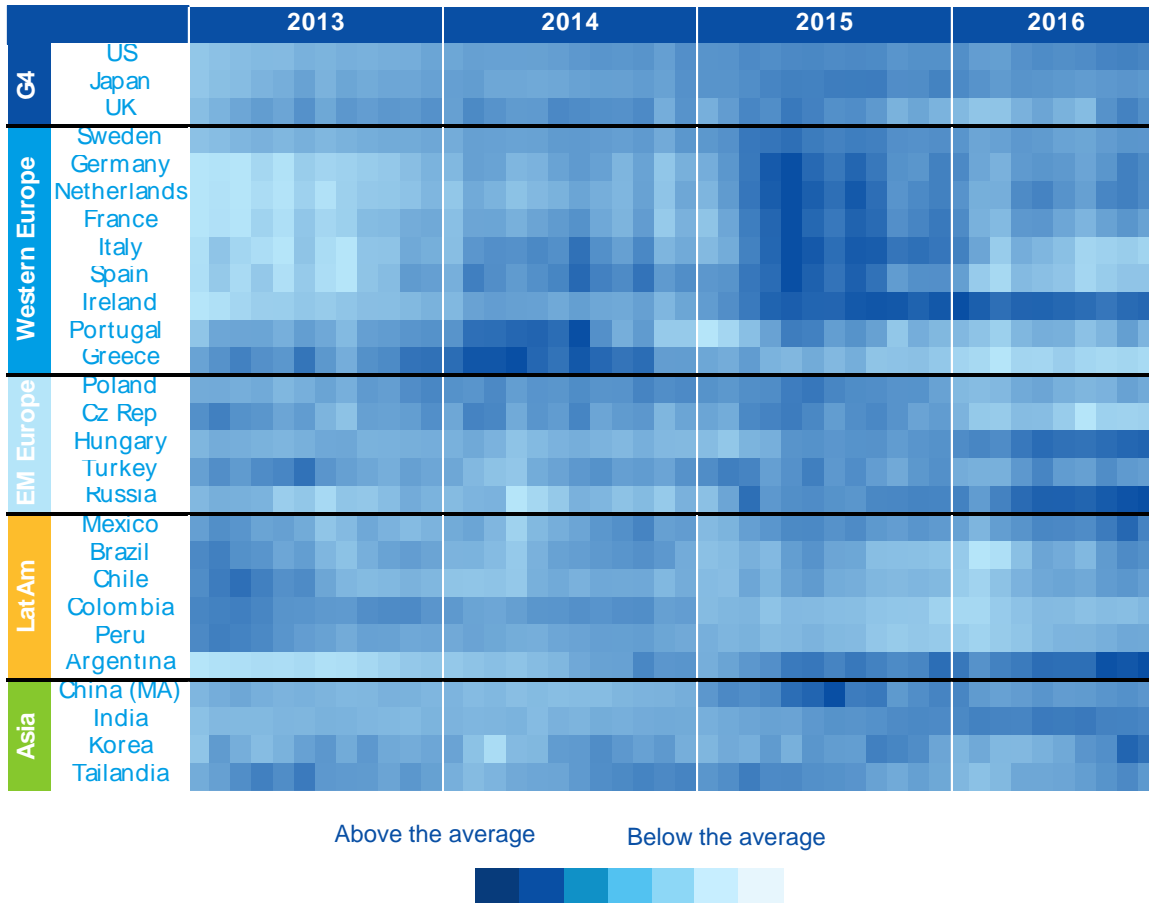
(shades are variations in previous quarter)



Equity prices: recovery built on more favourable valuations. Profits have to take up the torch

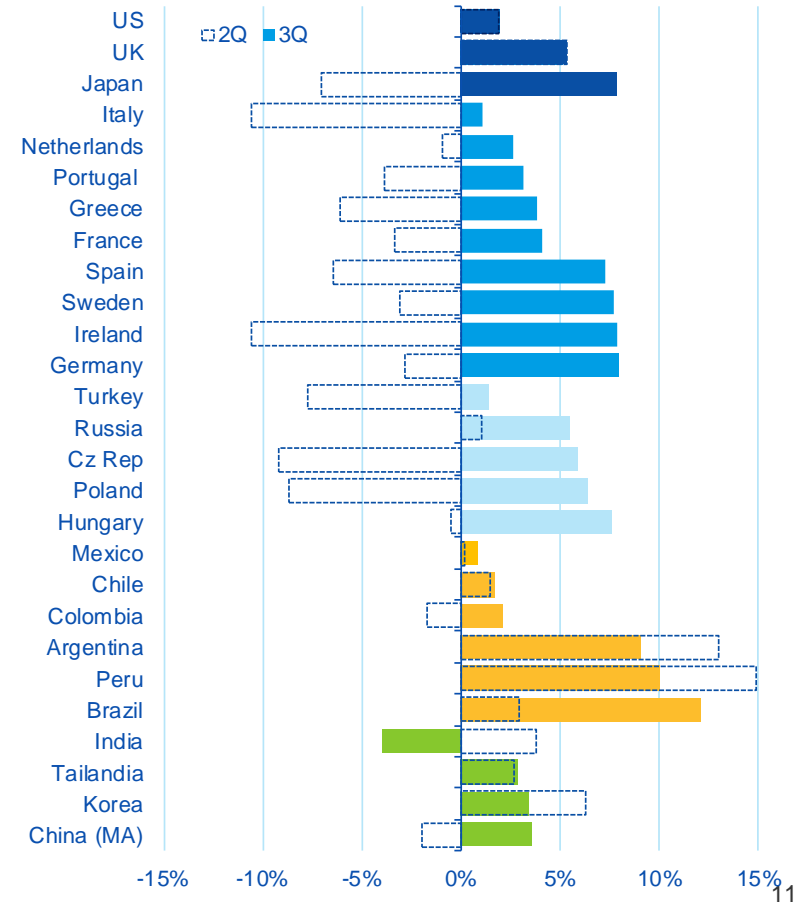
Equity prices Map

(deviation respect to 2012-16 average)



Q3 2016 Equity prices (quarterly change, %)

(shades are variations in previous quarter)





Portfolio flows

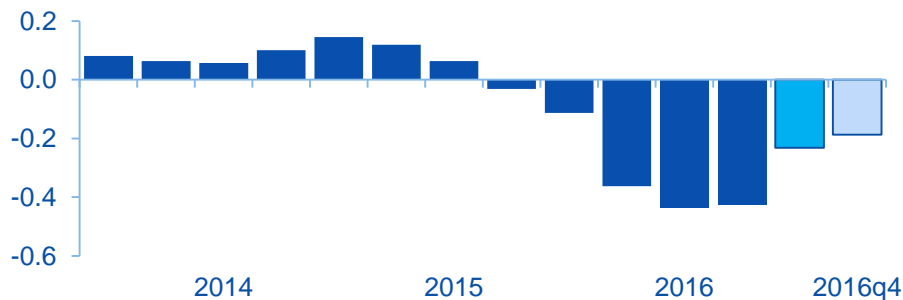
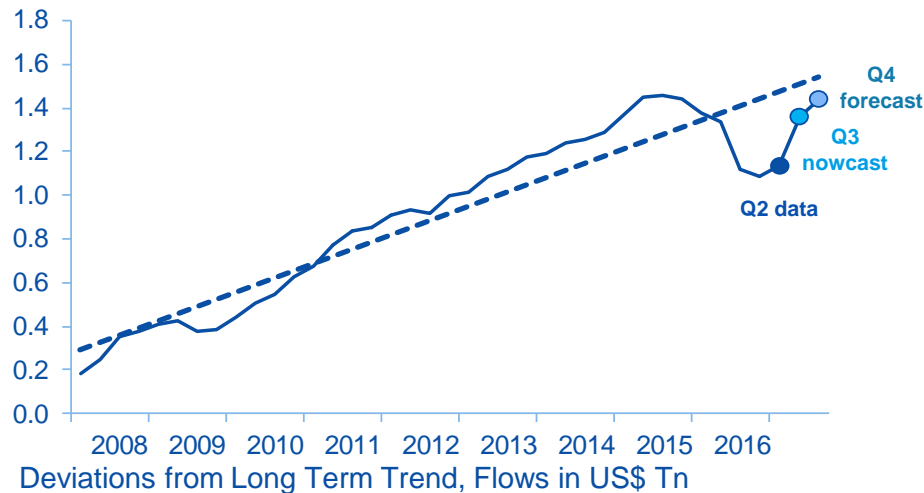
Quarterly assessment

Strong recovery of capital inflows to EM in Q3

Amidst a context of ultra low interest rates in Developed Markets (in response to the easing bias showed by Central Banks) and “search of yield” in global portfolios

Cumulated Portfolio flows to Emerging Markets using high frequency data

Flows in US\$ Tn, cumulated from January 2005



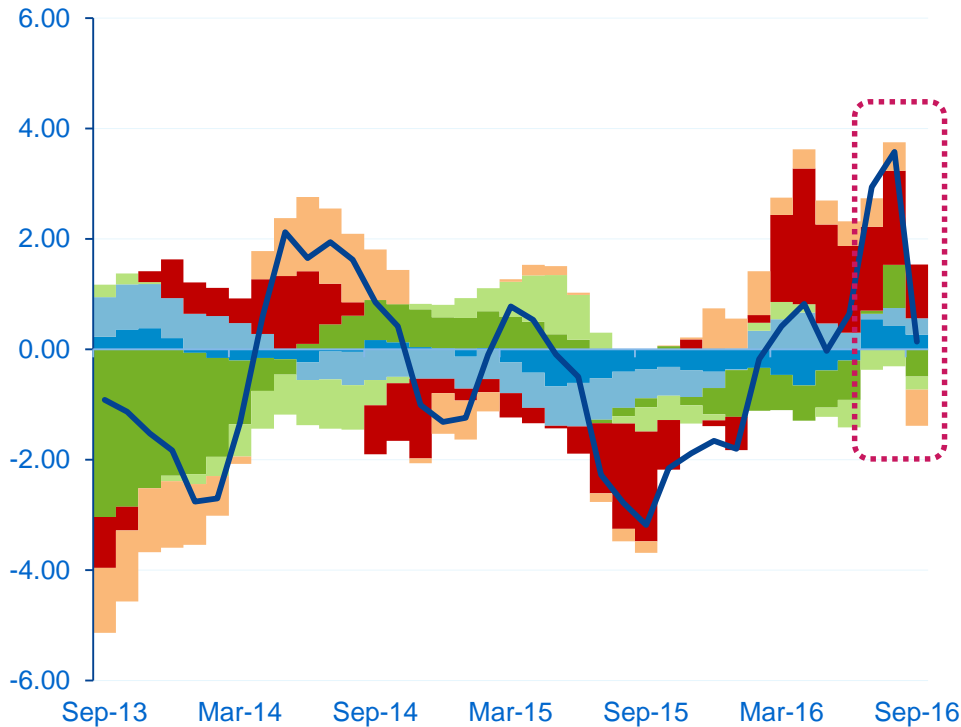
EM portfolio inflows could increase by 20% QoQ in 3Q16 for the second quarter in a row (+4.5% QoQ in 2Q), moderating the underweight accumulated since mid-15 in global portfolios

Although the mood in financial markets remains supportive for EM (easing Central Banks), we expect a **slowdown of inflows to the region in next quarters** (+6.0% QoQ in 4Q, leaving the full of year at +10% respect to 2015)

See details in Scenarios Section

Low global risk aversion spurred the demand of EM assets. The cyclical stabilization also helped

BBVA Global Factor of EM Portfolio Flows: breakdown by components (% AUM)

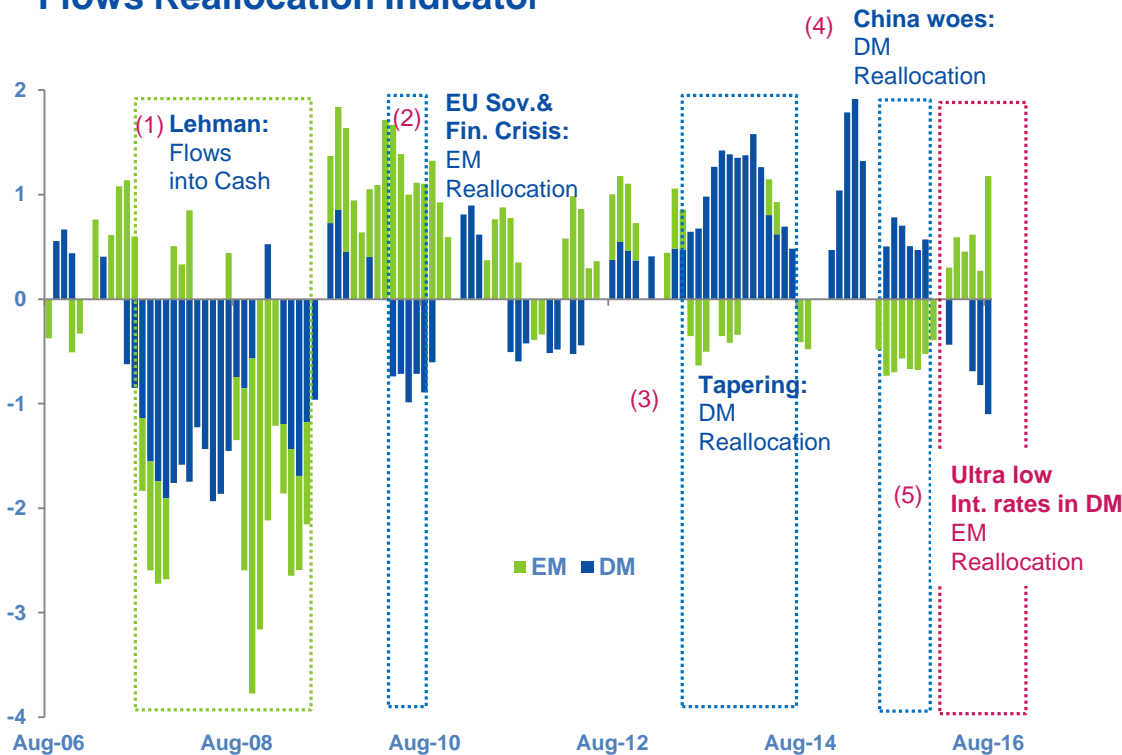


Factors in Q3 2016

- **Global Risk Aversion (VIX).** Recess of global risk aversion - after the transitory rebound generated by Brexit outcome- amidst easing monetary conditions
- **Risk perception in EM (EMBI spread).** Moderation of EM risk premia by carry-over effects coming from low interest rates in DM
- **US Interest rates (10Y).** Reduction in response to i) a dovish Fed in its normalization path for the medium-term and ii) the preference of investors by long-term debt
- **EZ Interest rates (10Y).** Similar pattern than US interest rates. Stabilization of peripheral risk premia and Bund close to 0%
- **Activity in DM.** Mild recovery. Stabilization although at low levels. US disappointing data in 1S16
- **Activity in EM.** Lower rates of correction in activity data in key economies as Brazil or Russia

Our Reallocation Tracker confirms the shift of demand towards EM driven by “search of yield”

BBVA Developed vs. Emerging Market Portfolio Flows Reallocation Indicator*



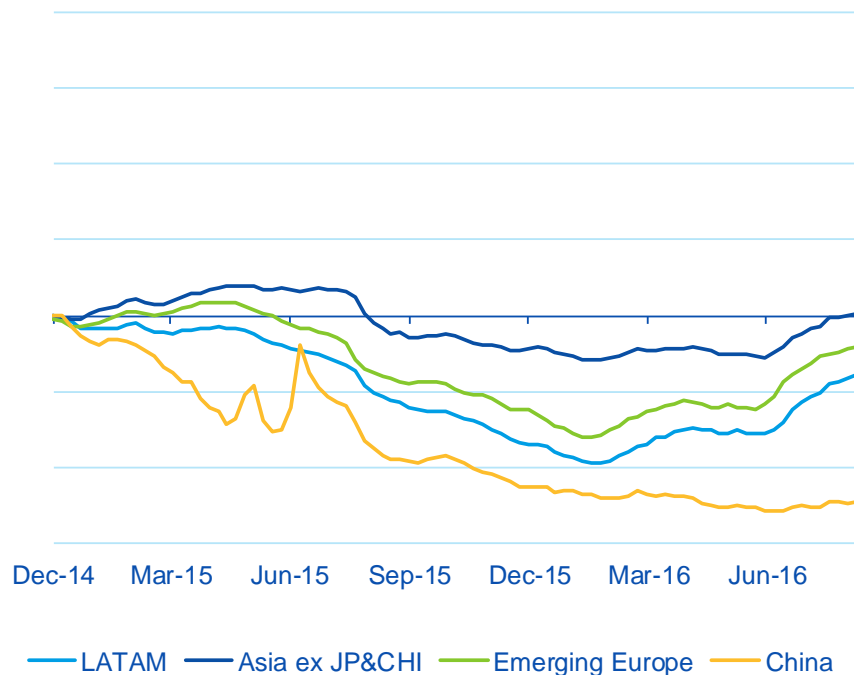
Events of Reallocation

- 1) Lehman crisis: NO reallocation; flows contract yet unevenly penalized in DM and EM
- 2) Reallocation from DM into EM amid the European Sovereign-Financial Crisis
- 3) Reallocation from EM into DM amid the Fed Policy Normalization Communication (Tantrum)
- 4) Reallocation from EM into DM on EM Woes (China’s crisis and Oil Prices Slump)
- 5) Reallocation from DM into EM due to ultra low interest rates in DM (“search of yield process”)

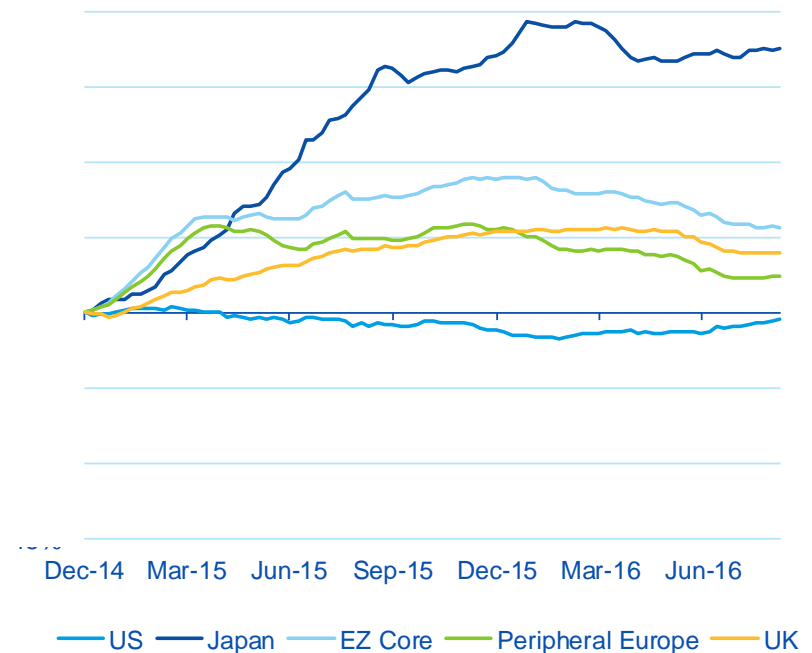
(*) Bars represent 1s-significant events where the regional DM and EM factor contributed to Developed Markets and Emerging Market Flows. Sign of the contribution is given by the direction of the bars, Values are normalized. Reallocation events are there where DM/EM factor contributions have opposite signs (events: 2, 3, 4 and 5)

All EM regions but China received a breath of fresh air. In DM, EZ & UK underperformance showed up

Cumulated portfolio flows to EM since Jan-15
(flows as % AUM)



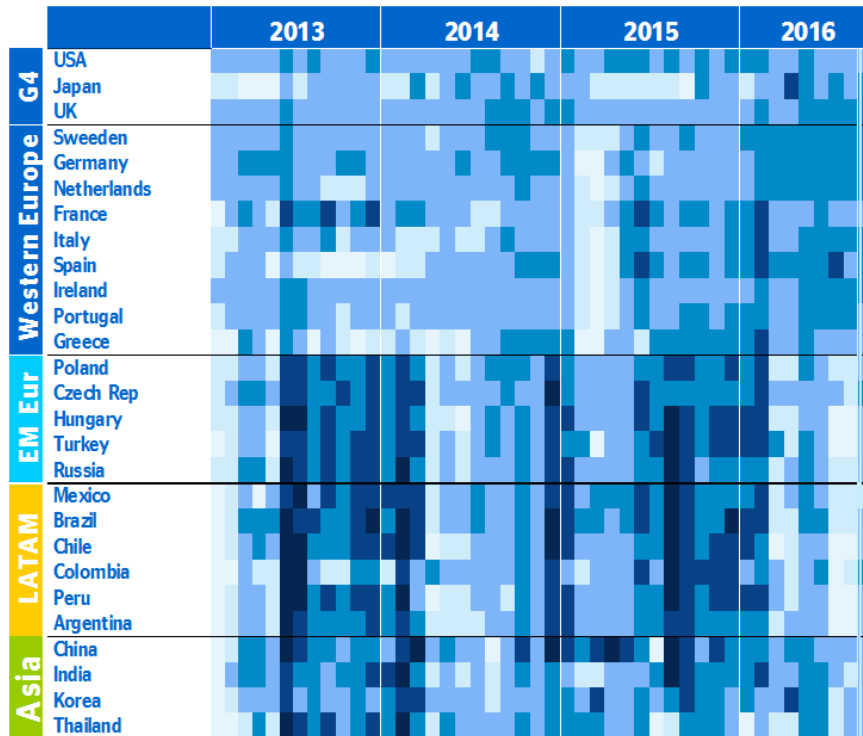
Cumulated portfolio flows to DM since Jan-15
(flows as % AUM)



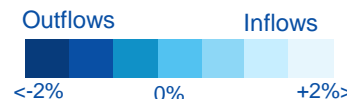
The partial dilution of idiosyncratic risks in some major EM also supported portfolio entries

Portfolio Flows Map by country

(% monthly change in net liabilities measured as % AUM)

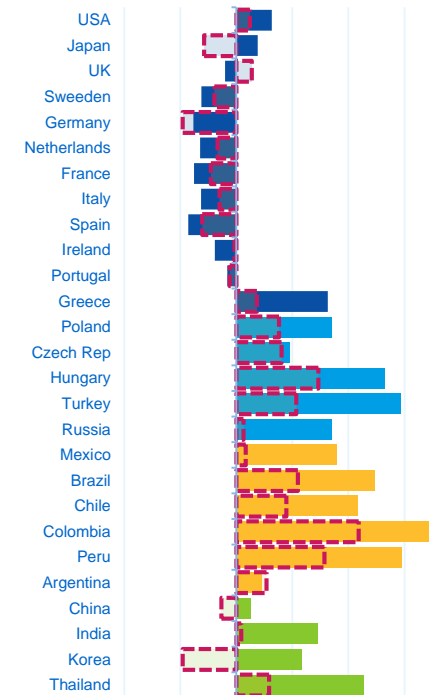


- The demand for “safe-haven” bonds (reinforced by a dovish Fed) kept flows to US bonds
- Equity underperformance (Brexit outcome & downside pressures on banks) ballasted flows to Europe
- EM Europe benefited from the recovery flows towards Russia and Turkey
- Fed’s stance, oil prices stabilization and cumulative correction since mid-15 promoted flows to LatAm
- China’s underperformance on the spotlight



3Q16 vs. 2Q16 by country

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



BBVA Research Portfolio Flows Map*

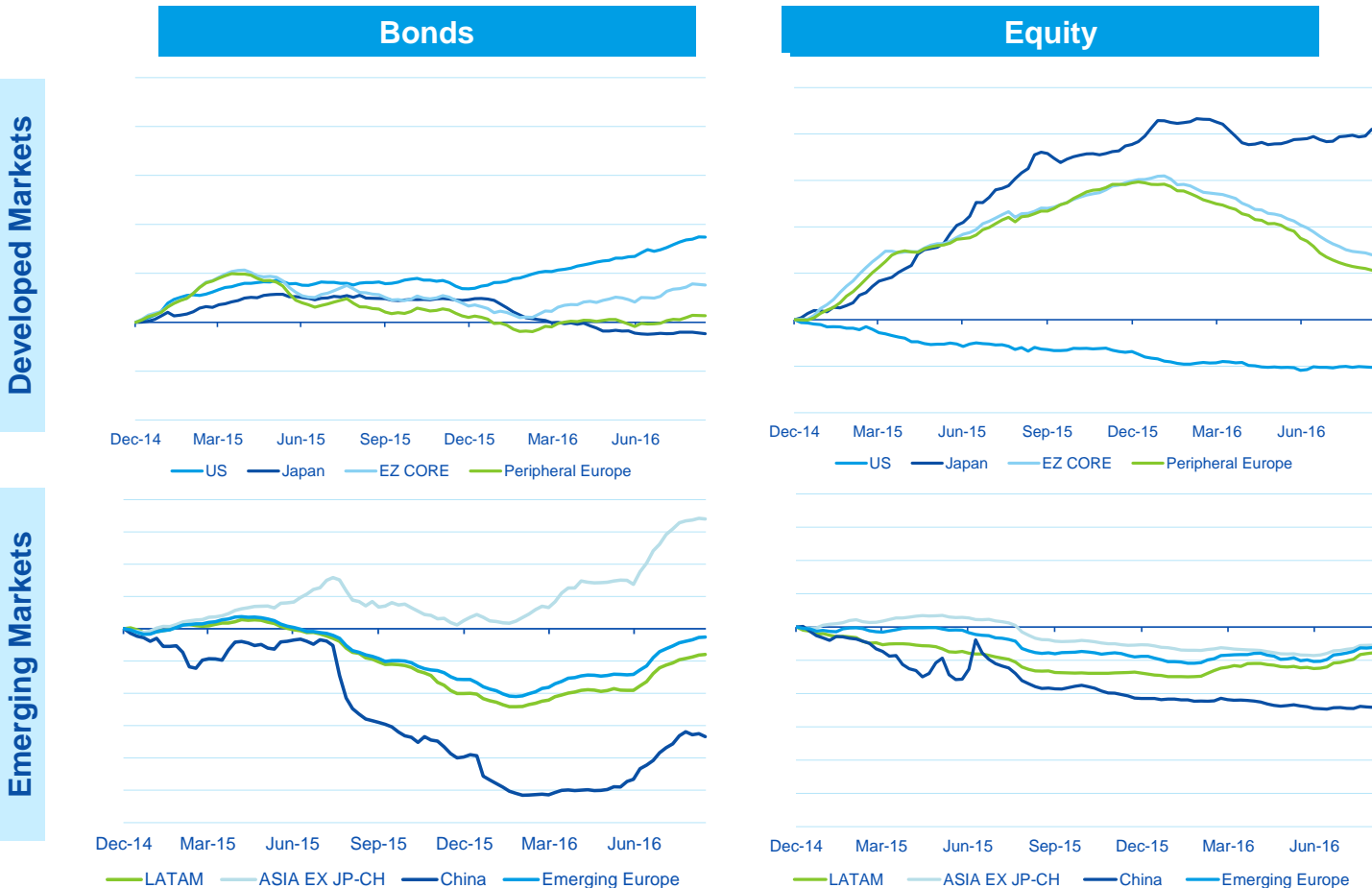
The Flows Map show the monthly evolution of net inflows with darker blue colors representing sharp net outflows and lighter colors standing for net Inflows

Source: BBVA Research

The preference for bonds continued led by EM and US. Equity funds ballasted flows to DM

Although the appetite for EM remained concentrated in bonds as in Q2, the ongoing shift of funds to equity gave also support to the whole regional flows. The opposite took place in DM

Cumulated portfolio flows by region since Jan-15 (flows as % of AUM)

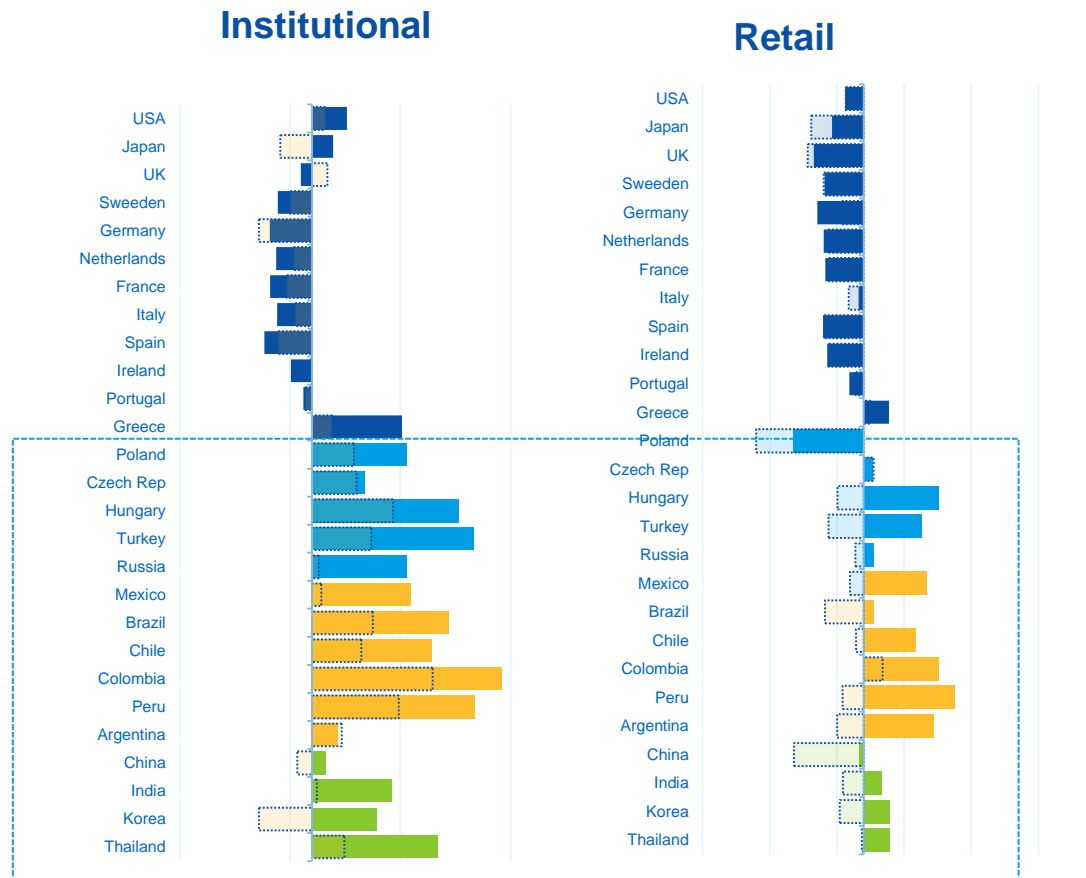


Retail investors added to institutional investors in the recovery of EM

Against the increase observed in 2Q, where entries of capital to EM were led by the institutional sector, retail investors also played a key role explaining the size of the entries in 3Q

Portfolio flows Q316 by type of investor

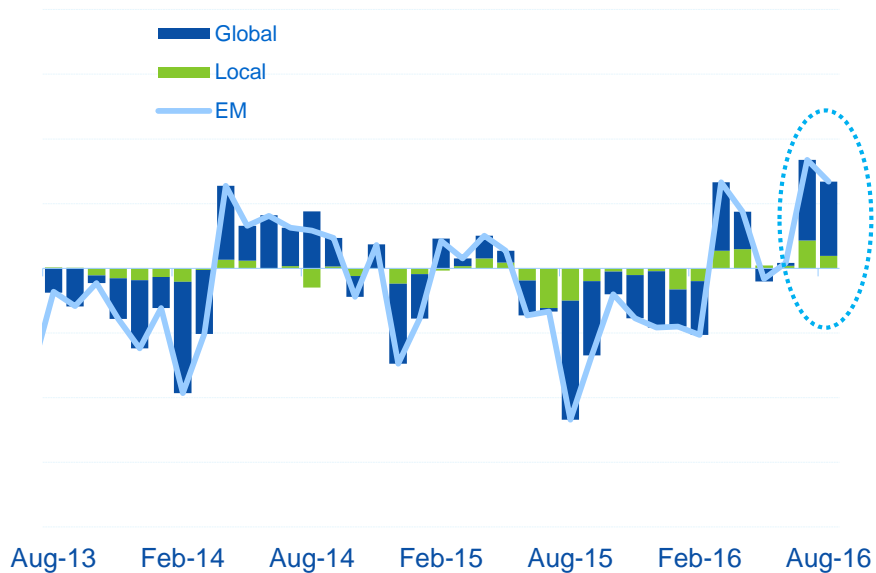
(% quarterly change in net flows, shades are previous quarterly values)



Dominance of global forces behind the appetite for EM assets

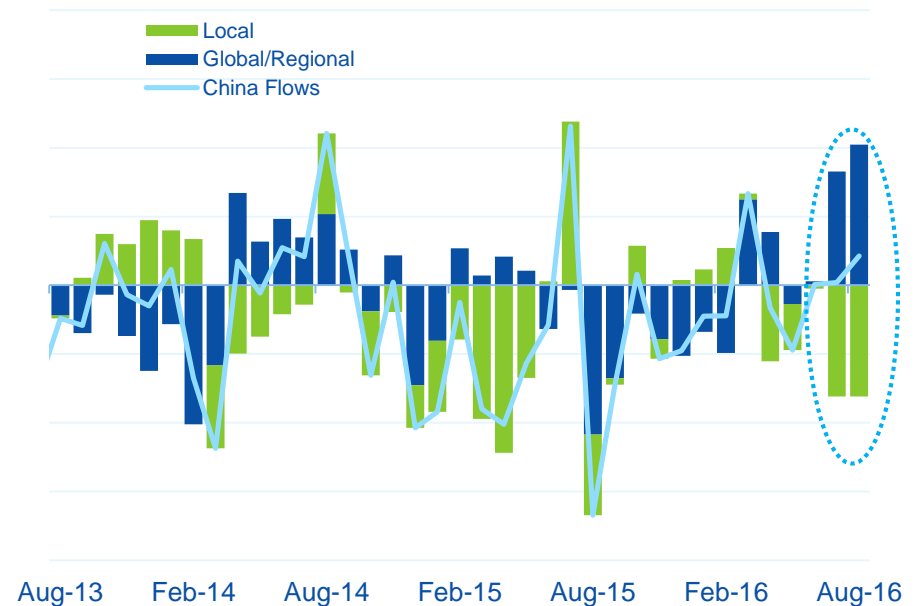
Portfolio flows to EM

(Median EM Portfolio Flow Decomposition, monthly change in %)



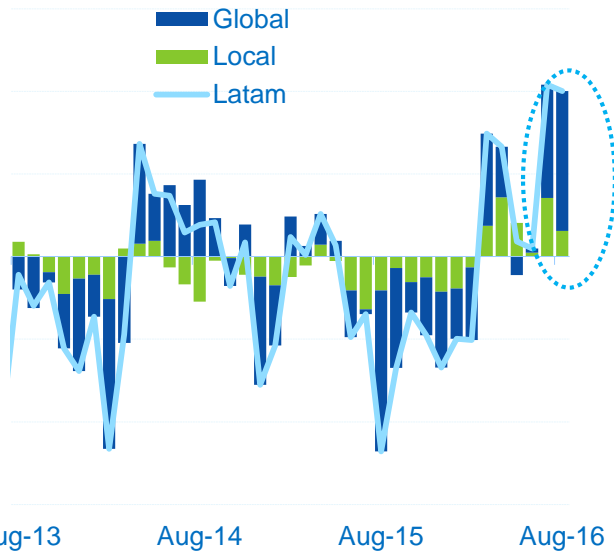
Portfolio Flows to China

(Decomposition, monthly change in %)

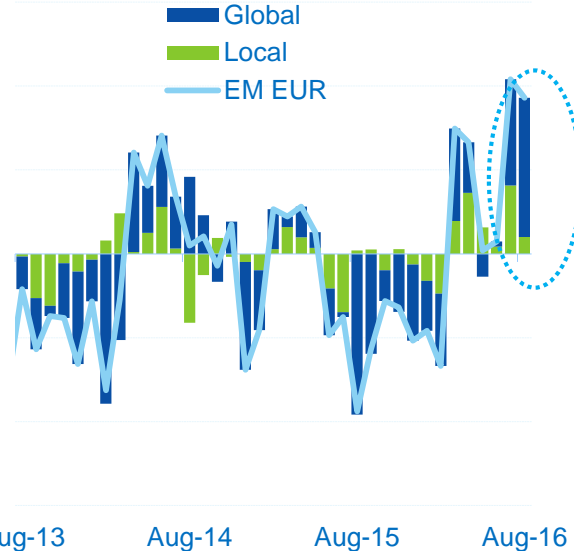


The support offered by local factors justified the better relative performance of LatAm & Europe

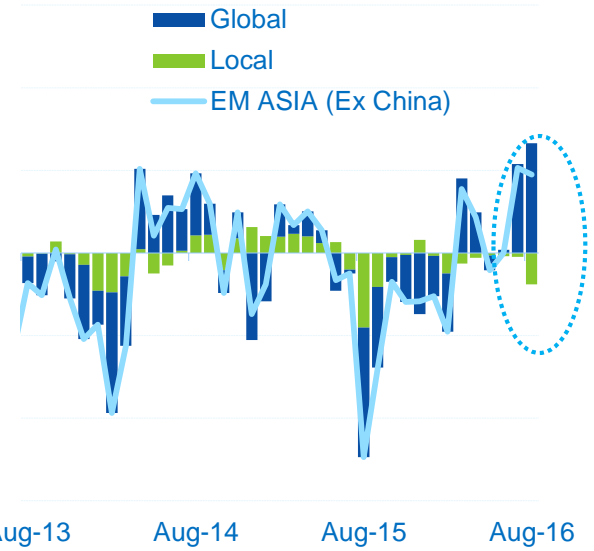
Portfolio flows to LatAm
(Decomposition, monthly change in %)



Portfolio flows to Emerging Europe
(Decomposition, monthly change in %)



Portfolio flows to Asia (ex China)
(Decomposition, monthly change in %)



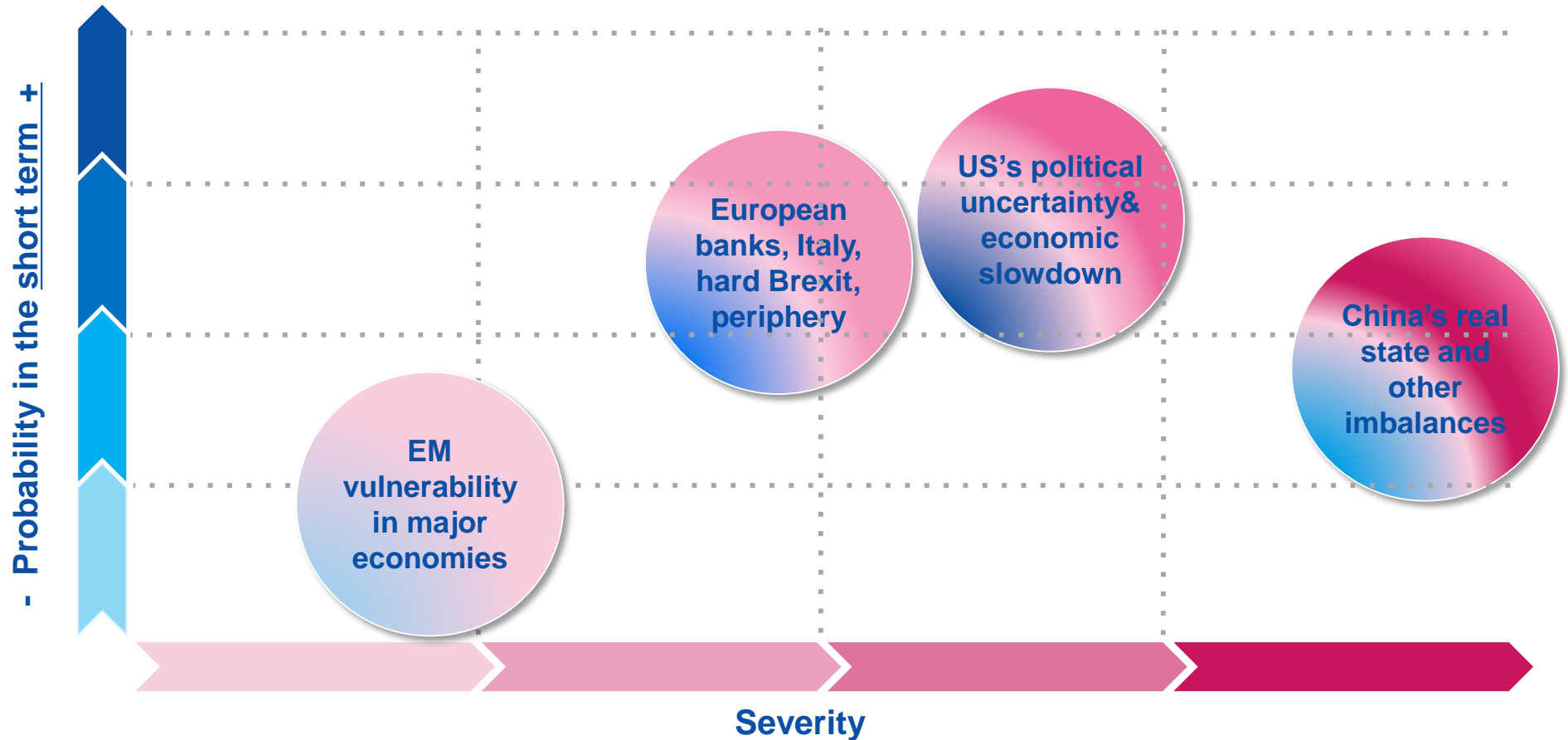


Scenarios for EM flows

Simulation analysis

Mapping the global risks

Significant and bias to the downside. Economic slowdown in the US on the eve of elections has risen
China's financial crisis remains in the limelight



Scenarios for EM flows

Short-lived financial volatility rebound and China's financial crisis as risk scenarios

Baseline Scenario

Financial shock (volatility rebound)

China's financial crisis

Global growth

Gradual subpar recovery: low growth in DM (lower than in 2015) and stabilization of EM

Global growth impaired as a result of higher financial risk aversion

Global meltdown, more intense in EM (countries with close links with China, commodities exporters)

Global monetary policy

Long-term rates rising gradually but anchored at low levels thanks to supportive CB (Fed's gradualism & ECB extending QE)

Reinforced easing in DM EM constrained by weakening activity and tightening funding conditions

Reinforced easing in DM and flight to quality anchor long rates at minimum levels. In EM, tightened funding conditions

Global financial volatility

Resilient at the current levels as EM risk premia

Heightened risk aversion globally and, in particular, in EM

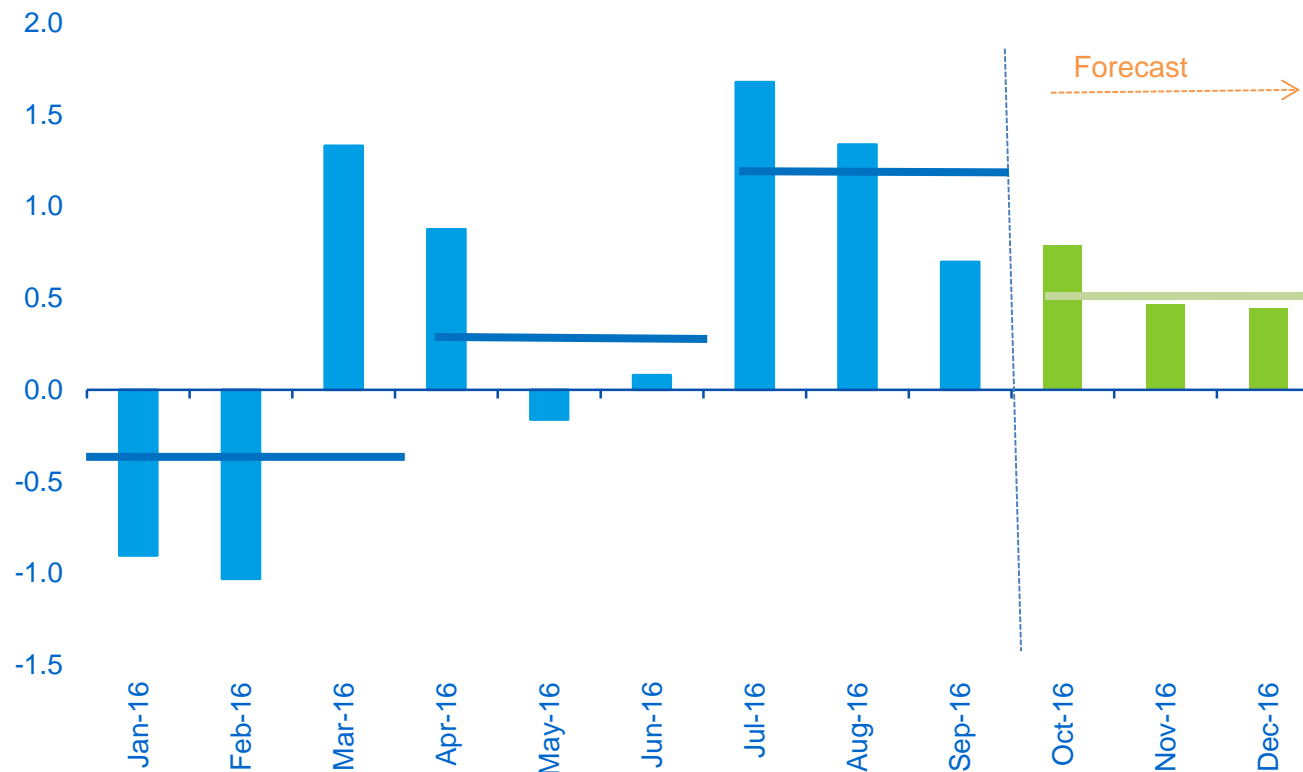
Despite monetary policy support in DM, risk premia surges to stress levels

Baseline Scenario. 2016 detail

Upward revision of capital flows to EM forecasted for Sep-Dec16 explained by i) better than expected data in July and Aug and ii) the downside update in long-term interest rates

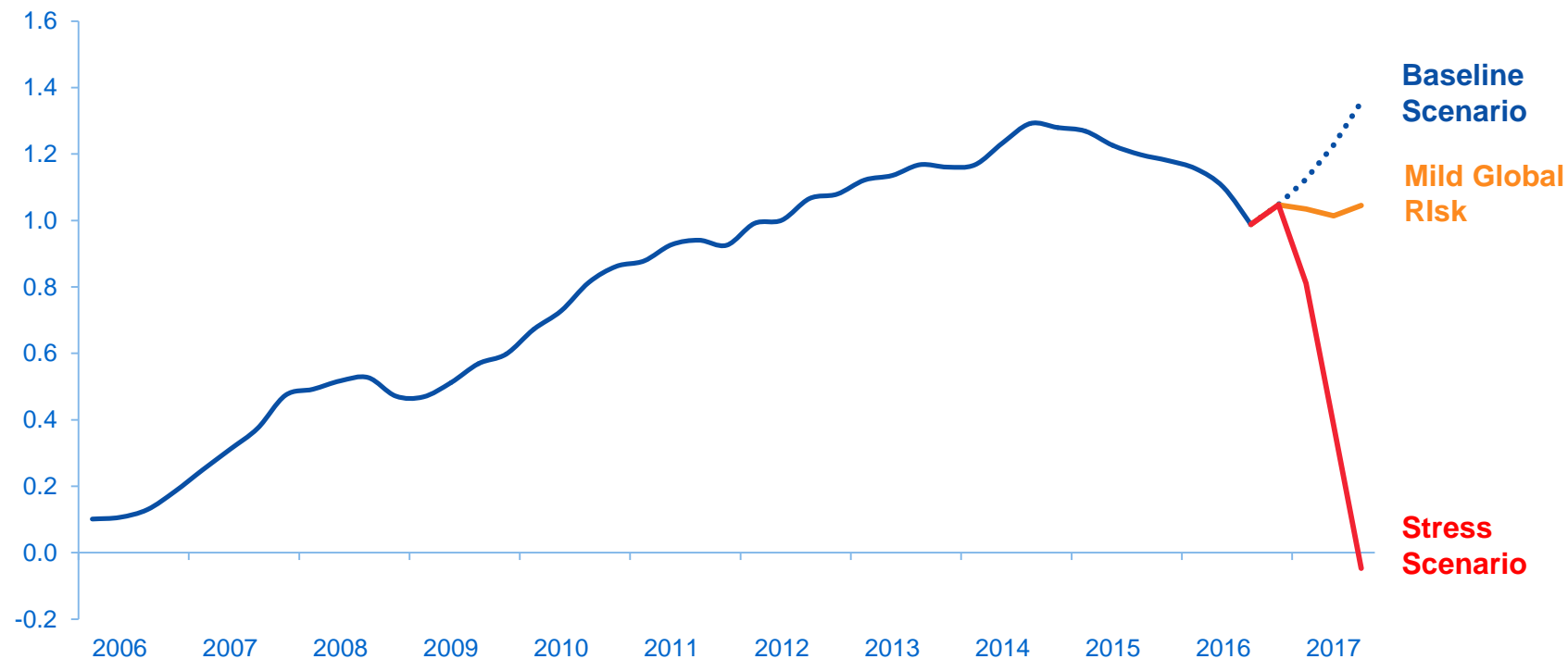
Portfolio Flows to EM: Baseline Scenario

Monthly Change in % of Total Assets Under Management



Summary of scenarios

Portfolio capital flows to EM: Scenarios (one year ahead)
 (Baseline and risk scenarios). Cumulative from 2005. US \$Tn (Median EM)
 Forecast as of September 2016

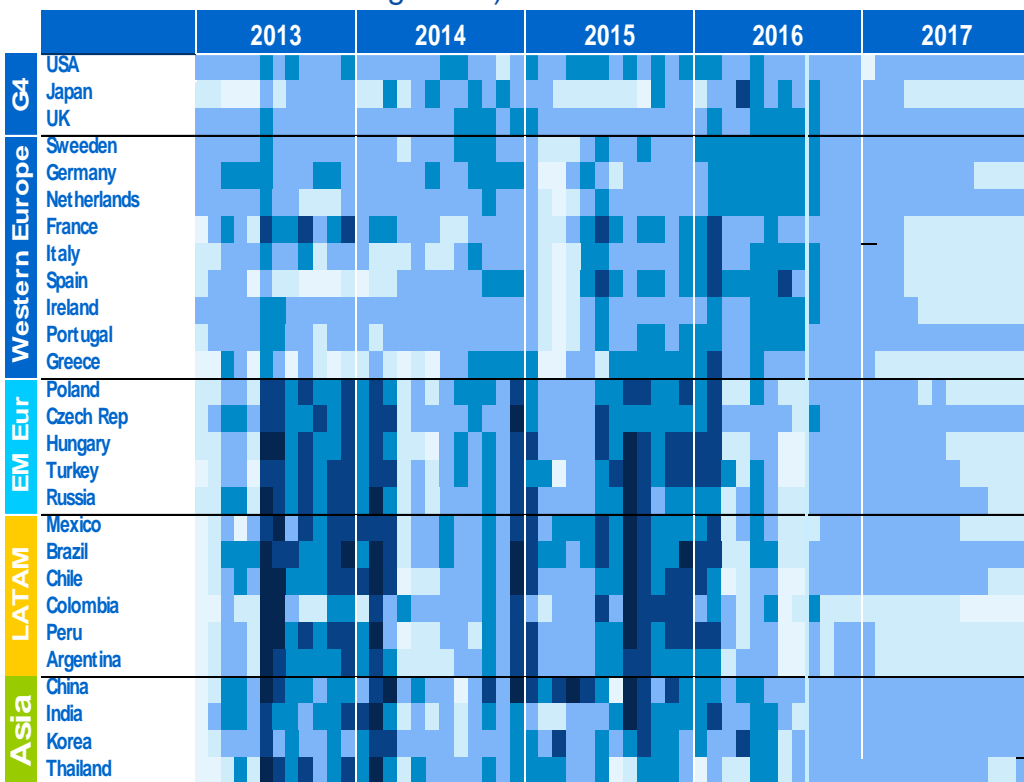


Baseline Scenario: detail by countries

Monetary conditions will remain supportive for EM but capital inflows to the region could lose steam: inflows to bonds have started to slow down and equity funds need the support of profits to gain ground

BBVA Baseline Scenario of Portfolio Flows

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



Source: BBVA Research –FAVAR Model

Baseline Scenario

Economic and financial assumptions

Global growth

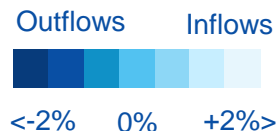
+3.1 pp in 2016-17 avg.
+1.6 pp DM
+4.2 pp EM

Global monetary policy

1.65 & 1.92% 10y T-note in 2016 & 2017 EoP
0.00 & 0.50% 10y Bund in 2016 & 2017 EoP

Global financial volatility

VIX increases gradually to levels of 18 points 2017 EoP



BBVA Research Portfolio Flows Map*

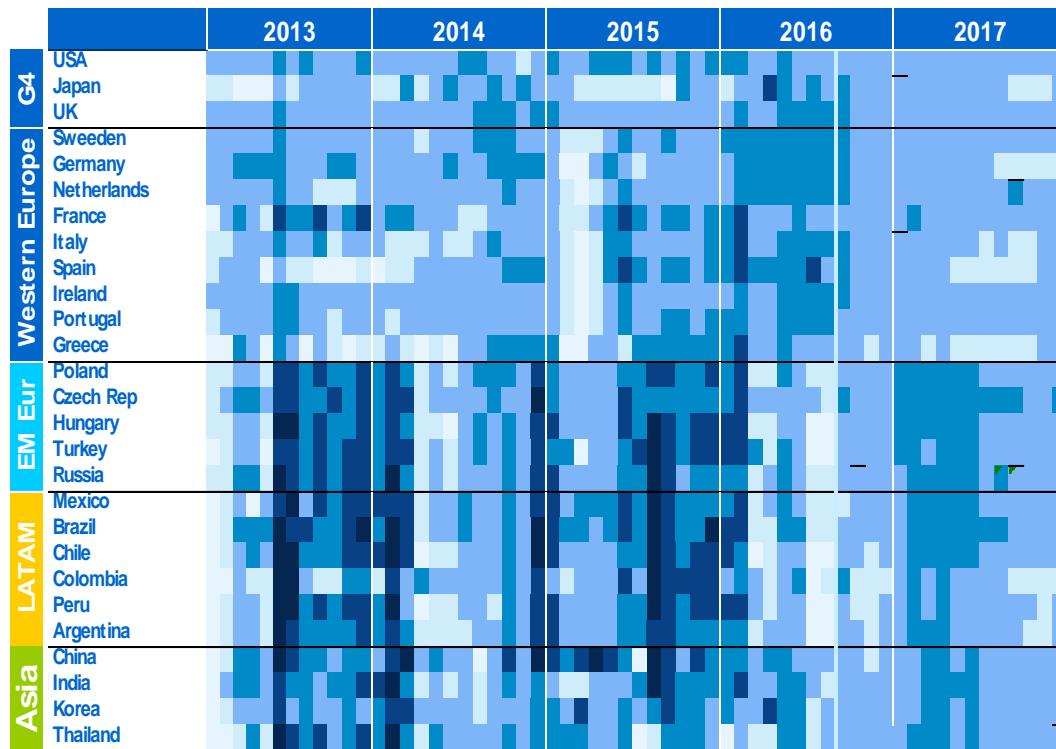
The Flows Map show the monthly evolution of net inflows with darker blue colors representing sharp net outflows and lighter colors standing for net Inflows

Mild Risk Scenario: detail by countries

A relatively deep but short-lived financial “slippage”. Inflows to EM suffer the impact of higher global volatility, only partially offset by accommodative monetary policies in DM

BBVA Mild Risk Scenario of Portfolio Flows

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



Source: BBVA Research –FAVAR Model

Mild Risk Scenario: Financial shock Economic and financial assumptions

Global growth (differences respect to Baseline)

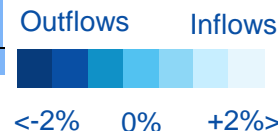
-0.5 pp in DM 2016-17 avg.
-0.6 pp in EM 2016-17 avg.

Global monetary policy

No changes respect to Baseline Scenario
Higher risk premia offset by Central Banks easing bias

Global financial volatility

VIX to reach 21 points 2016 EoP and 24 points in 2017



BBVA Research Portfolio Flows Map*

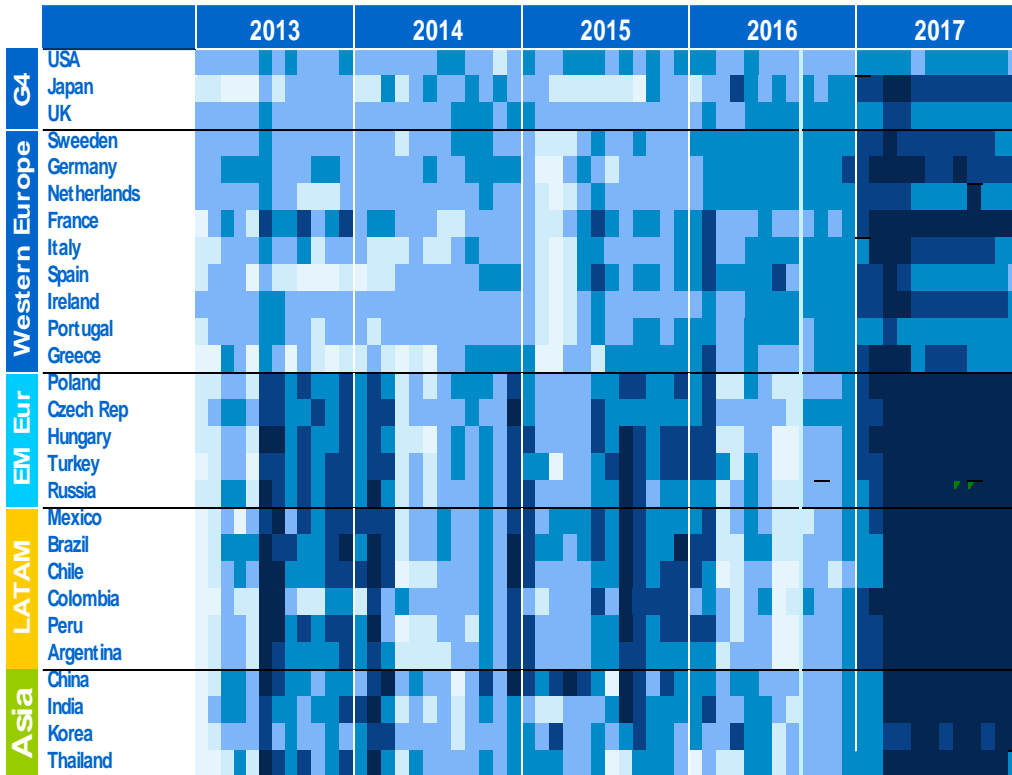
The Flows Map show the monthly evolution of net inflows with darker blue colors representing sharp net outflows and lighter colors standing for net Inflows

Stress Scenario: detail by countries

Global portfolio retrenchment in 2017 with severe impact on EM
 Unwinding positions cashed into deposits: low reallocation towards DM assets

BBVA Extreme Global Risk & Portfolio Flows

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



Source: BBVA Research –FAVAR Model

Stress Scenario: China's financial crisis

Economic and financial assumptions

Global growth (differences respect to Baseline)

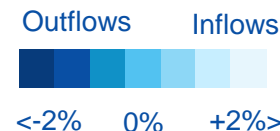
-2.0 pp in DM 2016-17 avg.
 -3.5 pp in EM 2016-17 avg.

Global monetary policy

1.00 & 0.45% 10y T-note in 2016 & 2017 EoP
 -0.20 & 0.00% 10y Bund in 2016 & 2017 EoP

Global financial volatility

VIX records maximum levels of 30 points at mid 2017, slowing only gradually afterwards



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



Methodological appendix

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 (Ft) and Flows (Xt)

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

2) Transition Block allows for flows (Ft) 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)).

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

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

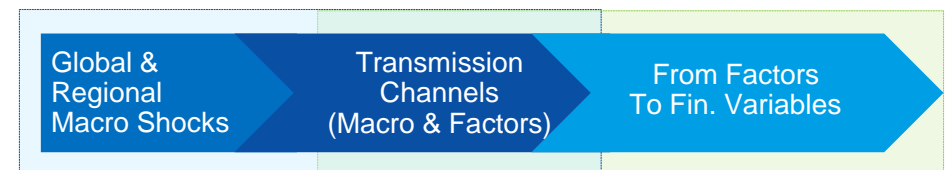
$$PF(t)_j = b_{1j} * Global(t) + b_{4i} * DME(t) + b_{5i} * SH(t) + b_i * IDIO(t) + U(t) \text{ (SH)}$$

(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.

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

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Portfolio flows & Assets Report

Flows to EM will continue to grow but at a lower pace

Third Quarter 2016

BBVA Research

Sara Baliña, Joaquin Iglesias Turina,
Juan Navarro & Cristina Varela