

BANCODE **ESPAÑA**
Eurosistema

ECONOMIC BULLETIN 2/2019
ANALYTICAL ARTICLES

16 May 2019

Capital flows to emerging economies: recent developments and drivers

Luis Molina and Francesca Viani

Abstract

Emerging markets have gained prominence as recipients of capital flows since the onset of the financial crisis in 2008. This raises their exposure and goes hand in hand with greater dependence on external financing and heightened sensitivity to global shocks. However, some differences can be observed across regions. For example, while the more stable types of capital flows (direct investment) continue to outweigh other types in Latin America, in Asia and the Middle East the recent increase in capital inflows has taken the form of debt, private in the case of Asia and mostly government debt in the Middle East. Against this background, this article examines the impact on the capital flows to these economies of five potential global shocks: an appreciation of the dollar, a fall in commodity prices, an increase in global aversion to risk, expectations of monetary policy tightening in the United States and lower regional growth compared with advanced economies. The findings of this article suggest that the factor with the greatest impact on portfolio flows to emerging markets is the appreciation of the dollar although, in the case of Latin America, commodity prices also play a very significant role.

Keywords: capital flows, emerging markets, Latin America.

JEL codes: F30, F32, F37, G15.

CAPITAL FLOWS TO EMERGING ECONOMIES: RECENT DEVELOPMENTS AND DRIVERS

The authors of this article are Luis Molina and Francesca Viani, of the Directorate General Economics, Statistics and Research.

Introduction

The launch of sizeable liquidity-provision programmes by central banks in the main advanced economies, following the crisis that began in 2008, led to emerging market economies (EMEs) gaining prominence as recipients of capital flows, particularly portfolio flows. More recently, from 2015 to 2018, 23% of international portfolio flows were to emerging countries, compared with 8% in 2007, while direct investment flows to these economies rose from 21% to 38%. The higher volume of capital received was accompanied by an increase in the volatility of these flows. Thus, since 2008, a number of episodes of strong portfolio inflows into EMEs have been followed by sudden stops and a flight to quality, coinciding with changes in the monetary policies of advanced economies and events in international financial markets (see Chart 1.1).

This article describes the developments in capital flows to emerging economies in the post-crisis years, analyses the theoretical drivers and assesses the impact on these flows of different types of shocks, such as a tightening of global financial conditions, an increase in global risk aversion or a fall in growth expectations. To estimate these effects, various econometric exercises have been carried out, highlighting the specific impacts on flows towards Latin America.

Recent developments in capital flows to emerging economies

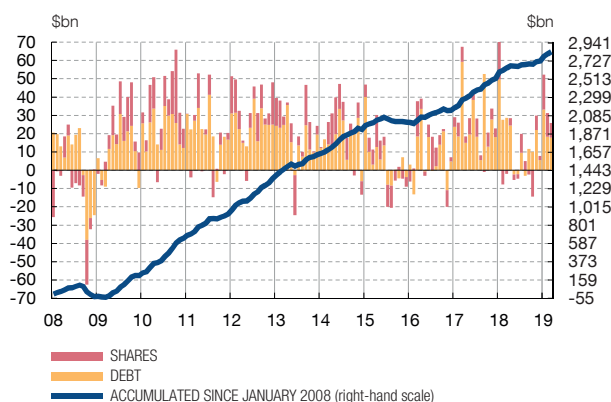
Capital flows are generally classified into three large groups, depending on their use in the recipient country: foreign direct investment, for the start-up of new firms in the recipient country or the acquisition of existing firms, as in the case of the privatisation of state-owned enterprises in Latin America in the 1990s; portfolio flows, which are used for the acquisition of financial assets (bonds or shares) issued by residents of the recipient country, without seeking to acquire a controlling interest; and lastly, a category of “other flows”, which includes loans granted by international banks to residents of the recipient country.

As pointed out in the introduction, EMEs are becoming increasingly important for international investors. Thus, the gross inflows of all types of capital into these economies accounted for 43% of the world total in 2018 Q3, and gross outflows represented around 30% (see Charts 1.2 and 1.3).

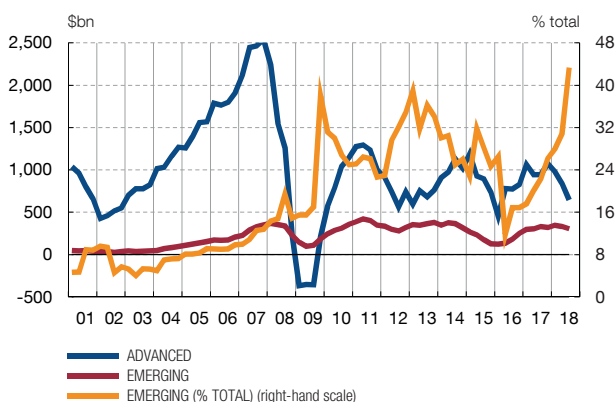
Net capital inflows into emerging economies (see Chart 2.1), which peaked in terms of GDP at the beginning of 2008, recovered quickly from the effects of the global crisis. By component, net direct investment inflows remained fairly stable throughout the period analysed, insofar as the gradual decline in gross inflows (see Chart 2.3) kept pace with the decrease in gross outflows (see Chart 2.5), while net inflows invested in debt increased substantially after the crisis. The episodes of financial turmoil in 2014 and 2015, triggered by the slump in oil prices and China’s stock market crash, significantly reduced net portfolio inflows (particularly debt) and bank flows. In fact, net bank flows have been declining almost uninterruptedly since the end of 2011. This trend has also been observed in advanced economies and is related to banking disintermediation worldwide, partly arising from the new banking regulations that have come into force since the 2008 crisis, and the overall process of deleveraging in the banking sector. Since the end of 2016, the new wave of external indebtedness among some emerging economies (specifically,

Emerging markets have become key players in global financial markets, since they increasingly attract all types of flows and have increased their share of capital outflows, heightening their sensitivity to global events as shown by the recent decline in portfolio inflows which, however, have recovered since the beginning of the year, thanks to Asia.

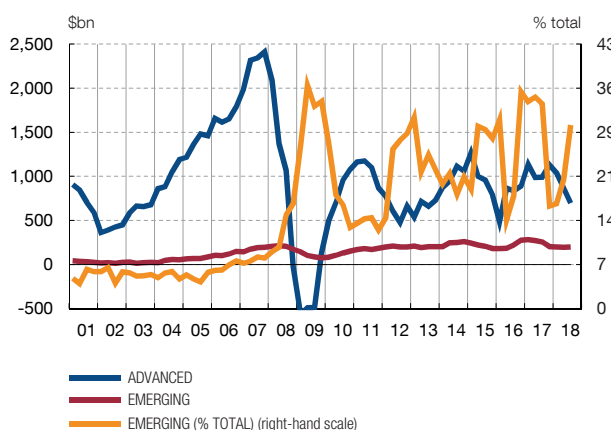
1 EMERGING ECONOMIES: PORTFOLIO CAPITAL FLOWS



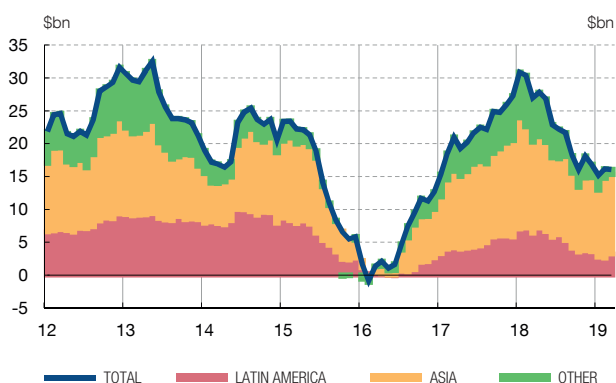
2 CAPITAL FLOWS: GROSS INFLOWS



3 CAPITAL FLOWS: GROSS OUTFLOWS



4 EMERGING ECONOMIES: PORTFOLIO CAPITAL FLOWS (Annual moving average)



SOURCES: Thomson Reuters, Institute of International Finance (IIF) and national statistics.



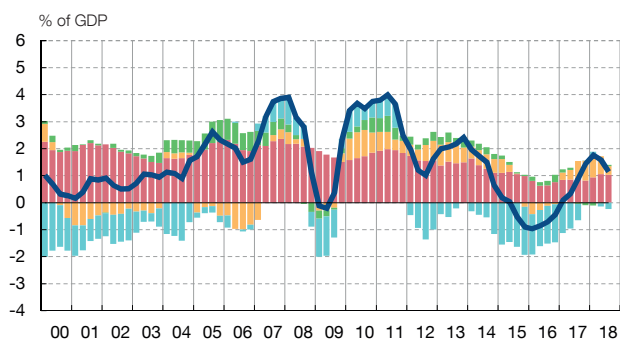
sovereign bonds in the Middle East and firms in Asia, particularly China), led to the strong recovery of net inflows.

Emerging markets in Latin America have behaved differently. After the crisis, while net capital inflows fell to zero in other emerging economies (as a result of a decrease in gross inflows and outflows in Asia and Eastern Europe, and to a substantial increase in gross outflows in the Middle East), net inflows remained more stable in Latin America (see Chart 2.2). The increase in net debt inflows since 2016 is not only attributable to new issuance (see Chart 2.4), as is the case in the other emerging countries, but also to a fall in gross outflows from the region (see Chart 2.6).

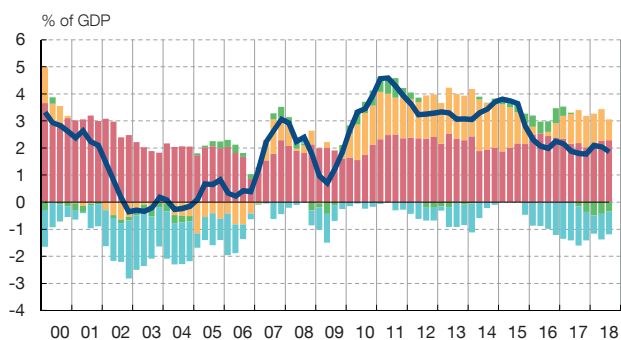
More recently, net portfolio capital inflows to emerging economies again reached levels close to record highs in 2018 Q1 (see Chart 1.4), thanks to the flows into debt securities. However, the turmoil experienced from April 2018 onwards (resulting from the rise in long-term interest rates in the United States and the appreciation of the dollar), reduced net inflows to levels similar to those observed in 2015, entailing a decrease of some \$18 billion

Both the gross capital inflows and gross outflows declined after the 2008 crisis, while the recent increase may arise from debt issuance. In Latin America, direct investment inflows remain high.

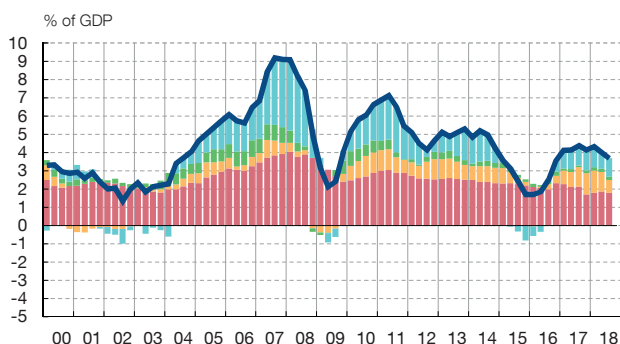
1 EMERGING ECONOMIES: NET CAPITAL FLOWS



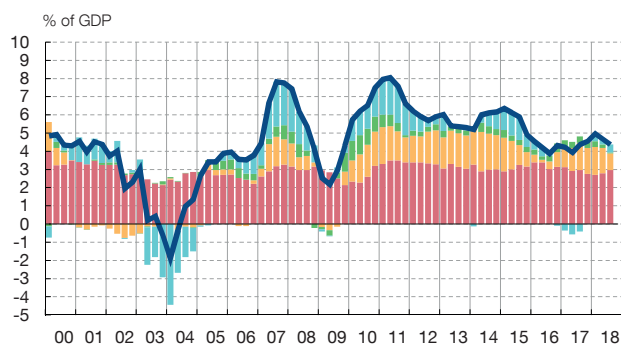
2 LATIN AMERICA: NET CAPITAL FLOWS



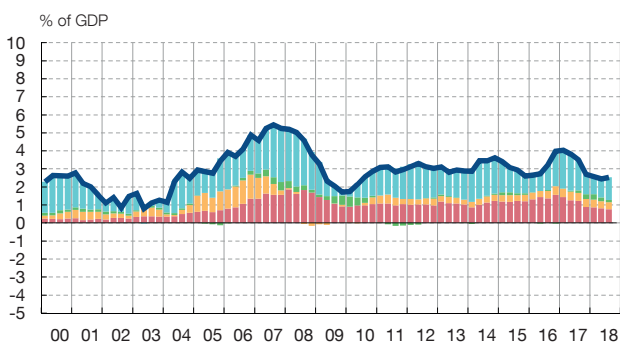
3 EMERGING ECONOMIES: GROSS INFLOWS



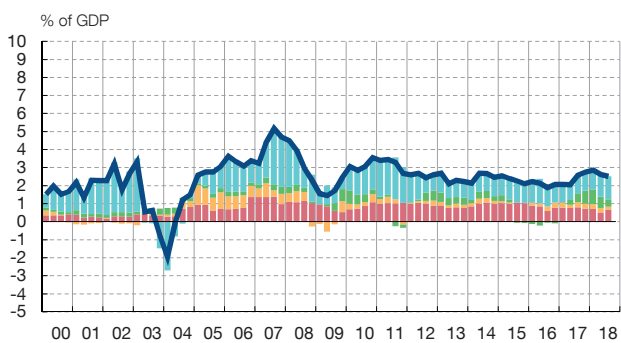
4 LATIN AMERICA: GROSS INFLOWS



5 EMERGING ECONOMIES: GROSS OUTFLOWS



6 LATIN AMERICA: GROSS OUTFLOWS



FOREIGN DIRECT INVESTMENT PORTFOLIO (DEBT) PORTFOLIO (SHARES) OTHER TOTAL

SOURCES: Thomson Reuters and national statistics.



in the year. The reduction was particularly pronounced in debt flows (Latin America and Eastern Europe) over the summer, and in equity flows in October. The most favourable behaviour in 2019 to date has been observed in Asia.

Theoretical drivers of capital flows to emerging markets

The economic literature classifies the drivers of international capital flows into two categories: push factors and pull factors. Pull (or internal) factors are found in recipient countries and mostly reflect changes in the risk-adjusted return on assets issued, owing to

changes in growth expectations or in the macroeconomic outlook, or to changes affecting other risk factors, from price volatility to expropriation risks. Conversely, push (external or global) factors are found in issuing countries and tend to drive (or repatriate) capital (from) abroad as a result of a decrease (increase) in the attractiveness of investing in the country of origin of the funds or of the greater (more reduced) availability of these funds. Thus, for potential capital movements from advanced to emerging economies, the main push factors would be the monetary conditions in those advanced economies and the risk aversion of international investors, while pull factors would include the growth rate differential between emerging and advanced economies, the return on assets of recipient countries (whether on the stock market or through carry trade transactions), macroeconomic stability and institutions that would allow the investor to appropriate the returns obtained.¹

An empirical exercise on drivers of capital flows

In line with these theoretical developments, and following a framework similar to that used in the most recent studies,² this section presents the results of two empirical exercises on drivers of capital flows to emerging countries (see Box 1 for technical details).

Overall, the results are consistent with previous literature. Thus, portfolio flows received by EMEs depend negatively on global risk aversion and the appreciation of the dollar (push factors), and on political risk in the recipient country and the growth rate differential with respect to advanced economies (pull factors). The impact estimated for Latin America is different from that of the other EMEs in the case of commodity prices (positive, indicating greater inflows if prices rise) and the appreciation of the dollar (with a non-significant, lower coefficient).

For bank flows, the significant push variables are global risk and the global liquidity indicator, together with the appreciation of the dollar, while the pull factor would be the political risk of the recipient country. Conversely, bank flows to Latin America depend on commodity prices and the sovereign rating. Lastly, the drivers of direct investment are more structural. The only significant variables for the sample as a whole are the slope of the US yield curve (which approximates US growth expectations in the medium term) and the sovereign rating of recipients, as a measure of their institutional quality. In the case of Latin America, geopolitical risk and the level of reserves as a percentage of GDP are also significant.

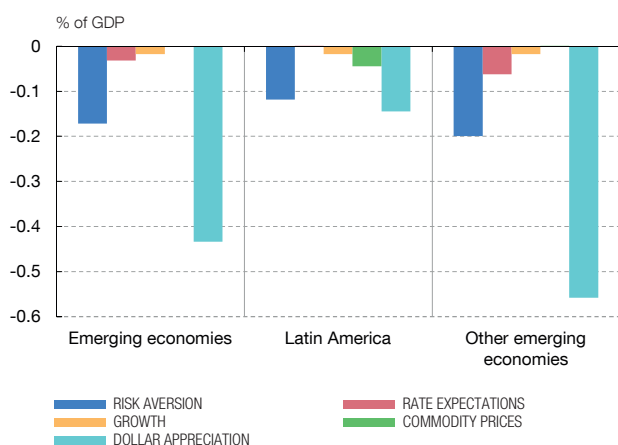
Given the importance of push factors, the results of the model are used to simulate the impact of five potential global events or shocks on capital flows to EMEs. These shocks are analysed separately: an increase in global risk aversion, a fall in commodity prices, an appreciation of the dollar and a sudden increase in US federal funds rate expectations, which could arise, for example, from a change in the Federal Reserve's communication policy. The effect of negative surprises on growth in EMEs is also calibrated. The choice and size of the shocks analysed are based on relatively recent bouts of volatility, such as the "taper tantrum" (a sharp rise in US federal fund rate expectations in May 2013), the October 2014-March 2015 period (a slump in commodity prices and worsening growth outlook in EMEs, and substantial increase in global risk as a result of China's stock market crash) or the increase in long-term rates and the appreciation of the dollar in April 2018 (see Box 1 for more details).

¹ For a more detailed analysis of the theoretical drivers and efficient management of capital flows, see Estrada *et al.* (2017), "Towards efficient capital flow management", Analytical Articles, *Economic Bulletin*, 1/2017, Banco de España.

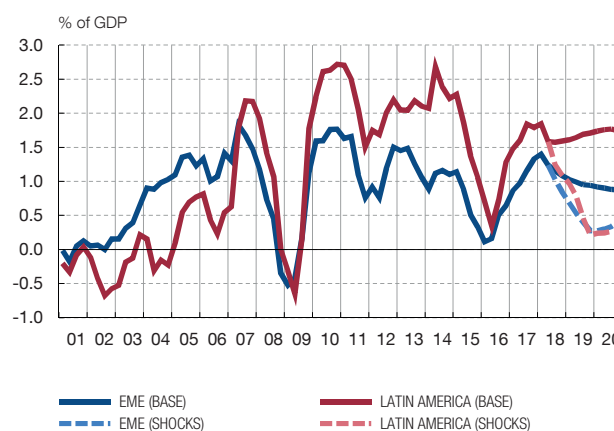
² See *Drivers of capital flows and the role of the investor base in Latin America*, IMF Regional Economic Outlook (2017); *Special Focus: The US Economy and the World*, *World Bank Global Economic Prospects* (2017), and R. Koepke (2018), "Fed policy expectations and portfolio flows to emerging markets", *Journal of International Financial Markets, Institutions and Money*, No. 55, pp.170-194.

The greatest impact on emerging economies overall would be the appreciation of the dollar, although in the case of Latin America, commodity prices would have a comparatively greater effect. If the five shocks were to occur simultaneously, portfolio flows would continue on a very similar path to that of 2014-2015.

1 IMPACT ON PORTFOLIO FLOWS TO EMERGING ECONOMIES



2 IMPACT ON PORTFOLIO FLOWS TO EMERGING ECONOMIES



SOURCE: Banco de España calculations.

- a The simulated impacts refer to a change in a standard deviation in the historical series of each of the variables until the end of the current year, with no changes in the remaining variables, for global risk aversion (to its highest level since 2016 Q1), for two-year US federal funds rate expectations (highest level since November 2007) and for negative growth surprises (similar levels to those at end-2015). A similar fall is assumed for commodity prices to that recorded from mid-2014 and end-2015 (-22%); and, in the case of the dollar, an appreciation that would be similar to that observed between mid-2014 and early 2016 (27%).



The results show that the greatest impact on capital flows to emerging economies would arise in the event of an appreciation of the dollar (a decline of 0.43% in GDP, that is, \$48 billion, an amount similar to the outflows recorded in the summer of 2015). This appreciation would lead to a scaling back of bank flows of a similar magnitude. Higher global aversion to risk would also lead to a substantial fall in portfolio flows (-\$19 billion, -0.17% of GDP), while the other shocks would have less of an impact.³ In Latin American markets (see Chart 3.1), the effect on portfolio flows of global risk aversion and, in particular, of changes in commodity prices, would be proportionally higher than in the other emerging countries, while Latin American markets would be less affected by a dollar appreciation.⁴

Although the shocks have been analysed separately here, in practice, it is unlikely that the dollar would appreciate without an increase in risk aversion or in US federal funds rate expectations, and that this would not, in turn, have repercussions for global growth or commodity prices. The simultaneous impacts of these shocks have therefore been simulated using a BVAR model. The results obtained (see Chart 3.2) indicate that in the scenario of the five aforementioned shocks occurring simultaneously, portfolio capital flows would decrease from 1.24% of emerging economies' GDP in mid-2018 to 0.28% at end-2019, compared with a baseline scenario of 0.94% of GDP. Inflows would therefore be reduced by \$105 billion in 2019, with respect to the latest available data, or by \$73 billion

³ The effect of all these simultaneous shocks (although this assumption has a low probability of occurrence), would be 0.65 % of GDP, or \$72.5 billion, that is, between 40% and 45% of the incoming flows in 2018, according to the figures of the Institute of International Finance (IIF).

⁴ The results for the models estimated by the IMF and the World Bank would be additional outflows of \$40,000 million for all emerging countries (including the effect of contraction of the Federal Reserve's balance sheet, which is not analysed in this article).

with respect to the baseline scenario. For Latin America, the model estimates show a decline in portfolio capital inflows of 1.4% of GDP (\$38 billion), with a very significant effect on commodity prices (0.65% of GDP or \$18 billion).

Conclusions

EMEs have gained prominence as recipients of international capital flows since the onset of the financial crisis in 2008, raising their exposure to the effects of global shocks and to the volatility of the flows received. This volatility has increased partly as a result of a change in the composition of the flows received, from the more stable type (direct investment) to foreign debt, although this general trend is not observed in Latin America, which continues to receive mostly direct investment flows.

Since emerging economies depend increasingly on external flows into debt and the stock market, this article presents estimates of the possible impact of certain risk events on these flows. The results support the argument that, at least in the case of shorter-term flows to emerging economies, external (push) factors are the main drivers. Of these, the strongest seems to be an appreciation of the dollar, together with an increase in global risk aversion although, in the case of Latin America, a slump in commodity prices would have a very negative impact on portfolio flows towards the region.

16.5.2019.

In order to estimate the drivers of capital flows to emerging economies and the impacts of the different variables, three econometric exercises are considered. First, a panel data model with fixed effects using quarterly data is estimated. These quarterly data are extracted from the balance of payments from 1999 Q1 to 2018 Q2 for 23 emerging economies (seven in Latin America, five in Asia, six in Eastern Europe – including Turkey – and five in Africa and the Middle East). By using balance of payments figures, on the one hand, it is possible to estimate the different effects on the different types of capital (direct investment, portfolio investment and bank flows) received by emerging market economies (EMEs) and, on the other, to analyse the different sensitivities between capital flows to Latin America and to other EMEs. The estimation follows the framework of push and pull factors described throughout the text. Thus, included as independent push variables are: global aversion to risk (measured as the US high-yield bond spread), market expectations of US federal funds rates in two years' time, the year-on-year rate of change in the Federal Reserve's balance sheet, commodity prices and the appreciation of the dollar in nominal effective terms. Included as pull factors are: the growth rate differential of industrial production between advanced and emerging economies, Economic Policy Uncertainty's geopolitical risk index, the sovereign credit rating (average of the three large agencies) and the reserves to GDP ratio, as a measure of foreign investors' insurance against a possible capital exodus. The global liquidity indicator of the Bank for International

Settlements (BIS) is included for bank flows, and for direct investment, the slope of the US yield curve (10-year rate minus 2-year rate), the volatility of industrial production (which would approximate the recipient's macroeconomic stability) and a variable which would represent the recipient's institutional quality, the cost (in days) of setting up a new company, as measured by the World Bank.

The results (see Table 1) are in keeping with previous literature and in general the variables are of the expected sign, although some of them are not statistically significant. Since there is a division into two samples (Latin America and other EMEs), it is also possible to calibrate the effect of commodity prices on the region (positive and significant for portfolio and bank flows, compared with a significant negative sign for portfolio flows or non-significant for bank flows of other EMEs) and to qualify the effect of the appreciation of the dollar (negative, but statistically non-significant and lower than in the other EMEs both for portfolio and bank flows).¹

1 The variables representing market size and depth (outstanding debt, stock market capitalisation and degree of share turnover) do not have a significant impact, nor does the change in local stock markets. The inclusion of the US financial conditions index which would subsume the information included in risk aversion, rate expectations, the Federal Reserve's balance sheet and the changes in the dollar, produces the results expected: a tightening of conditions reduces flows to EMEs.

Table 1
DRIVERS OF CAPITAL FLOWS TO EMERGING MARKET ECONOMIES: QUARTERLY MODEL (a)

Variable	Portfolio flows				Bank flows				FDI (**)			
	EMEs	LA (*)	Other	Effect of LA differential	EMEs	LA	Other	Effect of LA differential	EMEs	LA	Other	Effect of LA differential
Global risk aversion	(-)	(-)	(-)	=								
Exc. federal funds	n. s.	n. s.	(-)	=								
Fed balance sheet (y-o-y)	n. s.	n. s.	n. s.	=								
Growth differential	(-)	n. s.	n. s.	=					n. s.	n. s.	n. s.	=
Commodity prices	n. s.	(+)	(-)	LA >	n. s.	(+)	n. s.	=				
Change in \$ NEER	(-)	n. s.	(-)	LA <	(-)	n. s.	(-)	=				
Geopolitical risk index	(-)	n. s.	(-)	=	(-)	(-)	(-)	=	n. s.	(-)	n. s.	LA >
Sovereign rating	n. s.	n. s.	n. s.	=	n. s.	(+)	n. s.	=	(+)	n. s.	(+)	LA <
Reserves (% of GDP)	n. s.	n. s.	n. s.	=					n. s.	(+)	n. s.	LA >
Global liquidity (BIS)					(+)	(+)	(+)	=				
Slope of US yield curve									(-)	n. s.	(-)	LA <
Volatility of industrial production									n. s.	n. s.	n. s.	=
Cost (days) to set up a firm									(-)	n. s.	(-)	=
Observations	1,669	546	1,123		1,766	546	1,220		1,361	434	927	

SOURCE: Banco de España calculations.
NOTES (*) LA: Latin America; (**) FDI: foreign direct investment.

a Panel with fixed effects and robust standard errors using quarterly data from 1999 Q1 to 2018 Q2. Variables with a value of 10% or more are significant. n.s. = non-significant variables.

Second, as an exercise of robustness, the model was re-estimated using the monthly data from the Institute of International Finance (IIF) (which begin in January 2005 or in January 2010 for regional flows) and only contains the figures of gross portfolio inflows. The results are very similar to those of the quarterly model: an increase in global risk aversion, a rise in expectations of US federal funds rates or an appreciation of the dollar would reduce the net flows, whereas the positive surprises in growth of the recipients such as higher commodity prices or a year-on-year increase in the Federal Reserve's balance sheet would lead to more capital flows to emerging markets. These results remain the same vis-à-vis different specifications of global risk aversion, activity growth or US monetary policy (including the financial conditions in that country).

Finally, a quarterly Bayesian Vector Autoregression model (BVAR) with nine variables for portfolio flows (the GDP growth rate differential, commodity prices, geopolitical risk, reserves as a percentage of GDP, sovereign rating, changes in the dollar exchange rate, the US federal funds rate, the size of the Federal

Reserve's balance sheet and global risk aversion) was calibrated to simulate the effects of several global shocks occurring simultaneously.

The shocks considered are based on recent past experience: global risk aversion is estimated to increase by one standard deviation (to its highest level since 2016 Q1), similarly, two-year federal funds rate expectations are expected to increase (to their highest level since November 2007). Negative growth surprises in EMEs are expected to stand at similar levels to those in 2015. A similar fall is assumed for commodity prices to that recorded from mid-2014 to end-2015 (-22%). Finally, the appreciation of the dollar would be similar to that observed between mid-2014 and early 2016 (27%). The shocks occur during 2019. The shocks are the same in the BVAR model, except in the case of US federal funds rates. Two 25 bp increases were simulated for these rates until end-2019. The shocks take place between 2018 Q2 and 2019 Q4. After this point in time, the variables revert to their historical average, which they reach at end-2021, or to zero (change in the dollar exchange rate).