

## International bank lending to emerging market countries: explaining the 1990s roller coaster<sup>1</sup>

One of the distinctive features of global financial market activity in the 1990s was the remarkable growth in international bank lending to developing countries and its sharp retrenchment following the financial crisis in Asia in the second half of 1997. The large scale of capital flows to emerging market countries and their subsequent reversal have generated extensive research since the early 1990s. Yet relatively few studies have focused specifically on the determinants of international bank lending, which has been the main component of these flows.<sup>2</sup> This special feature systematically examines the determinants of changes in the claims of BIS reporting banks on the largest emerging market countries in Asia and Latin America. The work is guided by the hypothesis that lending flows tend to be driven by economic fundamentals but that other factors can also at times be influential. Adopting a well known approach distinguishing between external (“push”) and internal (“pull”) determinants of lending flows, preliminary results show that both types of factors influence international bank lending. Additional tests suggest that international bank lending may have depended on the prevailing exchange rate regime.

### What goes up can come down

International bank lending to developing countries increased sharply between the end of 1990 and the end of 1997. The growth in bank lending was most pronounced in Asia, followed by eastern Europe and Latin America (Graph 1). By comparison, lending to Africa and the Middle East (not shown in the graph) was nearly stagnant.<sup>3</sup>

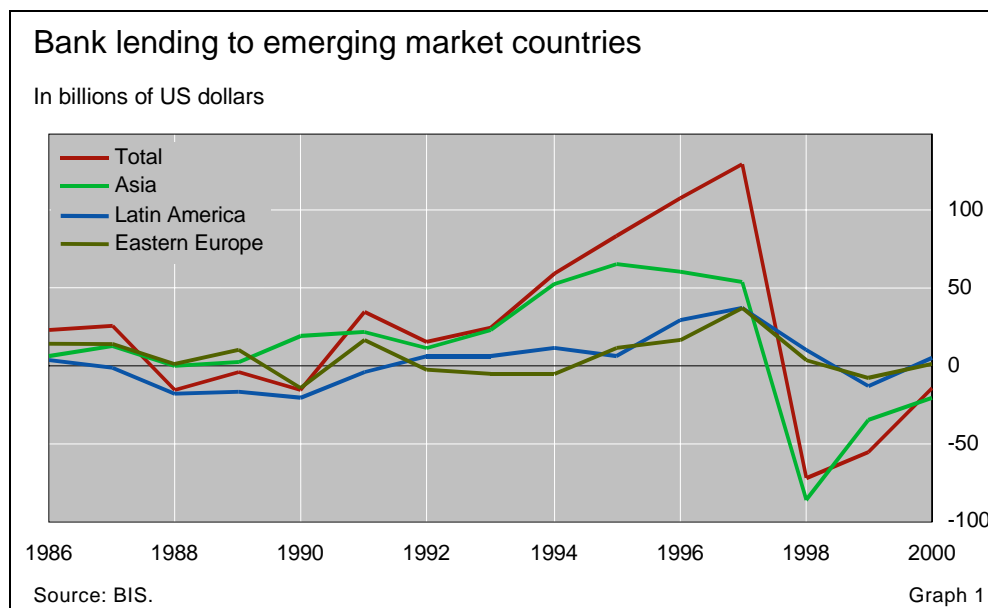
Pronounced  
increase in bank  
lending ...

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<sup>1</sup> We would like to thank Florence Béranger and Philippe Hainaut for their help in assembling and preparing much of the data used in this special feature. The views expressed in this article are those of the authors and do not necessarily reflect those of the BIS.

<sup>2</sup> Notable exceptions are Buch (2000) and Goldberg (2001).

<sup>3</sup> The broader issue of globalisation in the international banking market is discussed in a special feature on page 41 of this *BIS Quarterly Review*.



... mainly in short-term claims

Much of the increase in lending over that period resulted from a pronounced rise in short-term claims (Graph 2). This trend has been attributed to a number of factors. These include the growth of trade financing, the liberalisation of financial sectors, the establishment of offshore centres, the advantages offered by short-term loans in the monitoring and management of international exposures, and the so-called “arbitrage” opportunities created by a combination of high local nominal interest rates and fixed or nearly fixed exchange rates.<sup>4</sup> It has also been suggested that the prevailing regulatory framework may have played a role in encouraging short-term lending flows.<sup>5</sup>

Short-term loans highest in Asia

The proportion of short-term loans was the highest in Asia, reflecting the rapid development of local and offshore banking systems and possibly interest rate “arbitrage” by international banks. By contrast, the share of short-term lending rose from a lower level in Latin America, owing to the higher proportion of long-term loans to public sector entities and the impact of earlier rescheduling agreements.

Sharp expansion of activity by European lenders

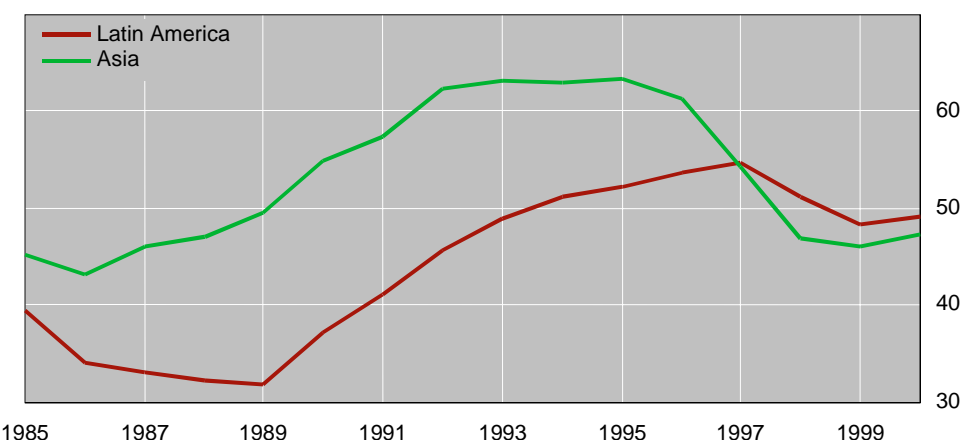
Another notable trend was the sharp expansion of activity by European banks (Graph 3). That expansion, particularly in Asia and Latin America, has been attributed to a desire on the part of European banks to diversify away from regions where they have traditionally played a dominant role (Africa, eastern Europe and the Middle East), the growth of foreign direct investment

<sup>4</sup> While such “carry trade” strategies were commonly referred to as “arbitrage”, this is a misnomer since arbitrage transactions are by definition riskless. For a more detailed treatment of related issues, see Moreno et al (1998).

<sup>5</sup> One view is that the 1988 Basel Capital Accord may have encouraged short-term lending to developing countries. Under the Accord, international bank claims of up to one year to non-OECD countries carry a 20% risk weight for capital adequacy purposes, while longer-term loans carry a 100% weight. A working group of the Basel Committee on Banking Supervision (1999) did not find conclusive evidence to this effect.

## Maturity distribution of international bank lending to emerging market economies

Short-term loans<sup>1</sup> as a percentage of total lending



<sup>1</sup> Loans with a residual maturity of up to one year.

Source: BIS.

Graph 2

and trade by European companies, and low returns in traditional business activities in a context of weak European growth.<sup>6</sup> At the end of 1997, European banks had the highest exposure to emerging market countries. They were also the most geographically diversified.

Meanwhile, North American banks expanded their lending activity at a relatively modest pace. This cautious attitude probably resulted from the experience of the early 1980s, when their balance sheets were dramatically weakened by problem loans to Latin America. North American banks returned to more active lending to that area between 1992 and 1994 but slowed down again as the Mexican “tequila” crisis at the end of 1994 led to a major disposal of high-yielding Mexican short-term government debt securities. US bank lending to Latin America remained subdued thereafter, with banks focusing their efforts on areas where they had hitherto played a more limited role (such as Asia, Africa, eastern Europe and the Middle East).

Comparatively modest new lending by North American banks

The behaviour of Japanese banks contrasted sharply with that of other major groups. Although the stock of loans held by Japanese banks was initially large and increased in the early 1990s, their share of global bank claims followed a declining trend. Mounting losses on domestic loans and pressures to boost capital ratios reduced their eagerness for international lending. Japanese banks returned to more active international lending in 1994 and 1995 (largely to Asia). However, the appearance of a significant premium on the financial liabilities of Japanese banks, owing to growing concerns about the strength of the Japanese financial system, brought a renewed shift away from international

Japanese lenders show reduced enthusiasm

<sup>6</sup> In the case of German banks, low returns may also have resulted from strong competition from state-owned banks. Such banks reportedly capitalised on state support to achieve high credit ratings and, as a result, a lower cost of funds than banks not enjoying such support.

business. With almost 80% of their international loans being booked on Asian residents, Japanese banks had the largest exposure to Asia of any single national group of banks.

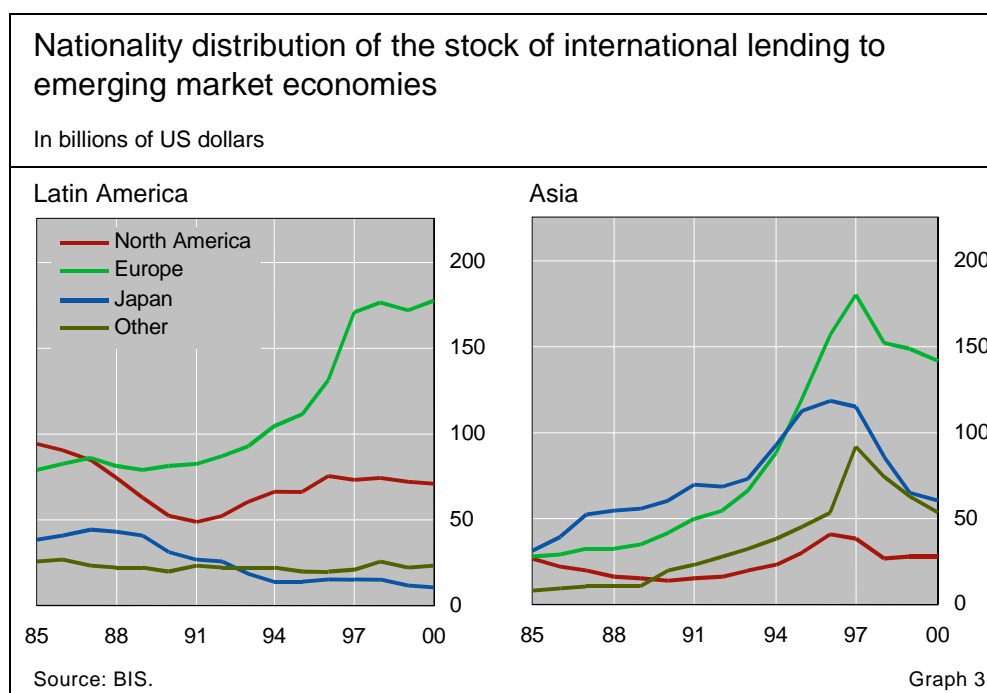
The Asian crisis that broke in July 1997 led to a worsening of conditions in the international banking market. Although total lending to emerging market countries reached a new peak at the end of 1997, retrenchment had already been set in motion. While banks quickly moved to reduce their claims on Asian residents from the second half of 1997 (largely through the non-renewal of short-term loans), they further increased their exposures to Latin American and eastern European borrowers in the first half of 1998. However, from the second half of 1998, all regions, except Africa and the Middle East, were affected by the retrenchment in international lending that followed the Russian debt moratorium. The decline in lending activity reflected not only a reduced willingness to lend but also a weaker demand for loans, particularly in Asia. In this region, the shift to current account surpluses, corporate deleveraging and inflows of equity investment made external bank financing less necessary. Overall, international bank lending contracted substantially from the end of 1997. While the reduction in claims was concentrated in Asia, lending to other regions stagnated. Lending activity has not recovered since.

The recent financial crises have challenged previously held views concerning the relative stability of various types of capital flows. Bank lending had long been assumed to be more stable than capital market financing, substituting for securities issuance during periods of market stress (World Bank (2000, 2001)). This had been attributed to the greater emphasis placed by lending banks on long-term economic fundamentals, not least owing to the limited potential to resell loans in the secondary market (Sarno and Taylor

An initial cutback in lending to Asia in late 1997 ...

... is followed by a broader retrenchment

Recent crises show volatility of bank lending



Net capital flows to emerging market economies											
	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Total private capital flows	42.8	97.4	107.0	128.6	142.3	211.4	224.7	115.2	66.2	67.4	36.4
<i>of which:</i>											
Private direct investments	19.0	32.2	35.7	57.9	81.0	95.8	119.5	141.3	151.6	154.6	141.9
Private portfolio investments	-0.9	25.1	62.7	76.8	105.0	41.4	79.6	39.4	0.3	4.8	17.3
Other private capital flows <sup>1</sup>	24.6	40.1	8.5	-6.1	-43.7	74.2	25.6	-65.6	-85.6	-91.9	-122.8
<sup>1</sup> Includes bank lending.											
Source: IMF, <i>World Economic Outlook</i> .											Table 1

(1999)). However, the rising share of short-term bank lending in the first half of the 1990s critically undermined this assumed stability since the greater weight of short-term loans made it easy for banks to rapidly retrench their exposures (Table 1). Cutbacks in short-term credit lines contributed to the increase in market volatility seen during the Asian crisis, creating particularly acute problems for countries in the area.

## Analytical framework

The large scale of capital flows to emerging market countries since the early 1990s and the extent of their reversal from 1997 have stimulated an extensive literature on the determinants of such flows. The surge in flows and their subsequent reversal have been attributed to the interaction between a number of factors, including: (a) changes in global macroeconomic conditions; (b) changes in the economic fundamentals of recipient countries; (c) herding behaviour among lenders; (d) the growing importance of securitisation and institutional investment; (e) the liberalisation of capital account restrictions and financial sectors in emerging market countries; and (f) underpricing of risk resulting from implicit or explicit government guarantees.<sup>7</sup>

While the theoretical literature has considered a wide range of possible factors, much of the empirical work has adopted a framework distinguishing between the external (“push”) and internal/regional (“pull”) determinants of capital flows (Calvo et al (1993), Chohan et al (1998), Fernandez-Arias (1996), Montiel and Reinhart (1999)).

External factors are those deemed to be outside the control of a typical borrowing country. They encompass structural and cyclical elements leading lenders and investors in mature financial markets to diversify their portfolios internationally. Such elements operate mainly through a temporary reduction in

Extensive literature on determinants of capital flows ...

... distinguishing between external and internal factors

External factors are those outside the control of borrowing countries

<sup>7</sup> This special feature focuses principally on the first two sets of factors.

the attractiveness of industrial country assets, as may result from lower returns on investments or depressed cyclical conditions. Moral hazard considerations also come into play to the extent that implicit or explicit guarantees by lending country governments or international financial institutions can lead to an underpricing of the risk of liabilities issued by borrowers in emerging market countries.<sup>8</sup>

Internal factors relate to domestic policies and performance

Internal factors, which are generally related to domestic economic policies and performance, work through expectations of sustained improvements in the risk-return trade-off (increased rate of return or reduced risk) of investment projects in borrowing countries. These include broad improvements in macroeconomic policies, such as a stabilisation of inflation combined with fiscal adjustment, short-run policies that boost the expected rate of return on local financial assets, and institutional reforms that increase the openness of domestic financial markets.

While much of the evidence gathered in the first half of the 1990s found that US interest rates and cyclical conditions played a significant role in determining capital flows to emerging markets, later studies have generally failed to confirm this relationship (see, for example, World Bank (1997)).

More recent studies emphasise the complementarity of factors

More recent studies have rather tended to emphasise the complementarity of push and pull factors, with the first set of factors determining the timing and magnitude of flows and the second their geographical distribution (Montiel and Reinhart (1999), Dasgupta and Ratha (2000)). Some researchers, such as Eichengreen and Mody (1998), have also highlighted caveats concerning the determinants of capital flows, arguing that any study should consider both the price and the volume impact of changes in external determinants.

A smaller number of studies have adopted alternative frameworks, such as “gravity” models (Gosh and Wolf (2000), Portes et al (2001)). Such models generally posit that financial flows, just like trade flows, depend crucially on distance or relative economic importance, which act as a proxy for informational frictions and level of development respectively.

On balance, the prevailing view in the early 1990s was that cyclical factors were the driving force behind capital flows to emerging markets. However, work carried out in the second half of the decade suggests that structural forces, such as global financial integration, and more complex dynamics were at play as well.

## Push or pull?

Both push and pull factors affect bank lending

As discussed in the box on page 59, our “baseline” equation shows that both push and pull factors had an impact on international bank lending in the period under consideration (1985–2000). Overall, our results contrast somewhat with

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<sup>8</sup> Deposit insurance schemes in lending countries and implicit guarantees by borrowing countries in the form of fixed exchange rate regimes are examples of regulatory-induced push and pull factors.

those of the early literature on international capital flows to emerging markets but show some similarity with more recent studies.

Looking at the various push factors, we find that real economic activity in major industrial countries shows a weak positive correlation with international bank lending. This positive relationship results from a combination of strong growth in the major lending countries in the 1990s (with the notable exception of Japan) and large lending flows until the end of 1997.<sup>9</sup> Such a finding would seem to indicate that robust economic activity in the major lending countries was expected to generate favourable spin-offs on emerging market countries, creating incentives among lenders to increase cross-border exposures. This result is in contrast with the hypothesis presented in earlier studies (such as Calvo et al (1993) and Hernandez and Rudolph (1995)), which posited that a deceleration of economic activity in the main lending countries led banks to seek external lending outlets.

Weak correlation between lending countries' GDP and banking flows ...

In addition, there is evidence of a positive relationship between real short-term interest rates in lending countries and capital flows to emerging economies. Such a relationship is also in contrast with the findings of the early literature on capital flows to developing countries. The intuition behind this factor was that an economic slowdown in developed economies was associated with lower expected domestic returns, as proxied by real short-term interest rates. Under such circumstances, banks were assumed to seek higher returns through a diversification of their portfolios to higher-yielding emerging market assets. Our estimates seem to suggest that any such diversification effect was outweighed by global investor confidence resulting from the positive impact of robust lending country growth on emerging market country activity. Thus, while strong economic growth in lending countries created upward pressure on real interest rates, lending flows remained high for much of the 1990s. Moreover, the financial crises, which occurred at the end of the decade, were followed by a drying-up of new bank loans and some reduction in policy rates in the main lending countries. This probably also helps to account for the positive relationship between interest rates and lending.

... but strong positive impact of their real interest rates

International lending seems to be affected by shifts in risk aversion in lending countries. In our equation, the attitude of lenders towards risk is proxied by the risk premium on BBB-rated US corporate securities. A widening of the premium reflects greater risk aversion, which is systematically associated with a decline in lending flows. However, it should be noted that a wider risk premium is not exclusively related to a change in risk attitude since it could also reflect a broad increase in default risk resulting from an economic downturn in lending countries.<sup>10</sup>

Lenders' attitude towards risk also affects banking flows

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<sup>9</sup> Some studies have also used the output gap in industrialised countries but we found that it was highly correlated with real short-term interest rates. Given that this could have created problems of collinearity, we chose to use a Hodrick-Prescott decomposition of real GDP.

<sup>10</sup> Some authors provide evidence on the procyclicality of credit risk. See Borio et al (2001) for a more extensive discussion.

## Empirical methodology and estimation results

### *Dependent variable*

Our dependent variable is the change in international bank claims, as reflected in the BIS consolidated international banking statistics. These statistics are well suited to an analysis of the determinants of bank lending since they enable us to look at the pattern of exposures by nationality of lenders and borrowers. Such information is not available from other data sources on international lending, such as the IMF's balance of payments statistics<sup>①</sup> or the World Bank's debtor reporting system data.<sup>②</sup> Given that the BIS consolidated data consist of stock figures expressed in US dollar terms, flows were created by differencing the original semiannual stock numbers between 1985 and 2000.<sup>③</sup>

On the lending side, we only considered the most important lending countries, namely: the United States, Japan, the United Kingdom, Germany, France, Italy and Spain. The actual dependent variable used for estimation was an aggregate of loans by all lenders to each of the following countries: Argentina, Brazil, Chile, Indonesia, Korea, Malaysia, Mexico, the Philippines, Thailand and Venezuela. Claims on these countries accounted for about 55% of our lenders' total claims to developing countries at end-June 1997 (before the emergence of a full-blown crisis in Asia).

### *Explanatory variables*

We assembled a set of explanatory variables, drawing from the empirical literature on international capital flows. In our analysis, we distinguished between push and pull factors.<sup>④</sup>

*Push factors:* (i) Based on the hypothesis that weaker economic activity in lending countries leads banks to seek external lending outlets, we used the dollar value of aggregate real GDP of all lending countries as an explanatory factor. In order to avoid potential estimation problems related to the non-stationarity of real GDP, we conducted a Hodrick-Prescott decomposition of the semiannual series. (ii) To account for lending banks' need to seek higher returns abroad, we used real short-term interest rates in lending countries. These are represented by a simple average of monthly data on three-month nominal interest rates in each lending country deflated by the relevant consumer price index. (iii) To test for whether the risk attitude of lenders is a determinant of lending,

## Determinants of aggregate international bank lending

	Coefficient	t-stat	Significance level
Real GDP in lending countries	0.07	1.63	0.10
Real short-term interest rates in lending countries	0.22	2.84	0.00
Indicator of risk aversion <sup>1</sup>	-0.30	-5.39	0.00
Bilateral trade	0.36	4.77	0.00
Real GDP in emerging economies	0.09	2.28	0.02
Bilateral exchange rate volatility <sup>2</sup>	-0.15	-3.41	0.00
Brady operations	-0.27	-5.24	0.00
Ratio of external debt to GDP in emerging economies	-0.11	-3.12	0.00

<sup>1</sup> Spread between the yield on BBB-rated corporate bonds and that on US Treasury securities. <sup>2</sup> First lag of the variance of the bilateral exchange rate. The adjusted R-squared for this regression is 0.24 and the Durbin-Watson test is 1.67.

<sup>①</sup> Despite their comprehensive coverage of aggregate capital flows, the IMF statistics do not reveal the source of the inflows. <sup>②</sup> The World Bank data combine both debtor country data on long-term non-guaranteed private debt and creditor data on short-term debt exposures but again do not provide information on the origin of lending. <sup>③</sup> The lack of a currency breakdown does not allow exchange rate adjusted changes to be computed since the computed flows can result either from a genuine change in lending activity or from a change in exchange rates. <sup>④</sup> The data for explanatory variables come from various sources: *International financial statistics* (IMF), *Global development finance* (World Bank) and the joint BIS-IMF-OECD-World Bank statistics on external debt.

we created a “risk aversion” variable by taking the yield difference between BBB-rated US corporate bonds and US Treasuries.

*Pull factors:* (i) Trade financing has traditionally been one of the main avenues for the international expansion of lending. We constructed a bilateral trade variable by aggregating the quarterly trade flows of all lending countries to each of the borrowing countries. The flows were cumulated into semiannual series. (ii) Since rapid or improving growth in emerging markets may be viewed positively by lenders, we used the dollar value of real GDP in borrowing countries. The data were detrended through a Hodrick-Prescott decomposition. Given the lack of quarterly series for some emerging market countries, we conducted a linear interpolation of annual data to obtain semiannual series. (iii) The volatility of a borrowing country’s bilateral exchange rate is an indicator of financial instability. This was represented by an average of the annualised variance of monthly bilateral exchange rates between each single borrowing country and each lending country. (iv) A high level of external debt is assumed to lead to lower bank lending. The ratio of external debt to GDP was chosen in preference to a measure of the current account deficit because of potential endogeneity problems. The series were obtained by interpolating the annual debt to GDP ratios of individual borrowing countries. (v) Lastly, to control for Brady debt reduction operations, we used dummy variables for Argentina, Brazil, Mexico, the Philippines and Venezuela. These dummies take a value of one in the years when Brady operations were implemented and zero in other periods.

#### *Estimation methodology*

Panel data techniques were used. In order to avoid the loss of efficiency resulting from covariances between lending flows, we estimated our model by seemingly unrelated regressions.<sup>®</sup> Moreover, to control for differences in the economic importance of countries and the magnitude of shocks, we normalised each variable by subtracting its mean value from its actual value and by dividing the resulting difference by the standard deviation of the variable.

#### *Basic estimates*

Our estimates, which are presented in the box table, suggest that both push and pull factors have an impact on international lending. The indicator of risk aversion in lending countries is a significant push factor. By contrast to earlier studies, we found that real GDP and real short-term interest rates in lending countries demonstrated a procyclical behaviour. The pull factors are all significant, and include bilateral trade flows between lending and borrowing countries, the economic cycle in emerging market countries, the volatility of bilateral exchange rates, and the ratio of external debt to GDP of emerging market countries. These results are discussed in greater detail on pages 57–62.

#### *Testing for the impact of exchange rate regimes*

We also investigated whether other explanatory factors, such as the type of exchange rate regime, may have encouraged lending flows. We modified the baseline equation by removing the exchange rate variance and replacing it with three new variables. The first variable is the differential between nominal short-term interest rates in lending and borrowing countries. The second is a dummy accounting for the type of exchange rate regime. To construct this variable, we used the methodologies developed by Calvo and Reinhart (2000) and Bailliu et al (2000), dividing such regimes into three categories: fixed, intermediate and floating. The third factor is an interactive dummy between the interest rate differential and the exchange rate regime. This framework enables us to analyse the marginal effect on lending of each factor, with the interactive dummy accounting for the relevance of carry trade strategies. Our results show that fixed and tightly managed exchange rate regimes tend to attract inflows, while floating rate ones inhibit them. Of note, carry trade strategies seem to have played a role in countries with tightly managed exchange rate regimes.

We conducted a range of additional tests, including whether there was a difference in the behaviour of short- and long-term claims, whether there was an asymmetry between inflows and outflows, and whether there was any evidence of bandwagon effects. These issues are discussed in greater detail in Jeanneau and Micu (2002).

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<sup>®</sup> Using the generalised least squares estimator proposed by Zellner (1962).

Trade plays a role in explaining lending ...

With respect to the various pull factors, our results seem broadly in agreement with the existing literature. Bilateral trade between lending and borrowing countries is a significant explanatory factor. The positive correlation between trade and bank lending can be explained by the fact that trade financing has traditionally been one of the main avenues for the international expansion of lending. In addition, a stronger trading relationship helps in reducing potential informational asymmetries between lenders and borrowers, which would act to encourage lending.

... as does improving growth in borrowing countries ...

Higher economic activity in emerging market countries was positively related to international bank lending. There are two main channels through which this might operate. First, rapid or improving consumption, investment and trade tend to attract new lending. Second, better economic prospects are viewed favourably in country risk analysis. Of course, much depends on whether growth is perceived to be sustainable or not (something we did not test).

... while exchange rate volatility has a negative effect

Volatility of the nominal exchange rate in borrowing countries had an inhibiting effect on lending.<sup>11</sup> This is not surprising since unusual exchange rate volatility is likely to indicate that the country is experiencing instability or financial turmoil. In particular, a high foreign exchange exposure of banking systems in emerging economies increases their financial fragility.

Debt reduction operations are significant

The dummy variable for Brady debt reduction operations was highly significant in explaining aggregate lending. This does not mean that Brady-type operations lead to lower banking flows. Rather, Brady debt operations result in a writing-down of bank claims, which translates into lower or negative lending flows when the stock series are differenced.

High levels of external debt inhibit new lending

As expected, high levels of external debt in emerging market countries lead to a reduction in bank lending.<sup>12</sup> The ratio of external debt to GDP is an important measure of creditworthiness. The LDC debt crisis of the early 1980s and more recent crises in emerging market countries have had a significant impact on banks' assessment of country risk. In the wake of these crises, banks became much less enthusiastic about lending to high-risk countries. The risk associated with high levels of external debt refers to either the imposition of exchange rate controls or debt moratoriums, or to other political and social risks that could be associated with the likelihood of a default on external debt.

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<sup>11</sup> Exchange rate volatility can result from both strong inflows and strong outflows of funds. In order to correct for this potential endogeneity, we used the first lag of the variance of the foreign exchange rate.

<sup>12</sup> The level of external debt was chosen in preference to a measure of the current account deficit because of a potential endogeneity of the current account. Moreover, the current account is a less reliable indicator because of its unstable relationship to lending. Indeed, in cases where a current account deficit is combined with sustained economic growth and a favourable policy environment, one can expect to see an inverse relationship with international bank lending (ie a negative current account balance is associated with positive bank flows). However, in cases where lenders begin to fear that the current account is becoming unsustainable, bank lending can easily dry up.

## The role of exchange rate regimes

In our baseline equation, we analysed the impact of exchange rate volatility on international bank lending and found that high exchange rate volatility had an inhibiting effect on lending flows. Since some countries maintained fixed rate regimes for much of the estimation period, we extended our analysis to see whether the type of exchange rate regime may have had an impact on lending.

The countries considered in our study had a variety of exchange rate arrangements. Several countries had tied their exchange rates implicitly or explicitly to that of a large industrialised country (mainly the United States), while others had a variety of floating rate regimes (from tightly managed “crawling” pegs to fully floating rates). The financial crises in the second half of the 1990s led many countries to abandon de facto fixed rate arrangements (with the exception of Malaysia, which fixed its exchange rate and imposed exchange controls in 1998).

An analysis of the influence of exchange rate regimes is of interest because the existence of de facto fixed rate regimes in Asian countries could have created a type of moral hazard. Specifically, such exchange rate arrangements may have worked as an implicit guarantee that encouraged domestic investors to speculate on the often wide interest rate differential between domestic and international rates (or on booming local asset prices) by borrowing from banks abroad to invest in local financial markets.<sup>13</sup> Investment strategies involving borrowing in a low interest rate currency and investing in a high interest rate one, with a combined bet of exchange rate stability, may be characterised as “carry trades”.

We extended our baseline equation to account for the possibility of such moral hazard effects (a short description of the methodology is presented in the box). The results of this new regression show that the interest rate differential is by itself not a statistically significant explanatory factor (not shown in the box table). Nonetheless, it may be the case that investors were taking positions in other domestic assets for which expected returns were not captured by our interest rate differential variable. Moreover, fixed and tightly managed exchange rate arrangements appear to have encouraged lending flows, while floating rate regimes inhibited them. Our statistical tests also show that carry trade strategies seem to have played a role in countries with tightly managed exchange rate regimes. This was particularly true for the Asian countries considered in our study.

A variety of exchange rate regimes

Fixed rate regimes may have encouraged lending ...

... which appears to be confirmed by our tests

Tightly managed regimes also encouraged carry trades

## Conclusions

This special feature investigated the role of push and pull factors in explaining bank lending to emerging market economies. We attempted to use the wealth of information contained in the BIS consolidated international banking

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<sup>13</sup> Such lending strategies were probably more relevant for short-term than for long-term bank lending since long-term loans tend to depend more on fundamentals.

statistics, a source of data that has not yet been considered extensively in the empirical literature on international capital flows. The BIS statistics are particularly suited to this type of analysis because they provide information on the origin as well as the destination of funds.

Our preliminary results contrast somewhat with those of the early literature on international capital flows to emerging markets but show some similarity with more recent studies. We found that both push and pull factors had a significant impact on international bank lending. However, evidence concerning two of the most widely discussed push factors, namely real GDP and real interest rates in lending countries, shows that such variables exhibited a procyclical rather than a countercyclical influence on international bank lending. Stronger growth and higher short-term real interest rates in lending countries are associated with larger lending flows. Our findings concerning pull factors are broadly in line with those of other studies.

Moreover, other factors, such as the type of exchange rate regime, seem to have played an explanatory role. Additional tests show that fixed and tightly managed exchange rate regimes tend to encourage bank lending, while floating rates have an inhibiting influence. They also show that carry trade strategies appear to have played a role in countries with tightly managed exchange rate regimes.

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