BBVA | RESEARCH

Flows & Assets Report

EM flow reallocation to be short lived?

Second Quarter 2016

BBVA Research
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Summary

Main drivers

- Global risk aversion has receded in a context of high volatile markets. The return of risk appetite is attributable to signs of stabilization from China, a rebound of oil (and other commodity) prices, and continued support of developed central banks.
- All in all, the probability of tail risk scenario in the short-run has diminished

Financial Tensions

- Financial tensions have moderated in EM after the sharp rebound earlier in the year (a second stint of volatility is left behind). However, risk perception shifted, temporarily to DM, particularly to the Eurozone, with banking concerns coming to the fore
- Exchange rate dynamics have been dominated by the US dollar weakness –on hints of smoothing monetary normalization from the Fed- and the stabilization of the yuan, both favoring the appreciation of EM currencies
- On equity markets, uncertainties about the profit cycle prevent a sustainable price recovery ahead

Summary

(Review of previous quarter events & insight into 2016 on behalf of the information collected as of April 14th 2016)

Portfolio flows

- Portfolio outflows from EM decelerate in 1Q16 (to -4% QoQ vs -12% in 4T15, broadly as expected). The recent rebound of capital flows (since March), mainly driven by global factors, has been a positive surprise
- The recent dynamic was overly institutional investor geared and is being led by LatAm and bond funds. Asia and, particularly China, are underperforming
- On the flip side, Europe, especially the periphery, felt the renewed concerns on the banking sector, policies and growth. Equity have has clearly underperformed

Forecast

- Our baseline scenario is for capital flows to EM increase by 3% over the 2Q16, given the current positive inertia. However, under the baseline scenario flows are bound to turn negative in the 2H16
- Our forecasts continue to be tilted to the downside for EM capital flows and assets valuations amid the array of risk factors ahead, while the probability of very adverse scenarios has diminished

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Capital flows

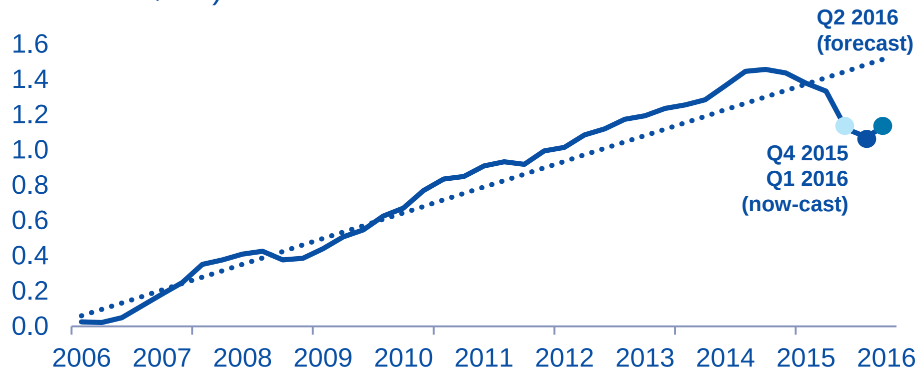
Quarterly assessment

EM flows registered a sharp turnaround amidst heightened volatility

showing high sensitivity to swift changes in global risk aversion

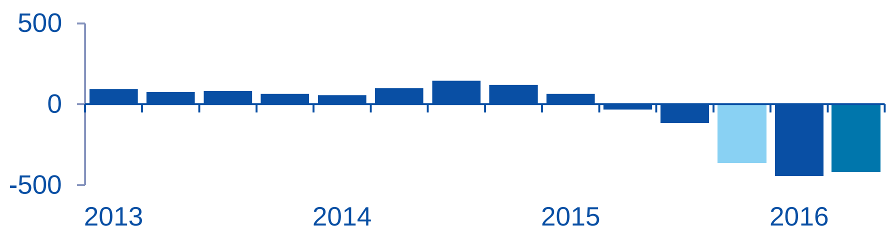
Cumulated Portfolio Flows to Emerging Markets using High Frequency Data

(Flow in US$ Tn)



High Frequency Imbalance Assessment

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



Source: BBVA Research & FMI

EM Portfolio outflows declined by -4% QoQ in 1Q16 (Vs. -12% Q/Q in Q415) broadly as expected but with an erratic dynamic (sharp decline up to February followed by a strong recovery since March)

Rebound built on better market sentiment amid commodity prices, the apparent stabilization of China and (dovish) news on global monetary policy

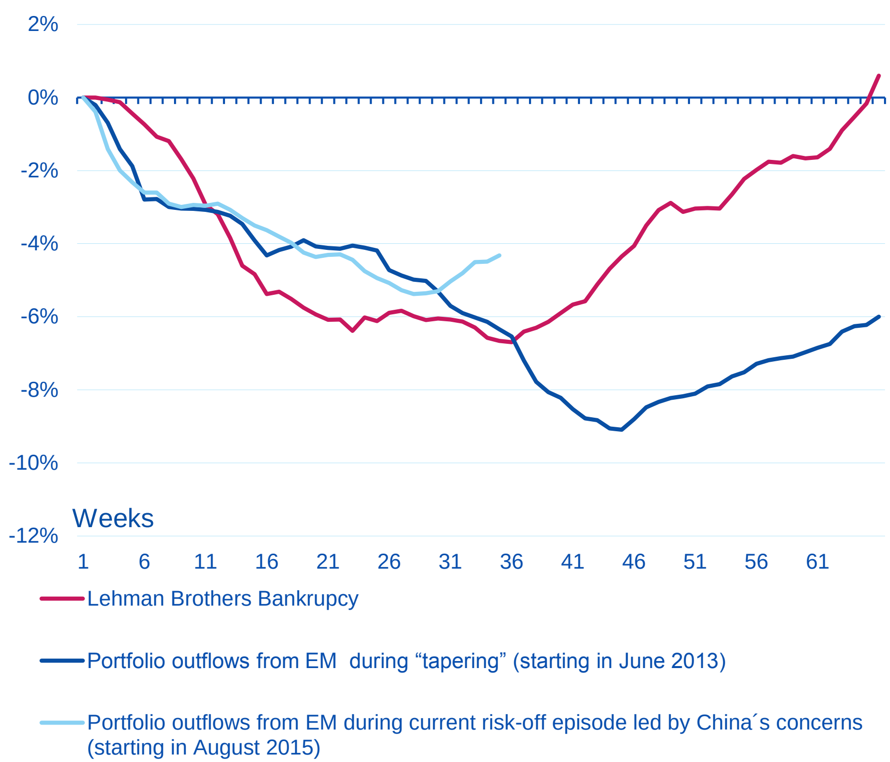
Despite inertia (we still forecast +3% in Q2-16), **the stint is bound to be eventful and short-lived** (full year forecast: -6%)

Since March dynamics have clearly changed

Flows have bottomed up everywhere
(but China)

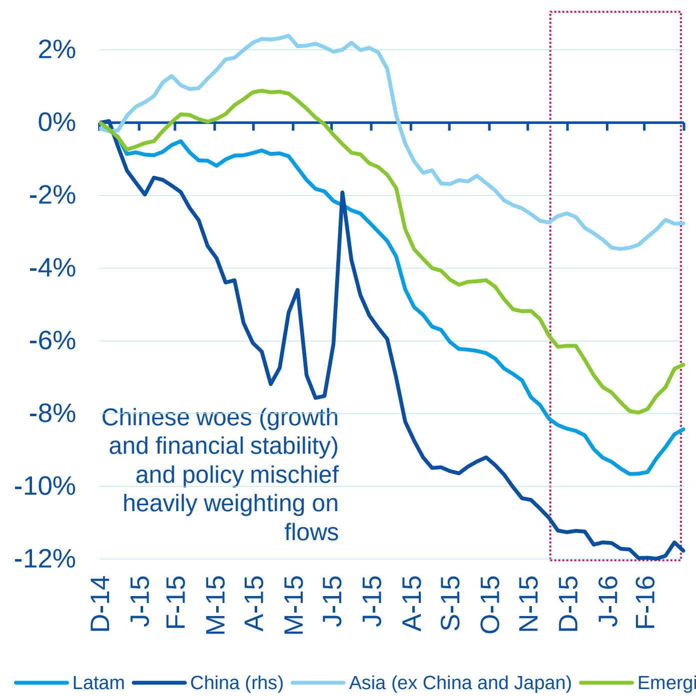
Cumulated net capital outflows from EM in risk aversion episodes

(flows as % AUM)



Cumulated net capital outflows from EM since the start of 2015

(flows as % AUM)



EM-Asia China woes weight on recovery process

EM Europe Regional supported by ECB action

LatAm was benefited by dovish Fed and rebound in commodity prices

Source: BBVA Research, IMF data

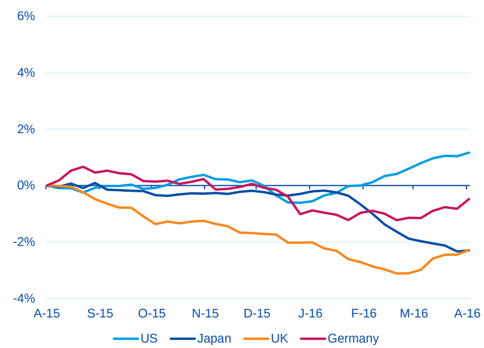
Risk Appetite specially favoring LatAm and Bonds

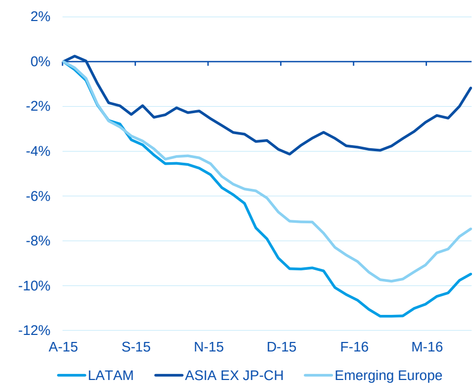
Low yields stoked portfolio shifting between Japan and the US

Capital flows by region: 4-week moving average

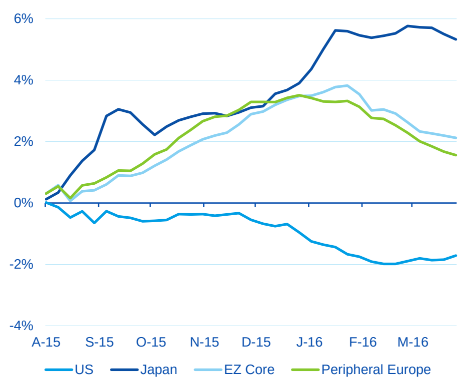
(country flows as % of AUM)

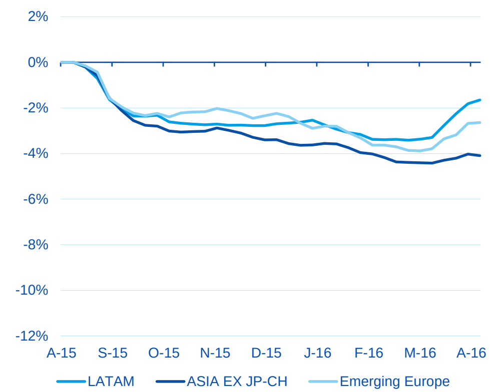
Bonds





Equity





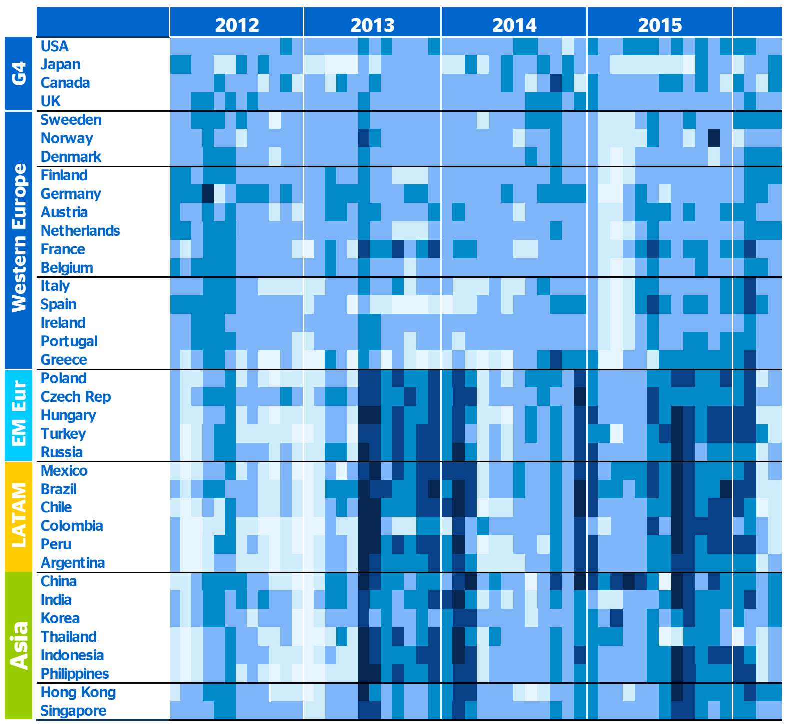
Source: BBVA Research

March rebound hallmarks a new phase of portfolio reallocation back to EMs

on the back of a renewed risk- on mood

BBVA High Frequency Portfolio Flows Map

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

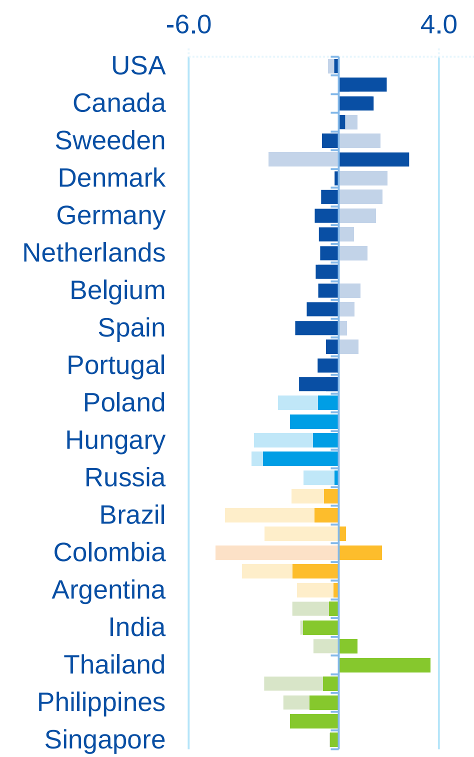


BBVA Research Portfolio Flows Map*
The Flows Map show the monthly evolution of net inflows with darker blue colors representing sharp net outflows and lighter colors standing for net Inflows

- Reversal in Portfolio Allocation favored EMs on expense of DMs
- Europe: renewed concerns on banking sector and policies, despite ECB accommodative measures
- EM Europe benefits from renews Dovish ECB stance
- Latam’s blow thanks to commodity price rebound (oil prices has increased by 40% since minimum level at mid February)
- EM-Asia; absence of news from China holds markets at ease

1Q16 vs. 4Q15

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



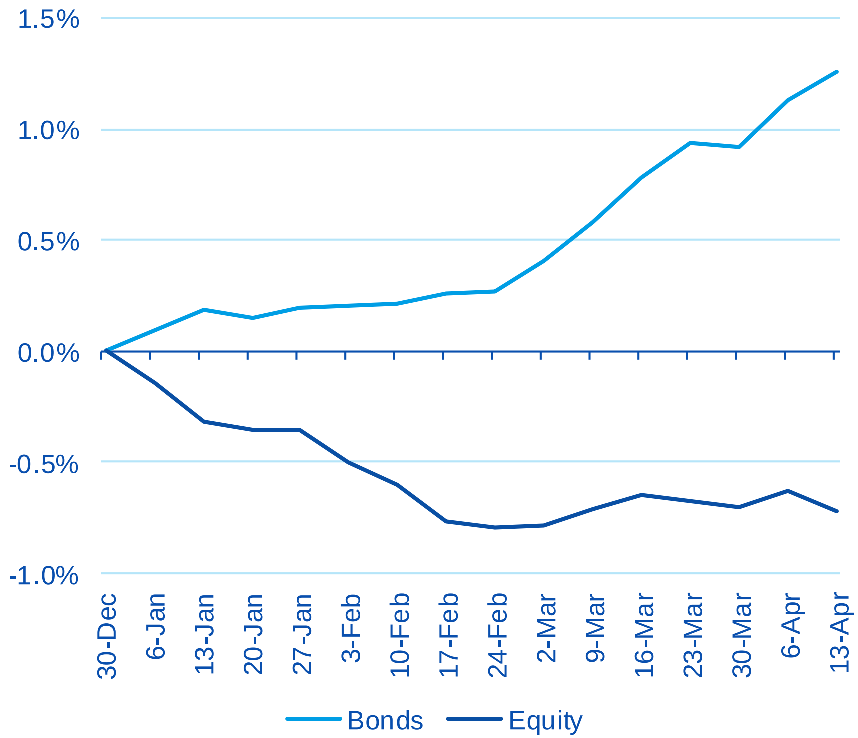
Source: BBVA Research

Institutional investors behind the stint of reallocation to EM

and inflows into non-EZ markets. Safe-haven in bonds still persists

Cumulated flows to EM and DM in 2016: bonds vs equity

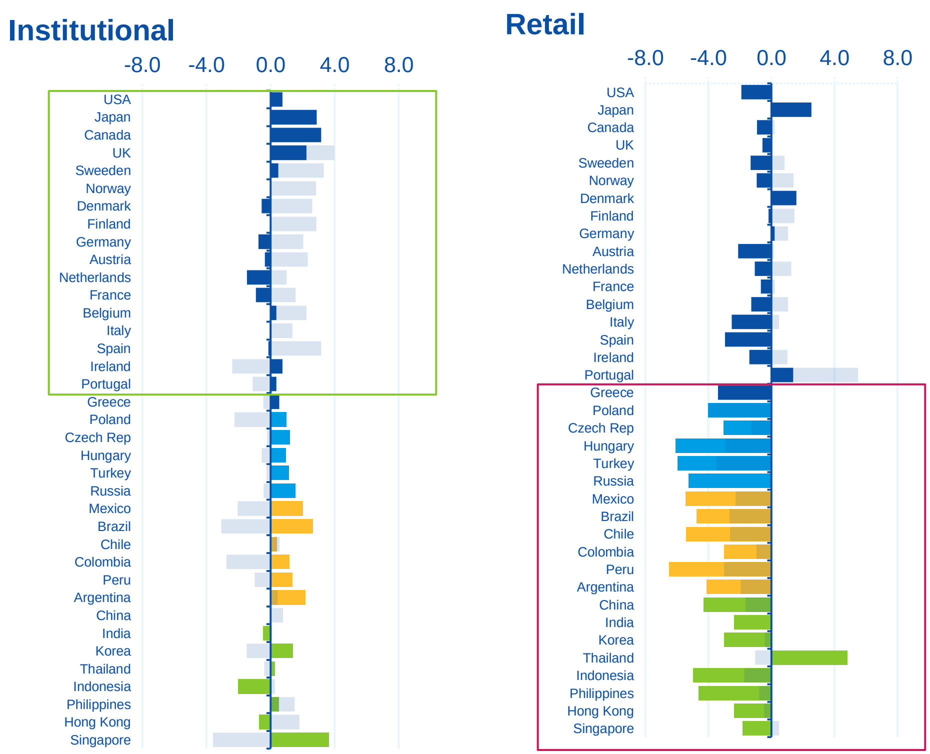
(% of Total Assets)



Source: BBVA Research

Net Flows Q1 2016 by Investor Type

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

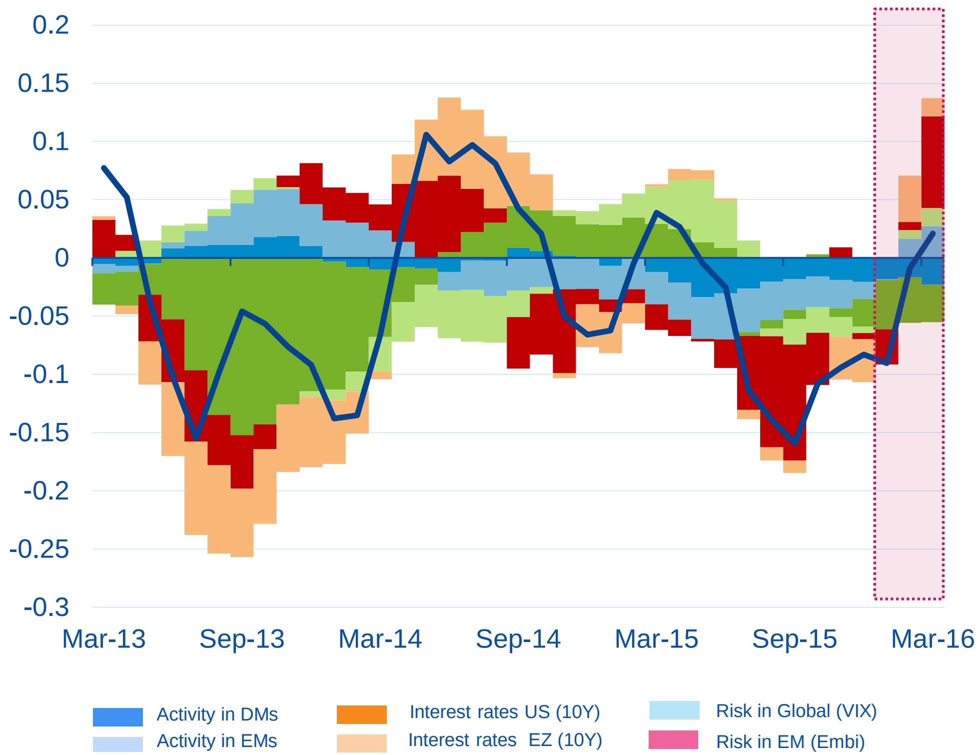


Source: BBVA Research

Global risk aversion is the main driving force of capital flows dynamics,

bringing visible contributions to EM flows across the board

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 Q1 2016

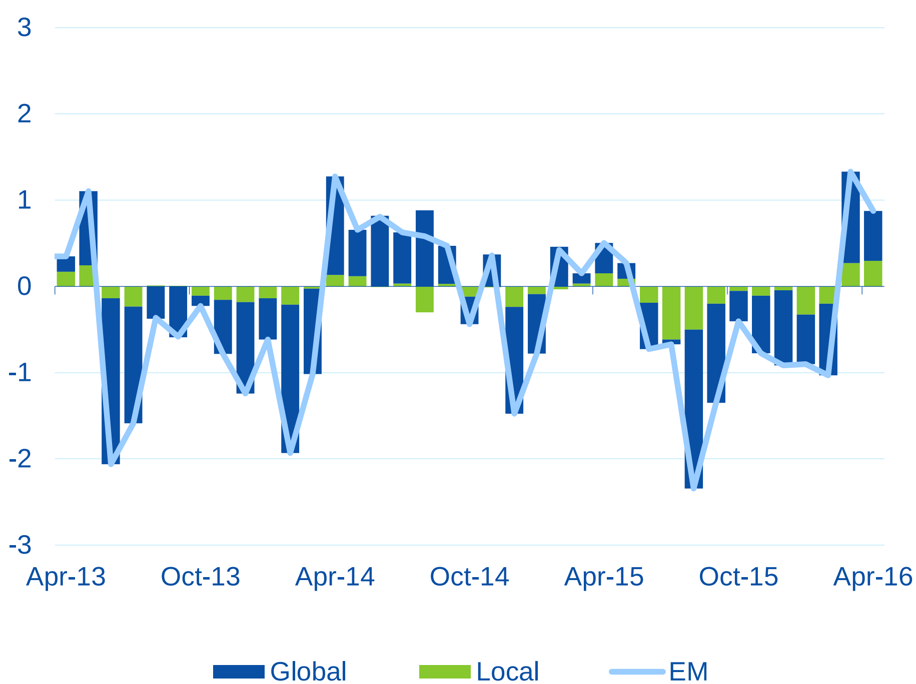
- Recess of Global risk aversion amid carry-over effects of decreased Chinese uncertainty plus a more benign commodity price outlook
- Materializing US monetary policy shift (Dec. hike) partially compensated by ECB action months thereafter
- Worryingly worsening of EM growth and disappointing growth readings among DMs

Source: BBVA Research

Local factors also played some role in EM but China…

Emerging Markets Flows

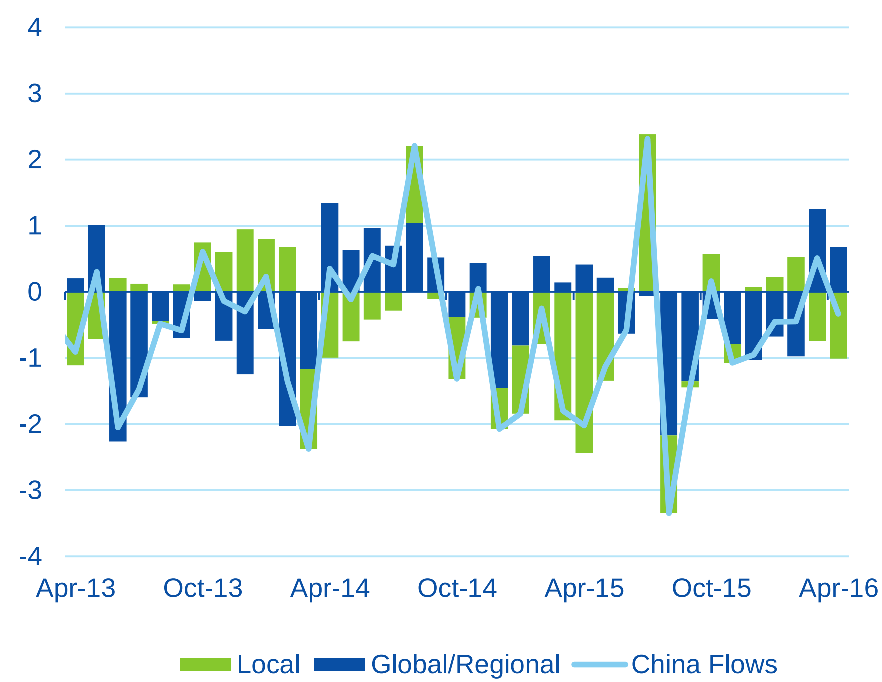
(Median Emerging Market Portfolio Flow Decomposition, monthly change in %)



Source: BBVA Research

China Portfolio Flows

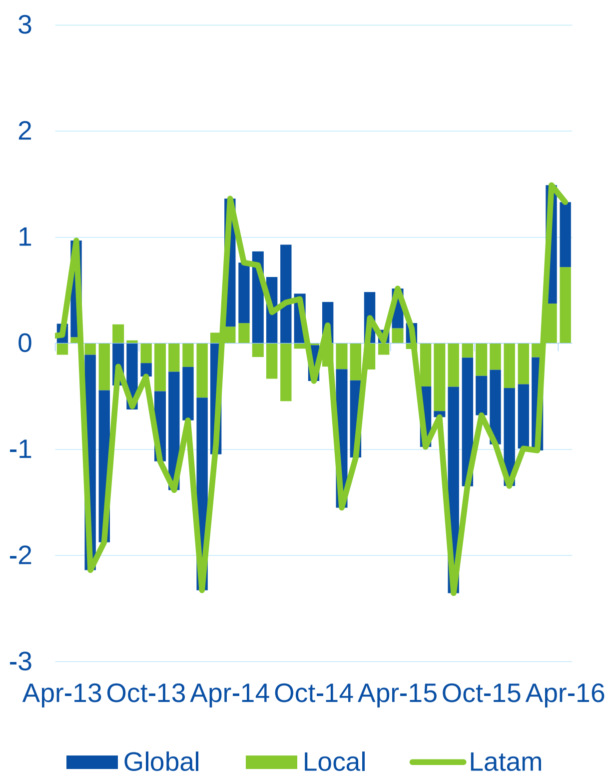
(Decomposition, monthly change in %)



Source: BBVA Research

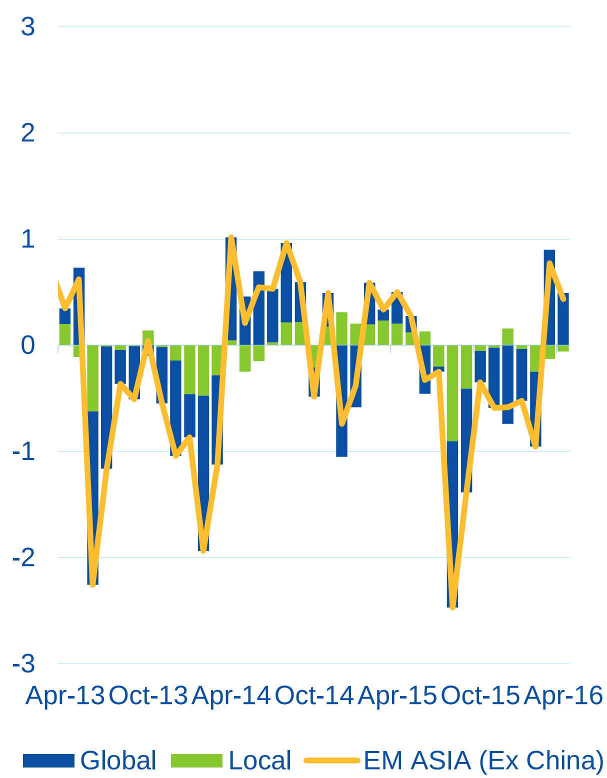
…and Asia, where local and regional factor contributions remain negative

Latin America Flows
(Decomposition, monthly change in %)



Emerging Europe Flows
(Decomposition, monthly change in %)

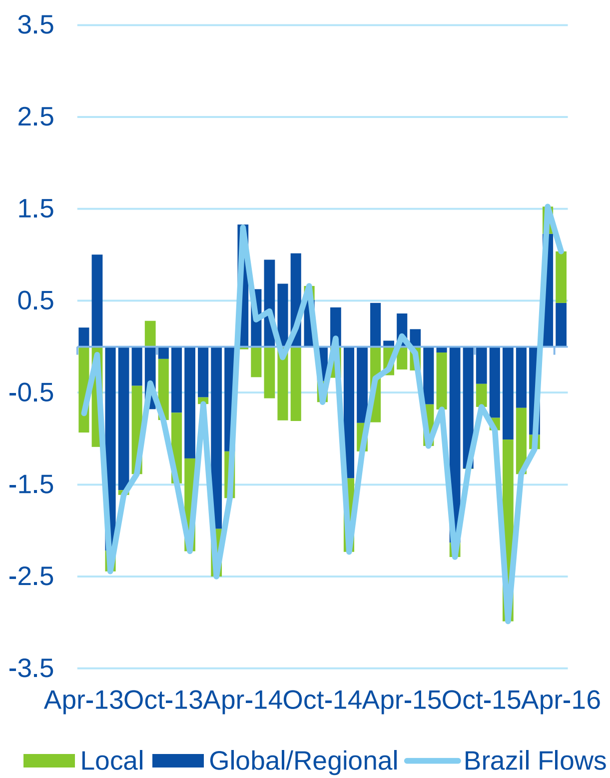
Emerging Asia Ex China Flows
(Decomposition, monthly change in %)



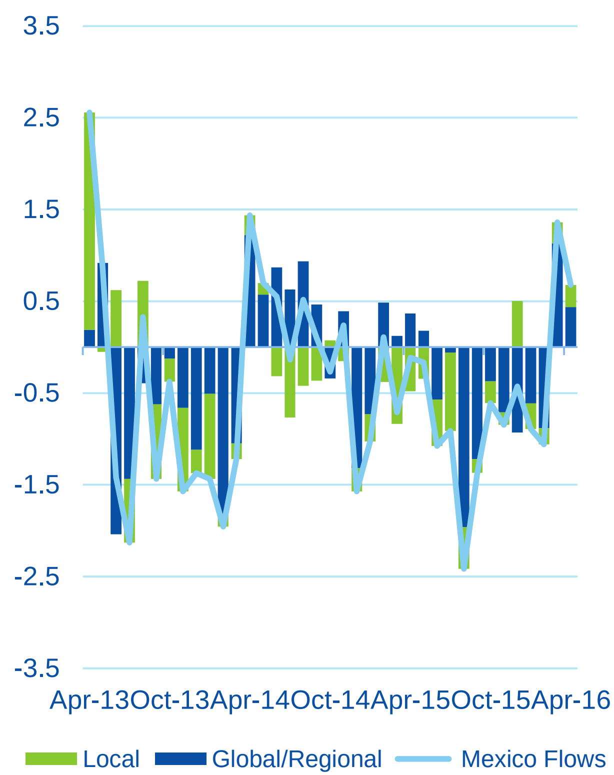
Source: BBVA Research

The rest of major EM enjoyed positive local factor contributions on net inflows

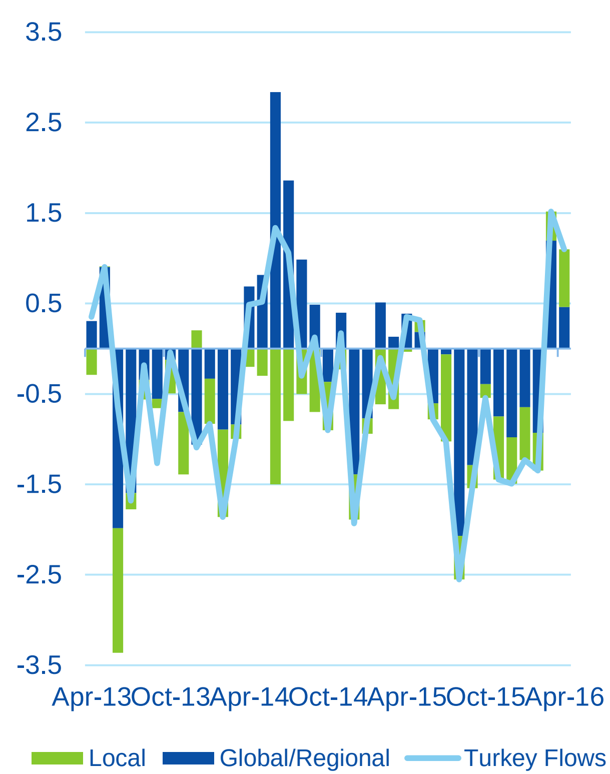
Brazil Portfolio Flows
(Decomposition, monthly change in %)



Mexico Portfolio Flows
(Decomposition, monthly change in %)



Turkey Portfolio Flows
(Decomposition, monthly change in %)

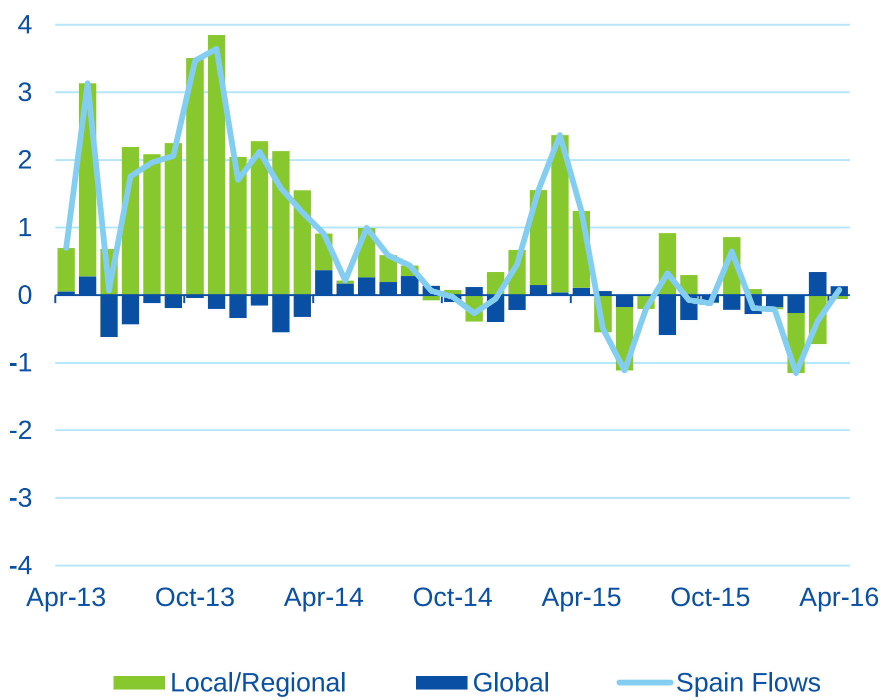


Source: BBVA Research

In the European periphery, the positive contribution of the “regional” component

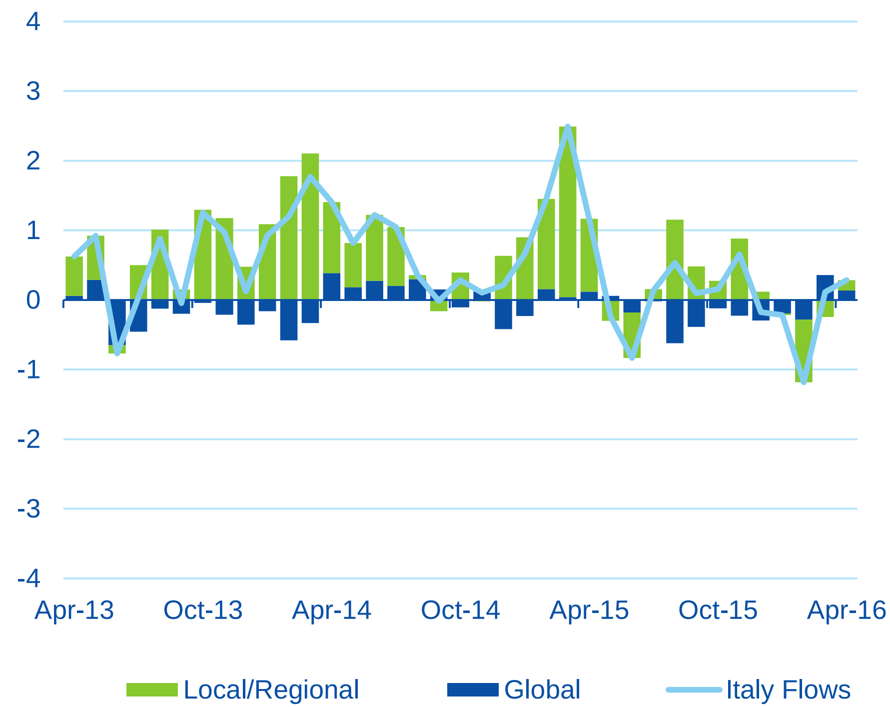
–a main driver of capital inflows over the last few years- turned negative

Spain Portfolio Flows
(Decomposition, monthly change in %)



Source: BBVA Research

Italy Portfolio Flows
(Decomposition, monthly change in %)



Source: BBVA Research

Financial Variables

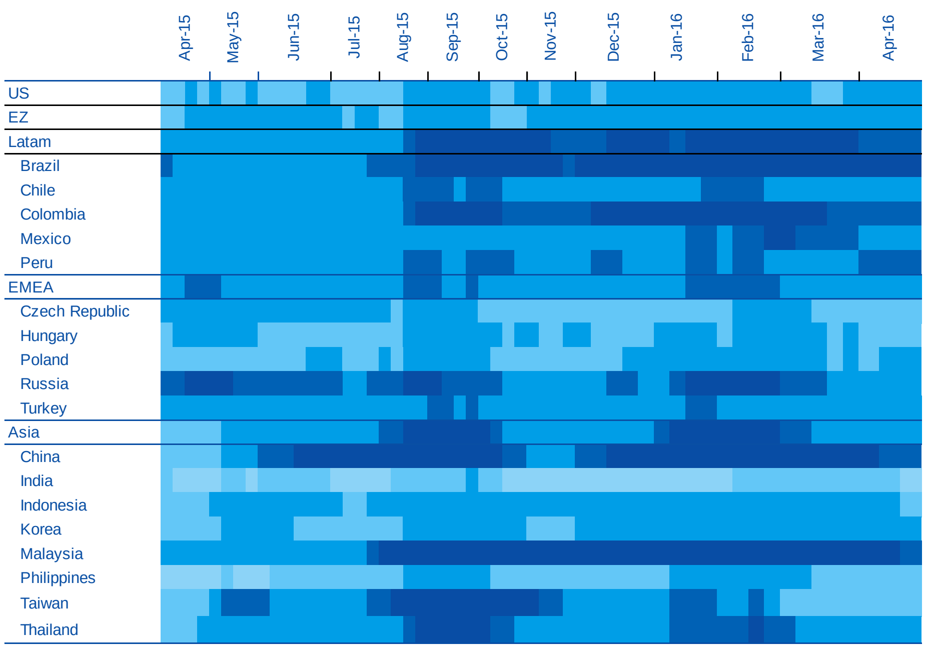
Quarterly assessment

Financial Volatility:

down across the board, mainly in EM, as a result of the stabilization of China and commodity prices. Central banks also help

BBVA Research Financial Stress Index regional map

Standard deviation ≈ (-1, 1)



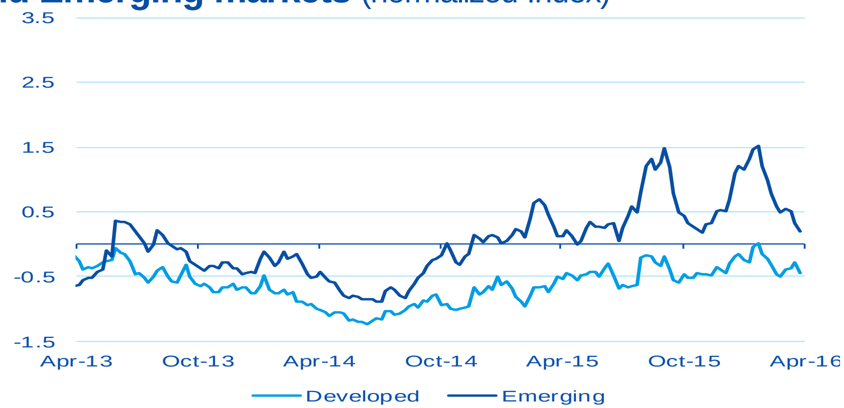
BBVA Financial Tensions Index MAP

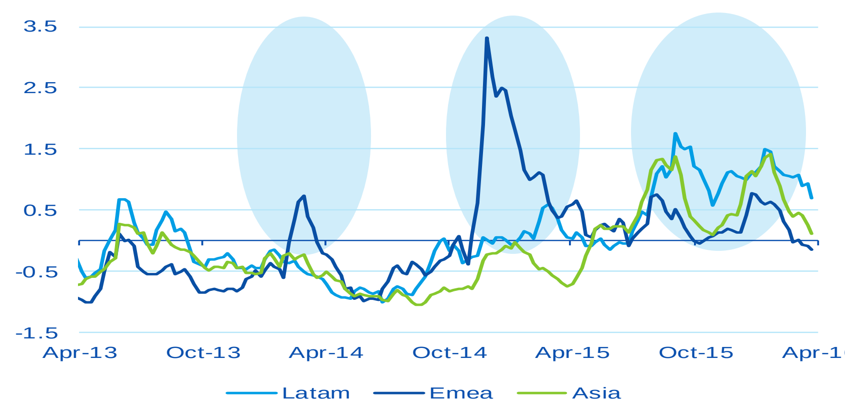
This indicator measures financial tensions from different indicators across DM and EM Countries

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)





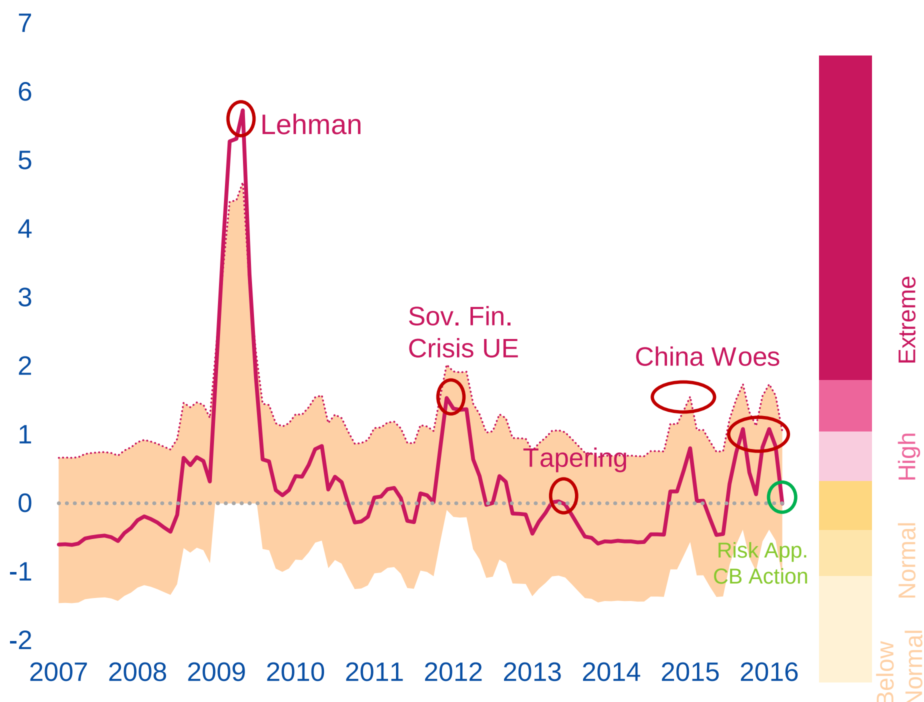
Source: BBVA Research based on Bloomberg data

A second stint of volatility is left behind:

risk aversion has receded and so did safe haven behavior. However, the trend remains increasing in the price of risk

BBVA Research Safe Haven Indicator

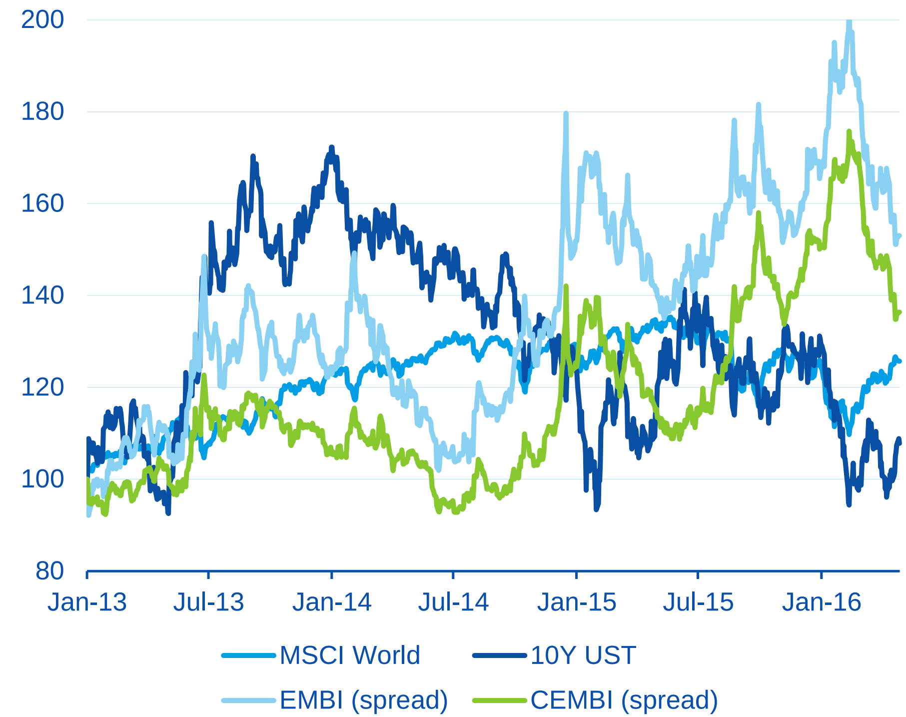
(Median Safe Haven Factor from flows and asset prices data using the BBVA DFM/FAVAR Model)



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



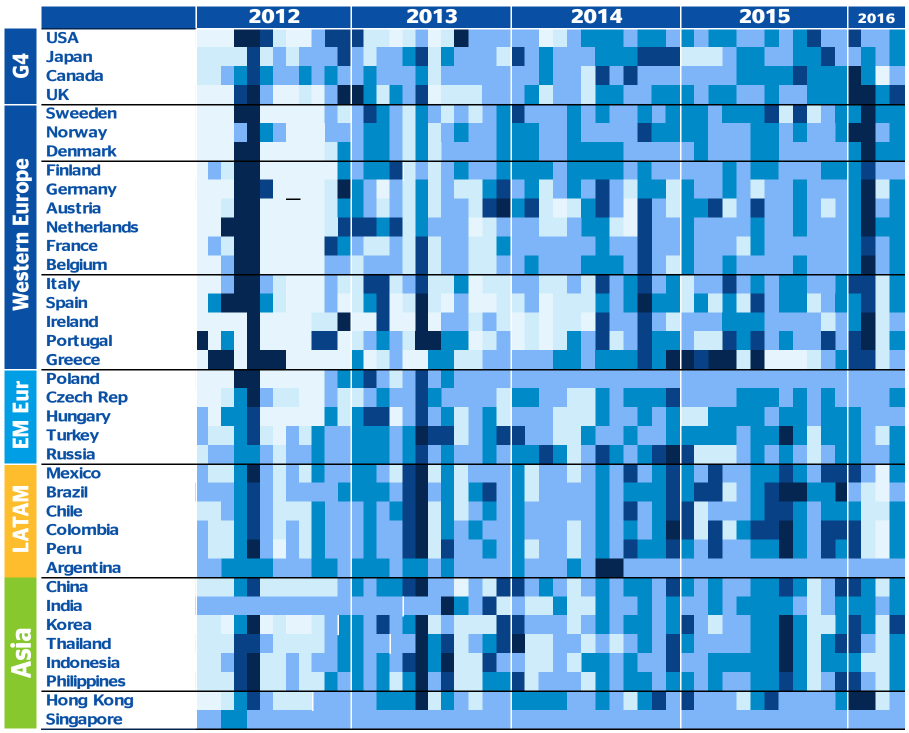
Source: BBVA Research and Bloomberg

Risk Premia:

risk perception shifted to DMs amid increasing economic weakness, banking and policy woes…

BBVA Risk Premia (CDS) Change Map

(Change in risk premia in bps of 5Y CDS. Darker color stand for positive or higher risk premia)



BBVA Research Risk Premia Map*

The Credit Risk Map show the monthly change in % of 5yr. CD Swaps

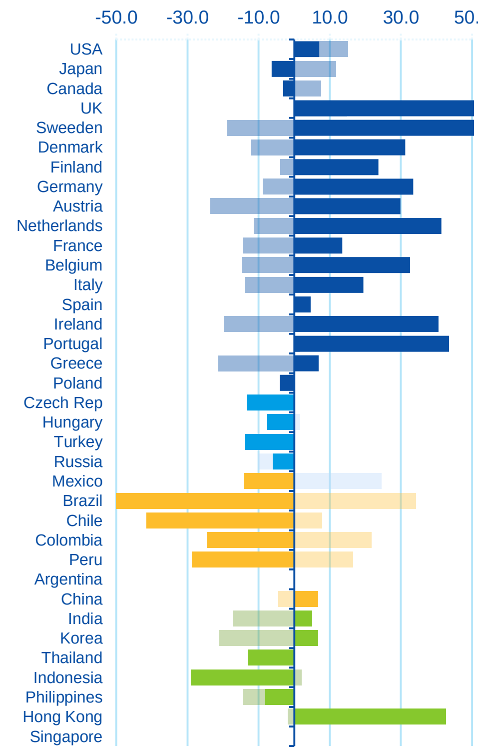
Darker / lighter colors mean sharper increases / decreases of CDS

Increase | Decrease

<+25% | 0% | -25%>

1Q16 Change Credit Default Swaps

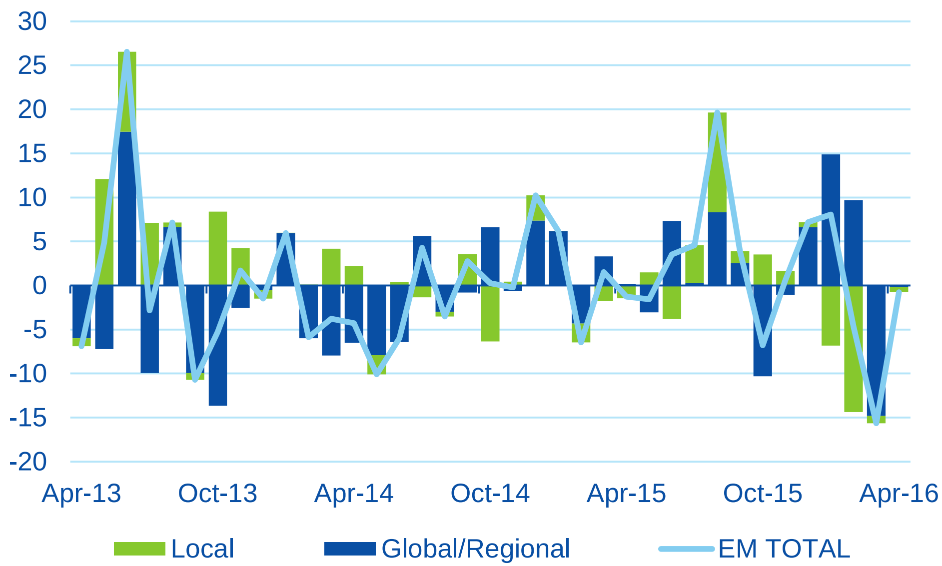
(Change in risk premia in bps, shades represent last quarter change)

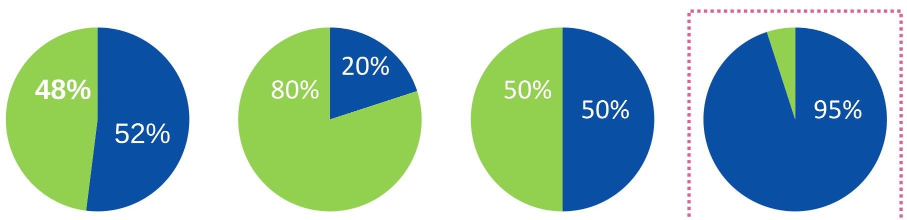


Source: BBVA Research

... while EM benefited from eventual tail winds from China and commodity prices rebound

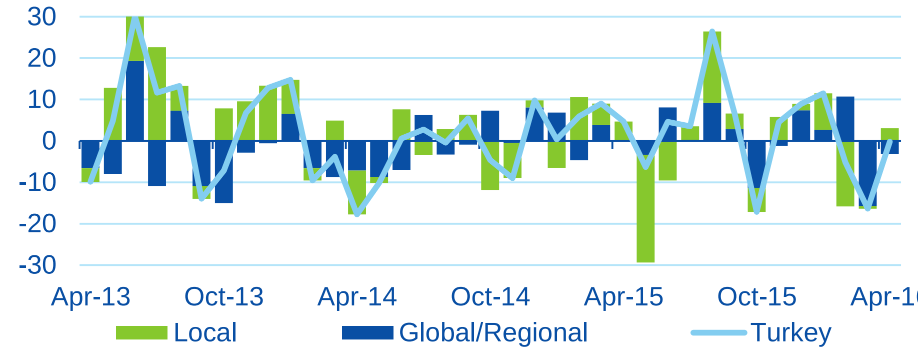
EMs change in risk premia
(Median EM 5Y CDS in bps change)



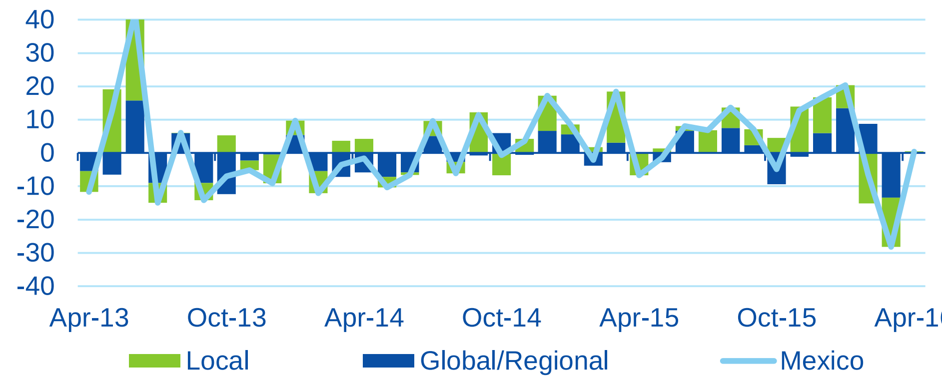


Source: BBVA Research

Risk Premium Change in Turkey and Factors



Risk Premium Change in Mexico and Factors



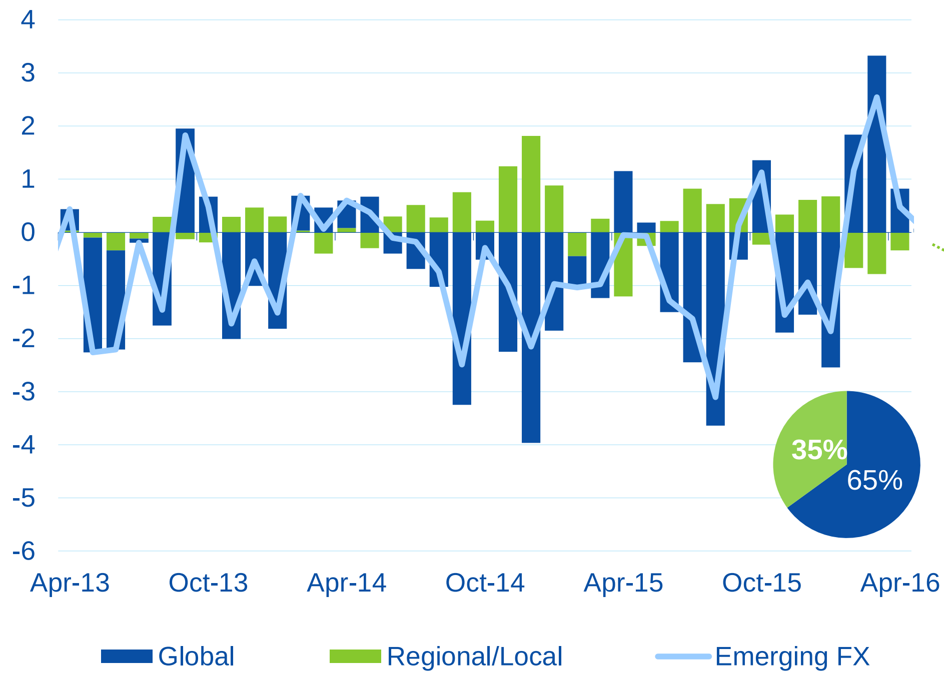
Source: BBVA Research

Exchange Rate: dynamics dominated by the global factors;

dollar weakness and the stabilization of RMB

FX Change Decomposition in Emerging Markets *

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

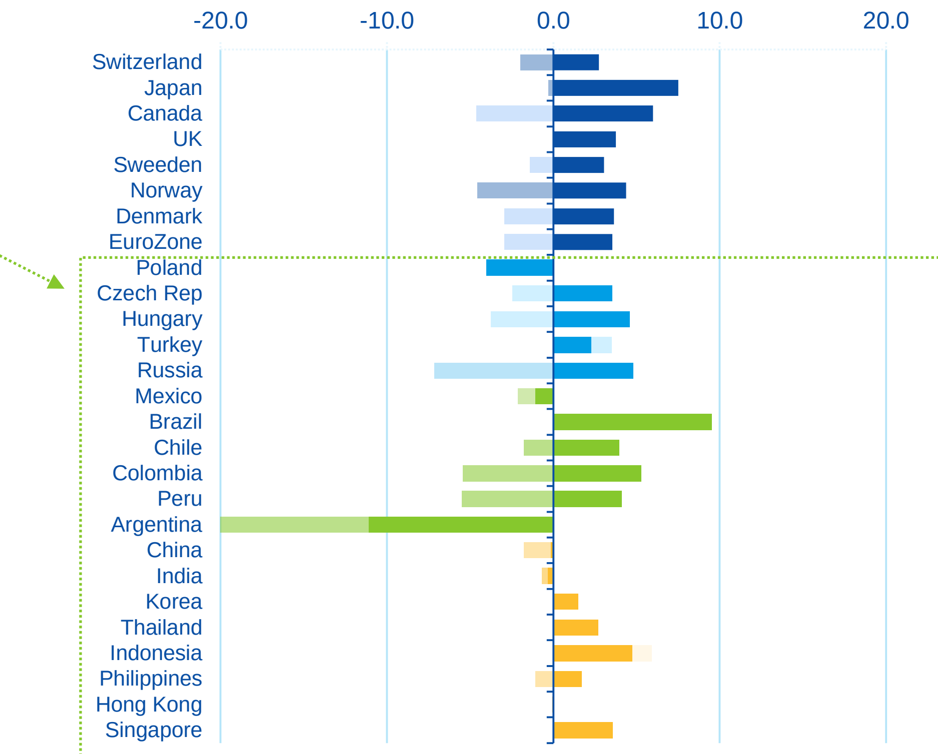


(*) Measured as median % MoM change from the following Emerging Economies; Turkey, Poland Czech. Rep., Hungary, Russia
South Africa, Mexico, Brazil, Chile, Colombia, Argentina, Peru, China, Korea, Thailand, India, Indonesia, Philippines, Hong Kong, Singapore

Source: BBVA Research

FX 1Q16 vs 4Q2015 change in %

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



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

Source: BBVA Research

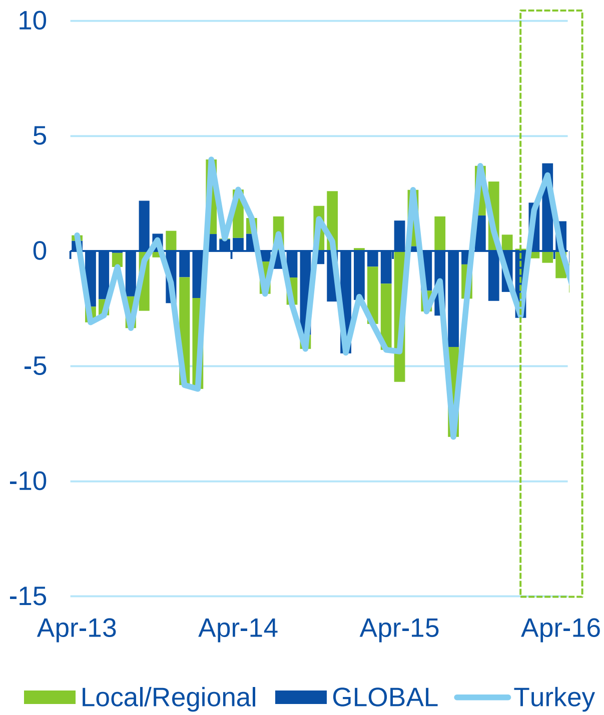
A common trend in mayor EM,

with some exceptions, such as Brazil where local factors also support FX appreciation

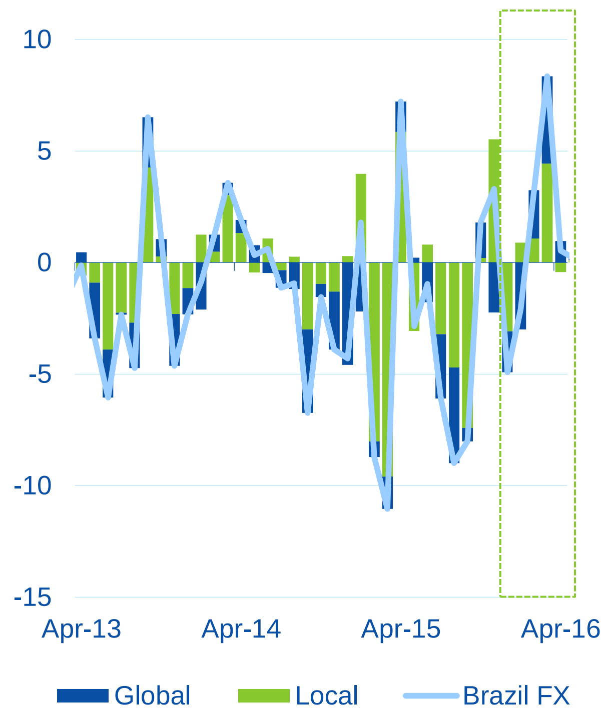
FX Change Decomposition in Emerging Markets

(in % MoM change, negative are depreciations)

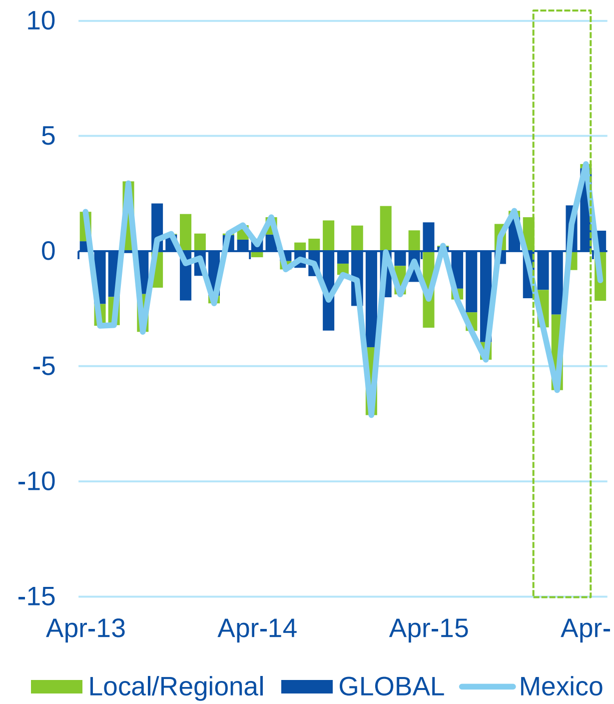
Turkey (Lira)



Brazil (Real)



Mexico (Peso)

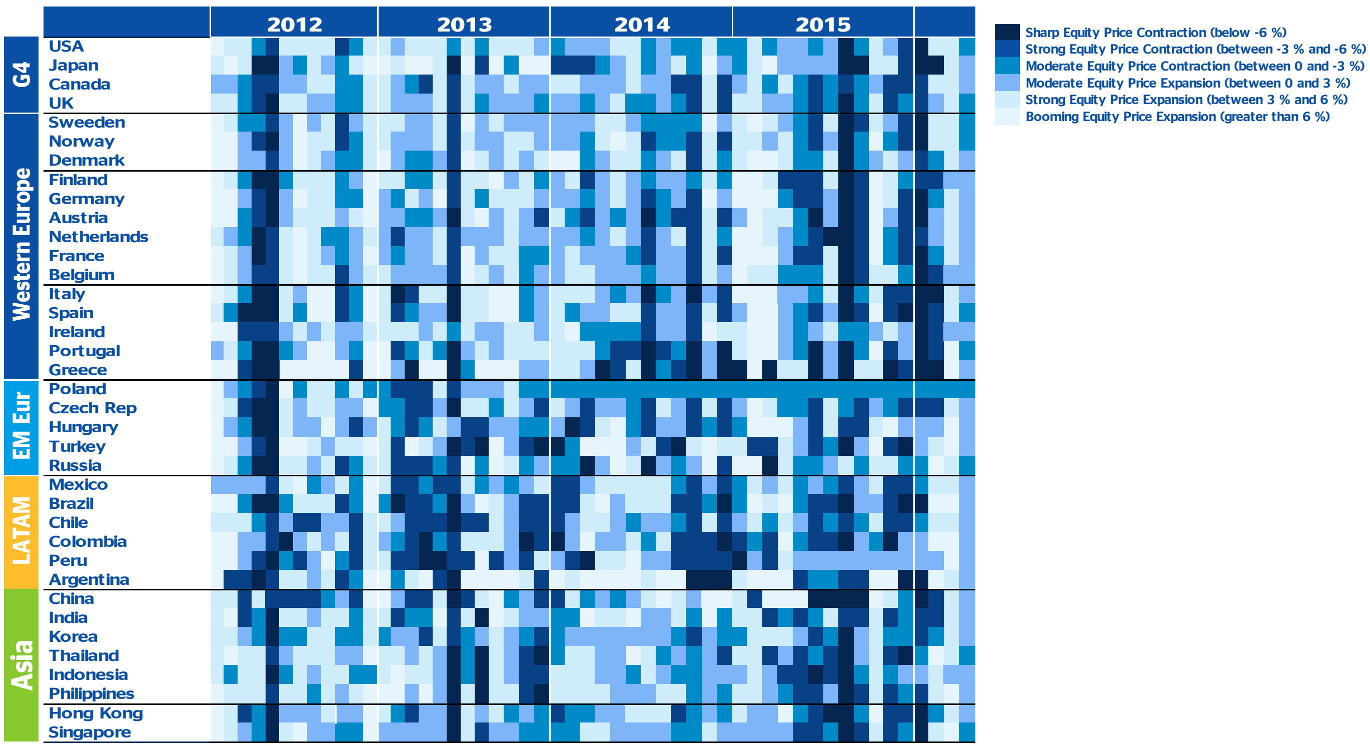


Source: BBVA Research

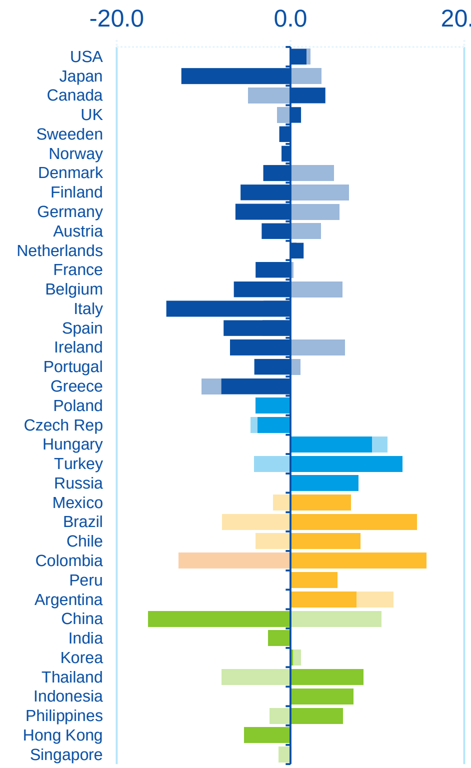
Equity prices:

though stints of further improvement in the short run cannot be discarded, uncertainties about the profit cycle prevent a sustainable price recovery

BBVA Equity Price Map
(Monthly Variation of Equity Price Indexes in %)



Q1 2016 Equity price changes (% QoQ)
(shades are last quarters QoQ change)

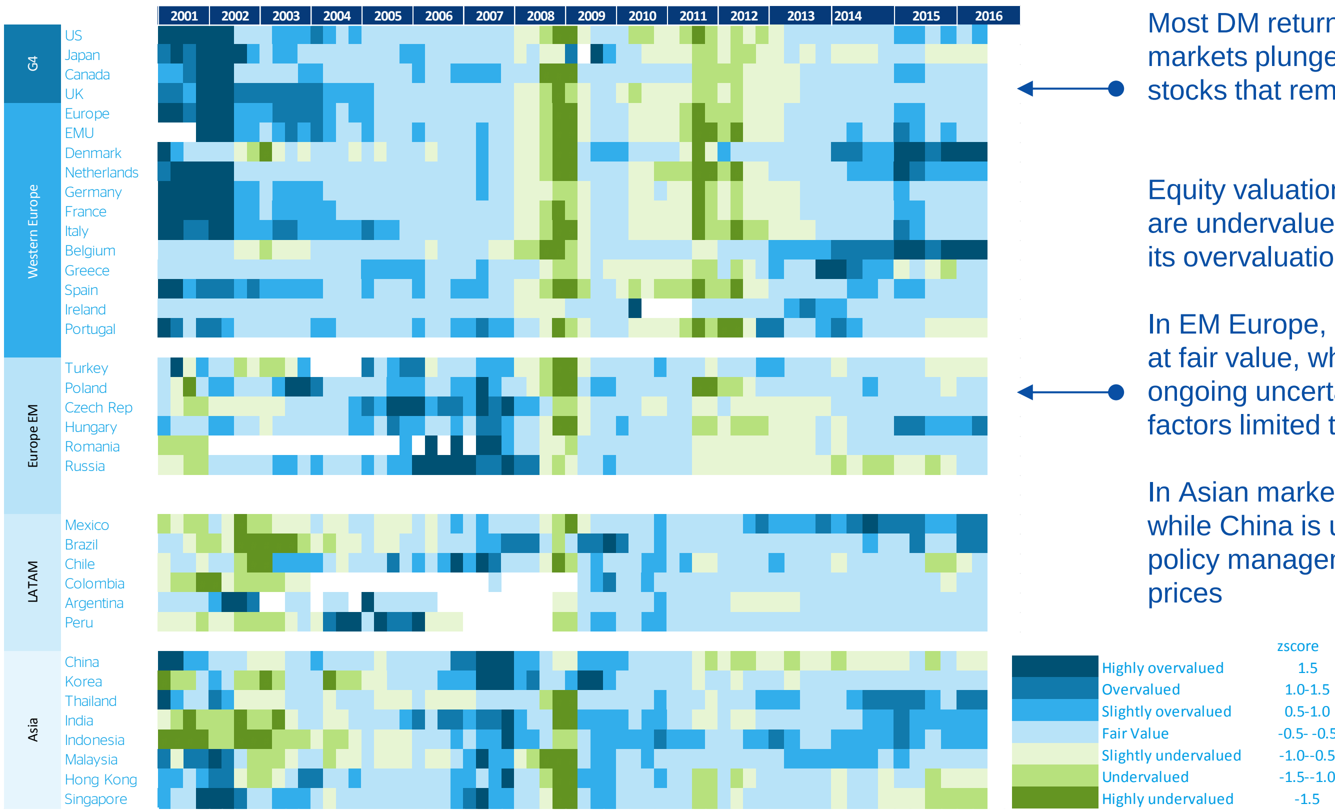


Equity Prices:

the Q4 2015 sell-off improved equity markets valuations and encouraged positive price dynamics at the end of Q116

BBVA Assessing Equity Market Misalignment Composite Indicator

(Weighted average, of PER 12months Forward, PER12months Trailing and P/B Ratios) updated April 14th



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 Poland and Russia are at fair value, while Turkey remained undervalued, but ongoing uncertainties in 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

Scenarios

Simulation analysis

Global risks:

important and bias to the downside. In the short term, China's shock is less likely but remains in the limelight

Risk Scenarios	Definition	Contagion Channels	Global impact: greatest impact
China's shock	**Financial disruption:** huge capital outflows and sharp RMB devaluation **Failure of policies to avoid a *hard landing:*** relapse of domestic demand	**Spike of global volatility:** rebound in EM risk premia& FX depreciations **Global trade downturn** **Oil prices close to 20$/b** 2016-17	**EM commodity exporters** (LatAm)**, China's trade partners and EM countries with a vulnerable external position** (Turkey, Brazil)
Interconnected Disruptive events in DM	**EMU:** political and geopolitical instability (Brexit, populism,terrorism), banking stress and delay in structural reforms **US:** sudden economic slowdown, defaults in oil sector & political instability	**Increase of global risk aversion smoothed by additional QEs** **Global trade downturn** **Oil prices close to 30$/b** 2016-17	**EMU periphery, countries with close trade links with EMU** (EM Europe) **and/or US** (Mexico)
Cycle of defaults in EM corporates	Drop of profitability and tightening of funding conditions provoke a **cycle of defaults in "systemic"leveraged corporates (SOEs, mainly)**	**Sharp relapse in domestic demand with spillovers on banks** (NPL) **and public sector** (capital injections)	**Vulnerable EM with high corporate indebtedness** (China, Brazil, Mexico, Turkey)
Fed's overreaction to transitory inflation shock	**Agressive tightening path in response to a transitory increase of inflation** (not supported by US domestic demand)	**Increase of global risk aversion** **Huge EM capital outflows** **Synchronized activity adjustment** (focus on leveraged sectors)	**EM with a more vulnerable external position** (FX debt & current account deficit) as, for example, Turkey and Colombia

Probability

Severity degree

Scenarios

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

Baseline Scenario → **Financial shock (volatility rebound)** → **China's shock with global spillovers**

Baseline Scenario

- **Global growth**
  Gradual yet subpar global recovery supported overly by DMs
- **Global monetary policy**
  Long end rates anchored at low levels. Divergences remain after Fed lift-off
  (BCE further easing vs smooth yet steady Fed hikes)
- **Global risk aversion**
  Resilient at the current levels as
  EM risk premia

Financial shock (volatility rebound)

- **Global growth**
  Global growth impaired as a result of higher financial risk aversion
- **Global monetary policy**
  Reinforced easing in DM. EM Policy constrained by weakening activity and flow dynamics
- **Global risk aversion**
  Heightened risk aversion globally and, in particular, in EM

China's shock with global spillovers

- **Global growth**
  EM meltdown; DM stagnation
- **Global monetary policy**
  Reinforced easing in DM and flight to quality anchors long rates at low levels. Tightened funding conditions in EM
- **Global risk aversion**
  Despite policy support in DM, relentless surge in EM risk premia to extreme stress levels

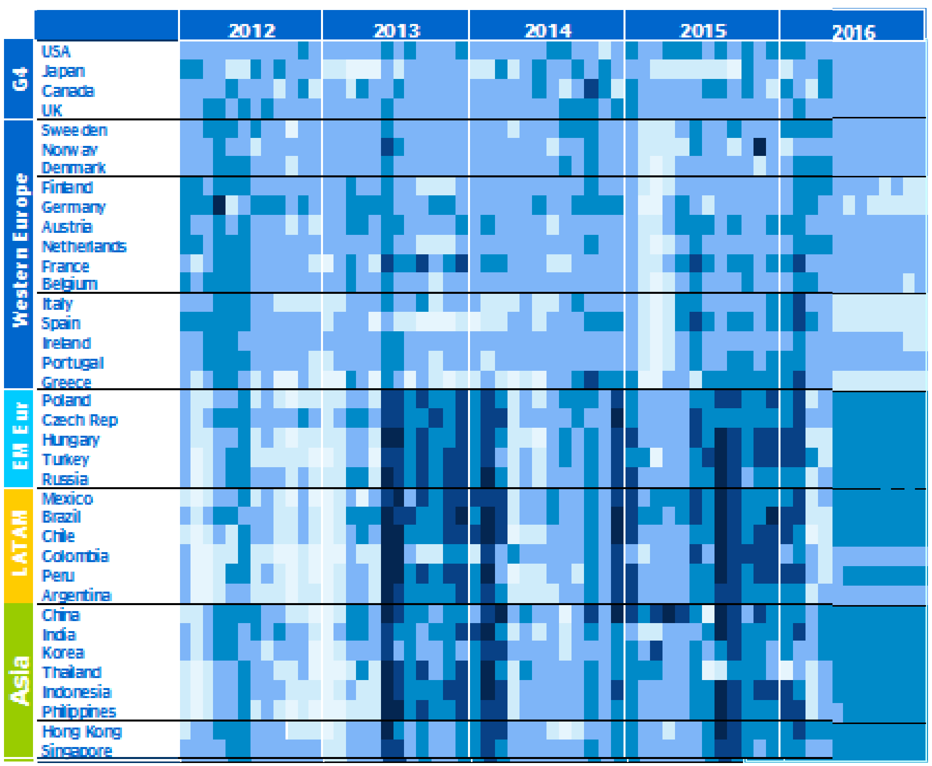
Source: BBVA Research–FAVAR Model

Baseline Scenario

Current positive inertia will favor EM in 2Q16 but flows could turn negative in 2H16

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 Market & Macro Scenario

Global Growth
+3.3 pp in 2016-17 avg.
+2.0 pp DM
+4.2 pp EM

Global Monetary Policy
2.3 pp & 2.8 pp 10y T-note in 2016 & 2017 EoP
0.6 pp & 0.9 pp10y Bund in 2016 & 2017 EoP

Global Risk Aversion
VIX stands to 20 points until 2017 EoP
EMBI resiliently elevated at 4.4 pp 2017 EoP

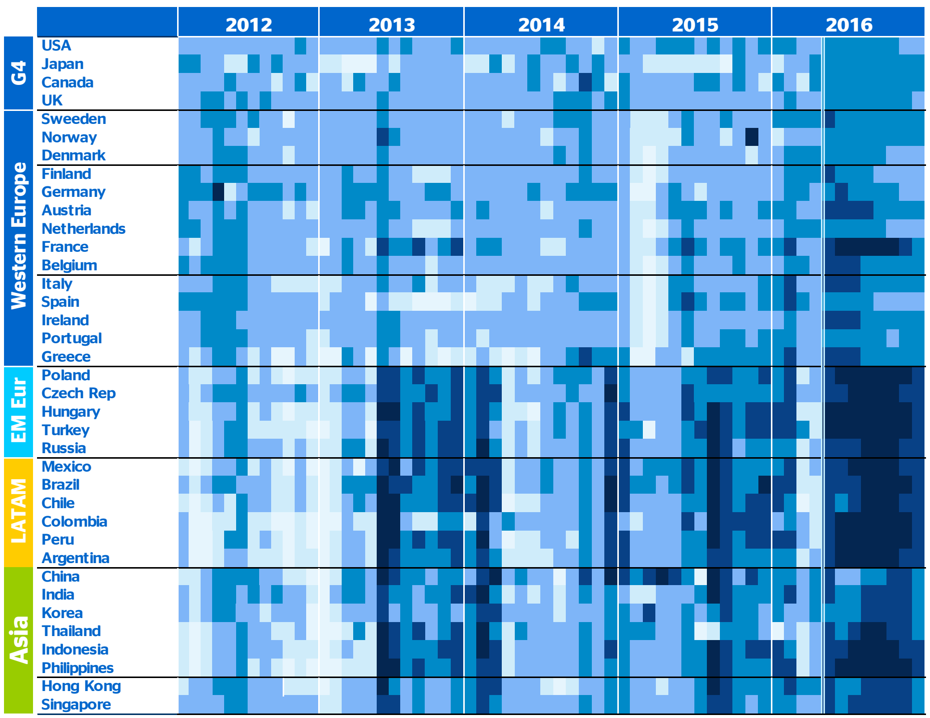
BBVA Research Portfolio Flows Map*
The Flows Map show the monthly evolution of net inflows with darker blue colors representing sharp net outflows and lighter colors standing for net Inflows

Financial Shock Scenario

A deep but short-lived financial “slippage”

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

Financial Shock: Market & Macro Scenario

Global Risk Aversion

VIX to reach 35 in 2016 and reverse below 20 in 2017 EoP

EMBI spikes the VIX alike in 2016 and 2017 EoP

Global Growth (implied from increased volatility)

-3.0 p.p Q4 2016 in DM

-6.0 p.p Q4 2016 in EM

Global Monetary Policy (implied from increased volatility)

1.8 and 2.2 10y T-note in 2016 & 2017 EoP

0.3 and 0.6 pp10y Bund in 2016 & 2017 EoP

Outflows Inflows

<-2% 0% +2%>

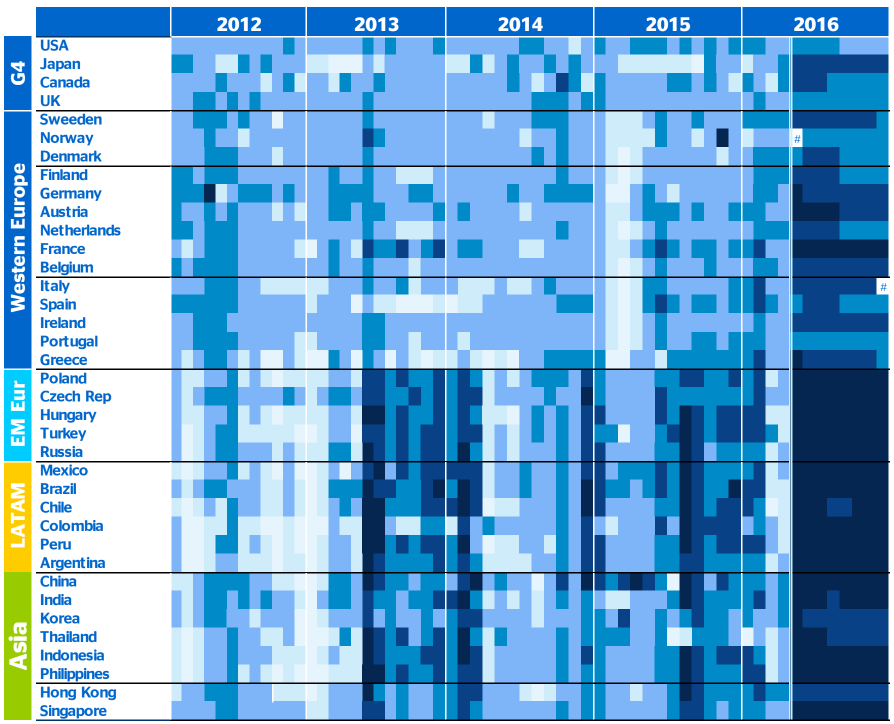
BBVA Research Portfolio Flows Map*
The Flows Map show the monthly evolution of net inflows with darker blue colors representing sharp net outflows and lighter colors standing for net Inflows

Heightened Global Risk on China' shock

Global portfolio retrenchment with severe impact on EMs. Unwinding positions cashed into deposits: no reallocation

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

China's shock with global spillovers

Global Growth

-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 -150 pbs below baseline on average in 2016 & 2017
Bund -100 bps below baseline on average in 2016 & 2017

Global Risk Aversion

VIX high at 25 2016 EoP & down to 15 by 2017 EoP
EMBI surges to 6.5 pp until end 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

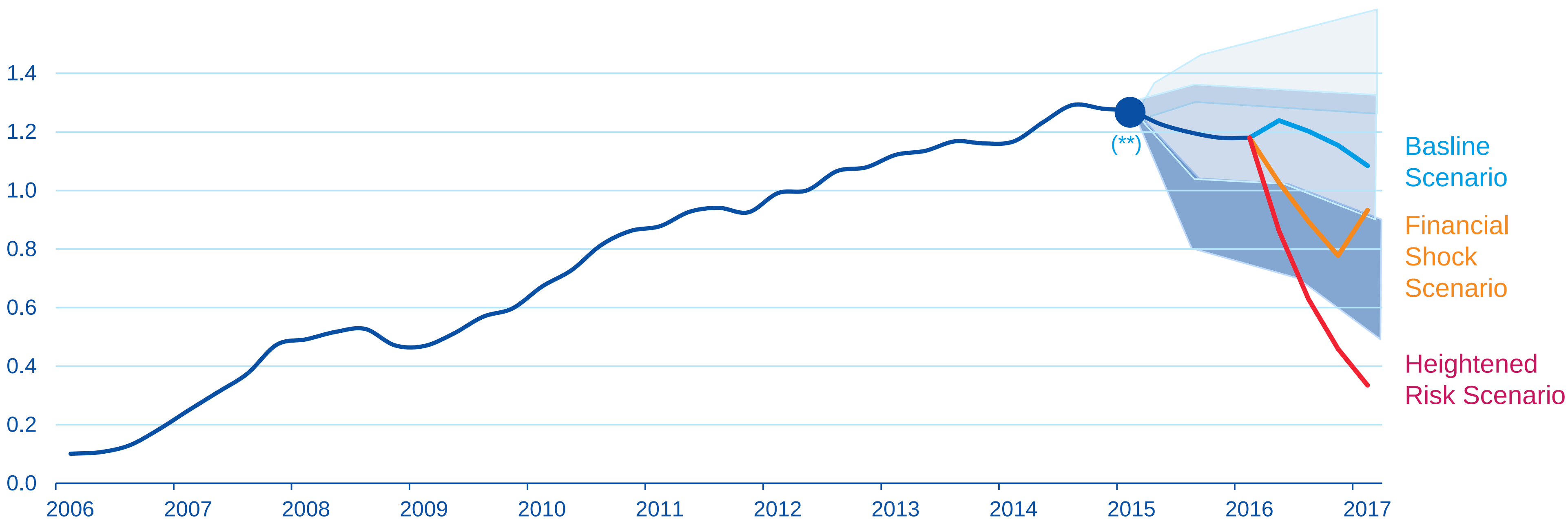
Summary

Risk appetite inertia to fuel EM flows until June.

Yet risks remain tilted to the downside in any scenario

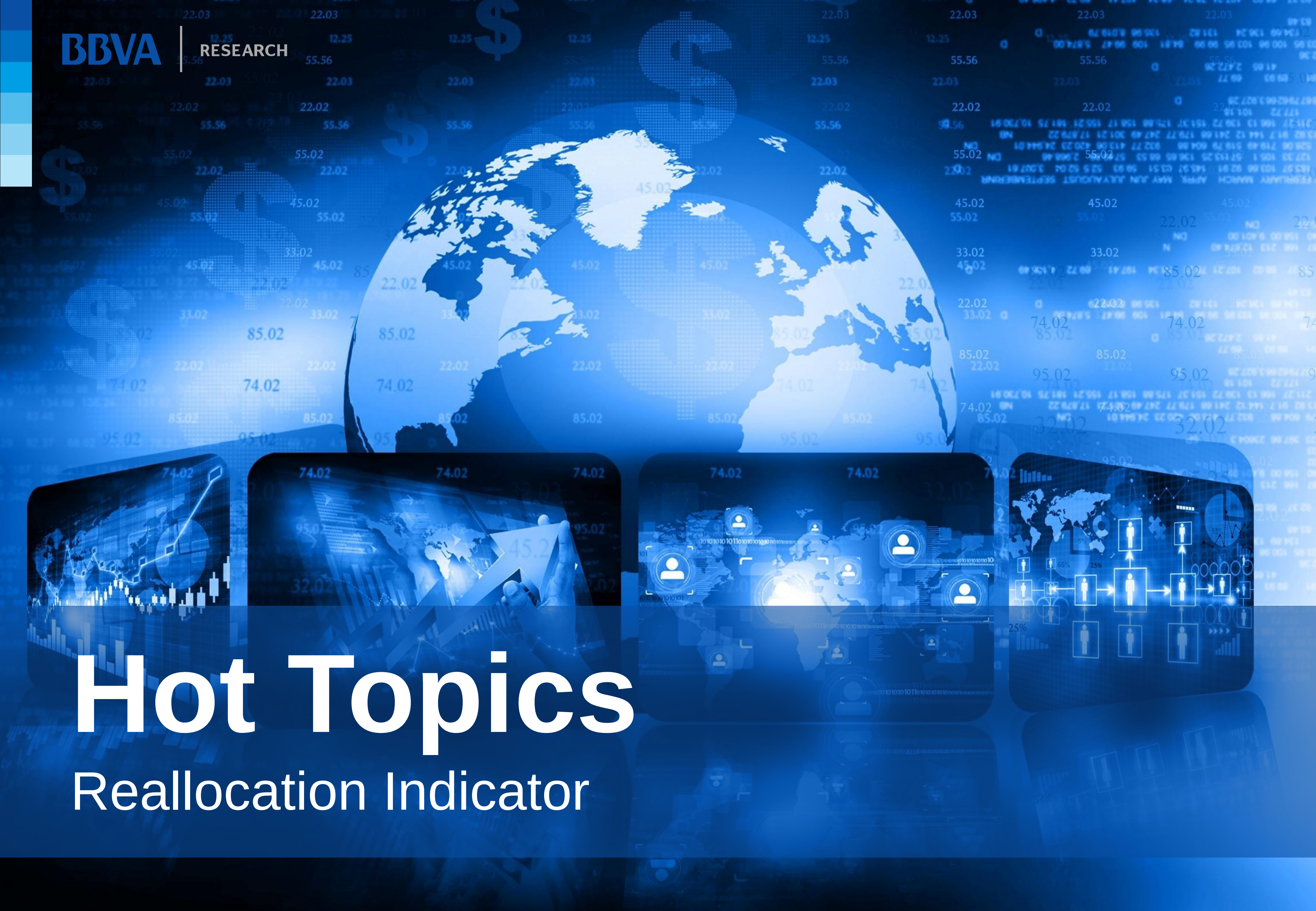
Scenario Conditional Flow Paths for EMs

(Baseline and alternative scenarios) Cumulative in US $ Tn. Forecast as of April 2016)



(**) Scenarios as designed on 2014Q4: Positive (supportive from MP in DMs), Negative (non supportive) and High Risk (financial exacerbation of the net flows). They do not correspond to todays envisaged scenario paths but for illustrative purposes they are exposed to compare with what is currently happening. The array of unanticipated shocks are shifting all simulations to the worst scenario and below

Source: BBVA Research

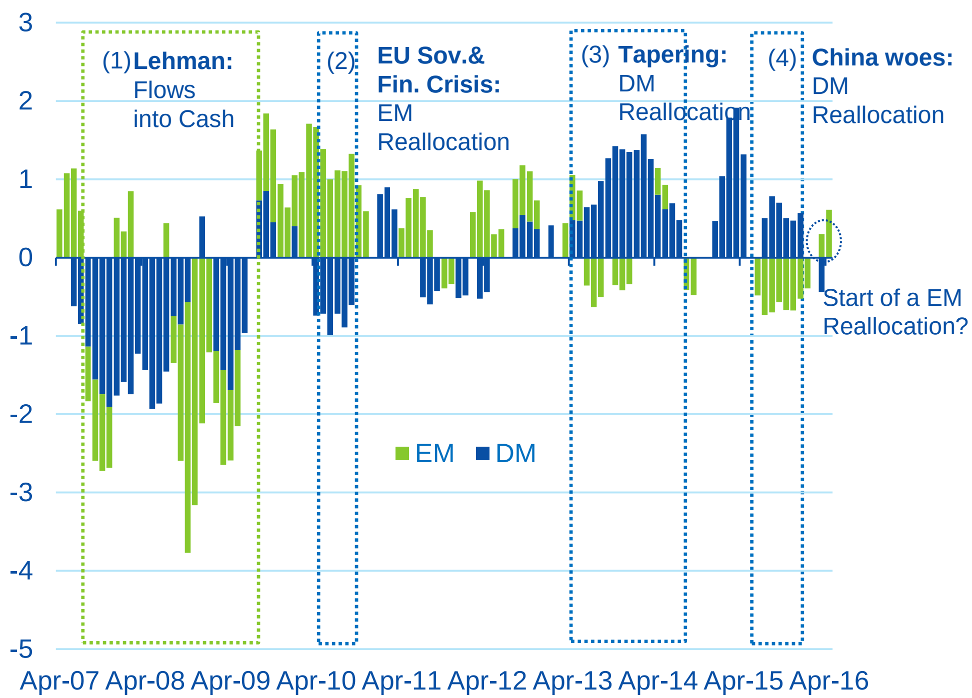


Hot Topics

Reallocation Indicator

Hot Topic: Portfolio Flow Reallocation Tracker

BBVA Developed vs. Emerging Market Portfolio Flows Reallocation Indicator*



(*) 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)

Source: BBVA Research

Reallocation Story

(1)Portfolio Slump NO reallocation, flows contract yet unevenly penalized in DMs and EMs

(2) Reallocation form DM into EM amid the European Sovereign-Financial Crisis

(3) Reallocation from EM into DM amid the Fed Policy Normalization Communication (Tantrum)

(4) Reallocation EM into DM on Emerging Market Woes (EM Sell Off-China-Oil Prices)

1Q 2016 & Abril 2016

Q1 2016 EM reallocation faded off on DM concerns, eventually April allocation into EM sustained on EM activity Respite, commodity cycle reversal Fed's Dovish Tome. We believe this will be short lived

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 (Ft) and Flows (Xt)

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

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

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

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=b1i*Global(t)+b2i*EME(t) +bi*IDIO(t)i+U(t) *(emerging)*

PF(t)j=b1j*Global(t)+b4i*DME(t) +bi*IDIO(t)i+U(t) *(developed)*

PF(t)j=b1j*Global(t)+ b4i*DME(t) ++b5i*SH(t) + bi*IDIO(t)i+U(t) *(SH)*

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

$$\begin{bmatrix} Y_t \\ F_t \end{bmatrix} = A(L) \begin{bmatrix} Y_{t-1} \\ F_{t-1} \end{bmatrix} + \eta_t$$

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.

Global & Regional Macro Shocks

Transmission Channels (Macro & Factors)

From Factors To Fin. Variables

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

Disclamer

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