Cross-border bank lending to emerging market economies[1]

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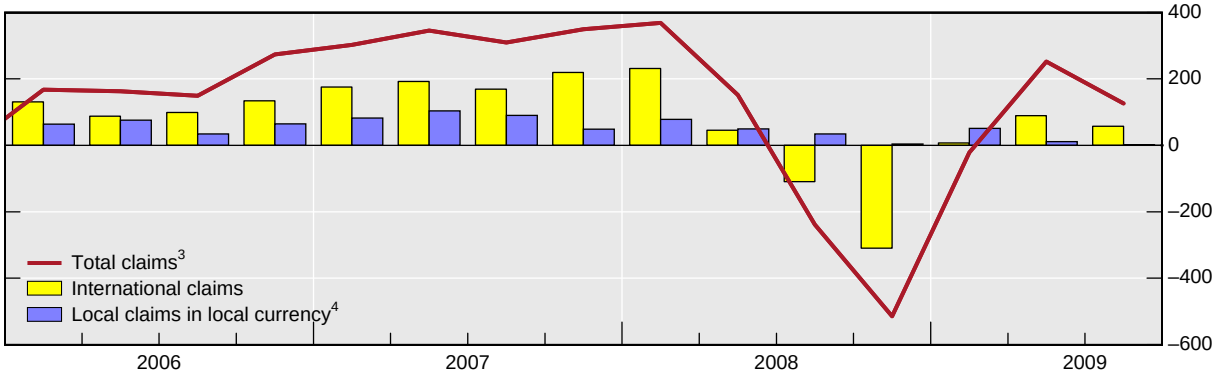
The global financial crisis shook the foundations of international banking and finance and put the international banking system under intense stress. Many financial markets became dysfunctional, and many international banks went bankrupt. Although the crisis originated in advanced economies, it quickly moved to emerging market economies (EMEs), particularly in the aftermath of the collapse of Lehman Brothers. Cross-border bank lending proved to be one of the major financial channels through which stresses in the international financial system were transmitted to individual EMEs. This paper examines cross-border bank lending during the crisis. It also aims to understand the role played by international banks and hopes to provide lessons for thinking about economic policy.

Cross-border lending to EMEs declined steeply during the crisis. Economies and banks relying on wholesale funding were hit especially hard. This decline raises many questions for policymakers – perhaps the most important one concerns the drivers of the decline.

Graph 1

BIS reporting banks' consolidated lending to EMEs (adjusted)[1]

Changes in stocks,[2] in billions of US dollars



[1] Emerging market consolidated positions of banks headquartered in 30 reporting countries. [2] Quarterly difference in outstanding stocks. [3] Sum of international claims and local claims in local currency (unadjusted); international claims comprise cross-border claims in all currencies and local claims in foreign currencies; local claims relate to those booked by reporting banks' foreign offices on residents of the country in which the foreign office is located. [4] Adjusted for exchange rate movements by converting all changes in local claims at the exchange rate prevailing in Q1 2009. Note that total claims (red line) are computed using unadjusted local claims.

Source: BIS consolidated banking statistics on an immediate borrower basis.

Although the decline in cross-border lending is necessarily linked to the international banks which provide those loans, a careful look suggests a more nuanced picture of their role. In particular, even though international lending fell substantially during the crisis, there was a slight increase in domestic currency loans provided by international banks to local affiliates (Graph 1).[2] Based on consolidated claims of BIS reporting banks, Graph 1 contrasts

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[1] Prepared by Elod Takats. Research assistance was provided by Pablo Garcia-Luna, Jhuvesh Sobrun and Agne Subelyte.

[2] As documented in detail in the *BIS Quarterly Review*, in particular in Gyntelberg et al (2009), Baba et al (2009) and Avdjiev et al (2009).

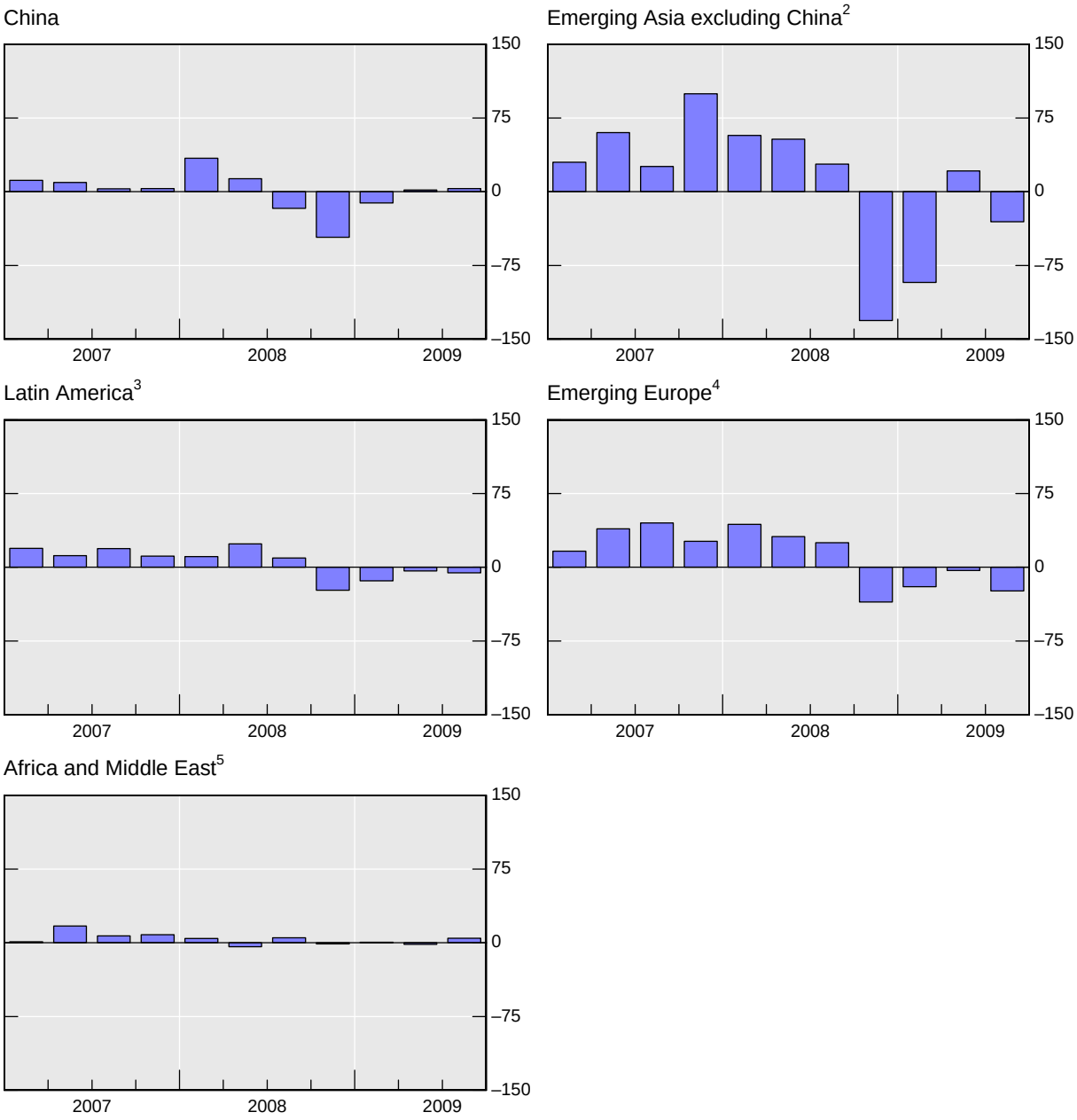
international claims (the sum of cross-border and local lending denominated in foreign currency – in yellow) and the local claims of their affiliates in local currency (in blue).

The heterogeneity of international banks may reveal further nuances. As the example of Mexico suggests, centralised international banks were perhaps more likely to respond to local market disturbances and limit lending than decentralised ones. The first section of this paper discusses the relevant developments in the organisation of international banking in further detail.

Graph 2

Reversal of financial inflows[1]

Quarterly flows, in billions of US dollars



[1] External loans of BIS reporting banks vis-à-vis EMEs; estimated exchange rate adjusted changes. [2] Hong Kong SAR, India, Indonesia, Korea, Malaysia, the Philippines, Singapore and Thailand. [3] Argentina, Brazil, Chile, Colombia, Mexico, Peru and Venezuela. [4] The Czech Republic, Hungary, Poland, Russia and Turkey. [5] Israel, Saudi Arabia and South Africa.

Source: BIS.

There is also considerable geographic heterogeneity (Graph 2). Different regions have experienced very different economic developments, which – as an important demand factor – could explain some of the outcomes. For instance, financial flows to China have stabilised faster than in the rest of emerging Asia. However, it seems that there are some common factors across regions which are not fully explained by economic fundamentals. For instance, financial flows have reversed sharply both in booming China and in emerging Europe. This could potentially be explained by supply factors.

The second section of this paper examines the supply and demand factors in cross-border lending, and finds that supply factors were the main drivers in the fall in cross-border bank lending to emerging markets. The demand for cross-border bank lending also declined, but it played a much smaller role. This contrasts with a much more balanced impact prior to the crisis. The section examines further, more detailed, evidence from some particularly affected countries. Certain well-performing economies, such as China or India, faced a withdrawal of cross-border lending which was unexplained by credit demand factors. Nevertheless, supply effects were not uniformly negative: for instance, parent banks seem to have supported banking operations in Hungary during the financial crisis. This heterogeneity in experiences suggests that a nuanced view might be appropriate for assessing the role of international banks before and during the global financial crisis.

The remainder of the paper is organised as follows: the third section examines the types of cross-border lending and the most affected sectors. The fourth section documents the available evidence on lending conditions. The fifth section examines the role of parent banks and the final section concludes with implications for the future.

1. The organisation of international bank lending

The changing role and organisation of international banks seems to be a major factor in cross-border bank lending. Three main stylised facts regarding the changes in international banking appear to have been relevant for cross-border lending to emerging markets in the last two decades.

First, foreign banks became major players in the domestic financial markets of most emerging markets. By the end of 2008, total bank lending of foreign banks and their affiliates exceeded US$ 1,500 billion in emerging Asia, US$ 900 billion in emerging Europe and US$ 800 billion in Latin America.

Second, the expansion of international banks mainly took the form of increased domestic currency lending by local affiliates, especially in Latin America (Graph 3). This implies that cross-border bank lending became relatively less important in those regions. In essence, many of those subsidiaries operate almost as local banks – with foreign ownership. Furthermore, currency mismatches were also limited in those regions. Finally, domestic currency lending by local affiliates suggests that when thinking about the role of international banks aside from cross-border lending, a wider context also needs to be considered.

However, somewhat exceptionally, emerging Europe remained largely reliant on cross-border lending. Such reliance, especially on cross-border wholesale funding, exposed the banking sector to the risks of sudden stops. The risks were exacerbated by foreign currency loans creating currency mismatches. However, foreign bank participation needs to be evaluated by assessing long-term impacts, as focusing solely on the crisis period could be misleading. For instance, the Magyar Nemzeti Bank notes that increasing foreign bank presence together with bank privatisation improved the functioning of the banking sector in Hungary.

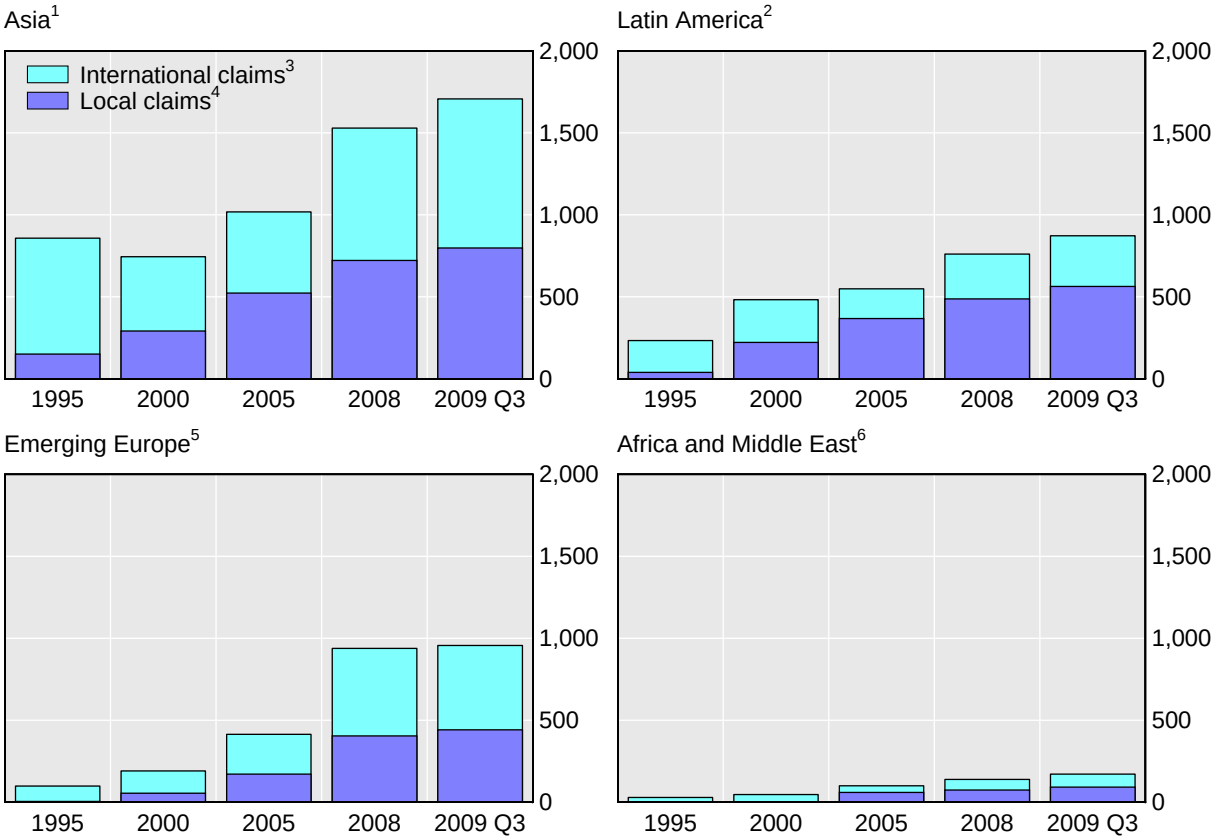
Third, two distinct models of international banking have emerged, creating substantial heterogeneity in cross-border bank lending and bank behaviour. On the one hand, some

international banks centralised liquidity management, capital structure and lending decisions (eg Deutsche Bank and UBS), linking emerging market activities more closely to the aggregate lending decisions of the bank. On the other hand, some banks decentralised these activities, managing liquidity separately (eg BBVA and HSBC). Of course, there are many dimensions to the structure of international banking, and the broad characterisation referred to above could be further refined for policy purposes.

Graph 3

Lending from BIS reporting banks

Stocks, in billions of US dollars



[1] China, Hong Kong SAR, India, Indonesia, Korea, Malaysia, the Philippines, Singapore and Thailand. [2] Argentina, Brazil, Chile, Colombia, Mexico, Peru and Venezuela. [3] Consolidated cross-border claims in all currencies and local claims in non-local currencies. [4] Local currency positions of reporting banks' foreign offices with local residents. [5] The Czech Republic, Hungary, Poland, Russia and Turkey. [6] Israel, Saudi Arabia and South Africa.

Source: BIS.

The structure of international banking could have been important in the crisis. Preliminary evidence from Mexico suggests that decentralised banks provided more stable lending during the crisis.[3] Bank Negara Malaysia also notes that requiring foreign banks to be locally incorporated and committing capital locally limited any contagion effects. Hence, it is possible that distressed centralised banks could not provide adequate lending to relatively robust emerging markets. However, in other cases, centralised banks might have been able to provide support for severely distressed markets by quickly reallocating liquidity.

[3] Although Mexican legislation sets rigorous limits on banks' operations with related parties, the banking structure might have had an impact within these limits.

The above factors may have shaped emerging market experience during the crisis. The size of foreign banks, the lending channel they chose and their organisational structure could have played a role in the way in which the crisis affected lending in emerging markets.

2. Supply and demand factors in cross-border lending

The decline in cross-border lending to emerging markets coincided on the one hand with falling export demand (and, in many cases, sharply falling domestic output) and, on the other hand, with severe stress experienced by internationally active banks. Thus, it seems obvious that both demand and supply factors played a role.

This section aims to asses these impacts and examine which effect was stronger during the financial turmoil. It finds that supply factors seem to have played a larger role in determining cross-border bank lending. First, a panel regression framework is used on BIS data to disentangle demand and supply factors in cross-border bank lending. Second, further investigations are undertaken to examine the roles of demand and supply using alternative measures.

a. Panel regression analysis

The analysis uses a panel regression framework that incorporates a global supply factor and country-specific demand factors. The dataset covers quarterly data from 21 emerging market countries between early 1995 and the third quarter of 2009: Argentina, Brazil, Chile, China, the Czech Republic, Hong Kong SAR, Hungary, India, Indonesia, Israel, Korea, Malaysia, Mexico, Peru, the Philippines, Poland, Russia, Singapore, South Africa, Thailand and Turkey.

Currency-adjusted locational claims are used as the dependent variable. The advantage of using BIS locational statistics is that they measure cross-border lending exactly, ie consistently with the principles underlying national accounts and balance of payment statistics. By contrast, the consolidated statistics measure international claims, which also include local claims in foreign currency besides cross-border lending. These local claims in foreign currency are not directly relevant for balance of payment financing, and might therefore bias the results. They are also substantial in many emerging economies, so any bias might be non-trivial. Furthermore, changes in locational claims are also available in currency-adjusted form, which is not the case for consolidated data.

However, using locational data also involves trade-offs. Most importantly, it only allows global supply factors to be identified. In contrast to consolidated data, the locational statistics do not permit researchers to exploit information in the variation across lender countries due to the presence of financial centres, such as London, which intermediate bank lending. These intermediated claims show up twice in the locational data: first, between the original lender's country and the financial centre, and second, between the financial centre and the end destination. Since it is not possible to track flows from their origin to their destination, bilateral flows cannot be explained by demand and supply factors of the two countries involved.

The analysis uses the normalised quarterly volatility of the S&P 500 financial index for the global supply factor. Volatility tends to be high in periods of stress, which is in turn negatively related to credit supply. Higher volatility also implies that it is more difficult for banks to raise additional capital, which also limits credit supply. A further advantage is that volatility is computed from stock prices, which are based on large trading volumes and have a long track record.

The most important demand factor in the analysis is quarterly GDP. This follows straightforwardly from the standard credit equation: higher levels of output require more

credit, including more cross-border lending. Takats (2010) shows the robustness of the above demand and supply specification.

The impact of country-specific demand factors and a global supply factor on cross-border lending is estimated in a panel regression (Table 1). The benchmark model estimates demand and supply factors jointly. All coefficients have the right sign and are statistically significant. The size of coefficients also seems plausible: a 1% increase in output is associated with an increase in cross-border bank lending of around 0.2%. However, the demand and supply factors are correlated, which calls for the standalone "demand only" and "supply only" estimates. By omitting the other variable, these standalone models force their respective coefficients to assume the full effect of correlation between the two variables. They therefore provide upper bounds for the demand and supply effects, respectively. The relative proximity of the standalone and the respective benchmark coefficients suggests that the correlation does not substantially affect the magnitude of the estimates.

Table 1 **Demand and supply factors in cross-border bank lending to emerging markets**[1]

Q1 1995–Q3 2009

Model	Obs	R^2	Constant	Supply[2]	Demand[3]
Benchmark	1,197	0.18	0.0370***	–0.1009***	0.2032***
Demand only	1,197	0.12	0.0097**	…	0.2886***
Supply only	1,218	0.15	0.0463***	–0.1221***	…

*,**,*** denote coefficients significantly different from zero at the 10%, 5% and 1% levels, respectively.

[1] The dependent variable is the quarter-on-quarter growth rate (logarithmic) in BIS reporting banks' currency-adjusted cross-border gross claims vis-à-vis each country in the sample. The model is estimated through a panel regression allowing for heteroskedasticity across countries and using country-specific fixed effects. [2] Volatility of US S&P 500 financial index, average for the period, normalised. [3] GDP of each country and at current prices, expressed in US dollars at average exchange rates, in logarithms, seasonally adjusted.

Sources: BIS locational banking statistics; BIS estimates; Datastream; national data.

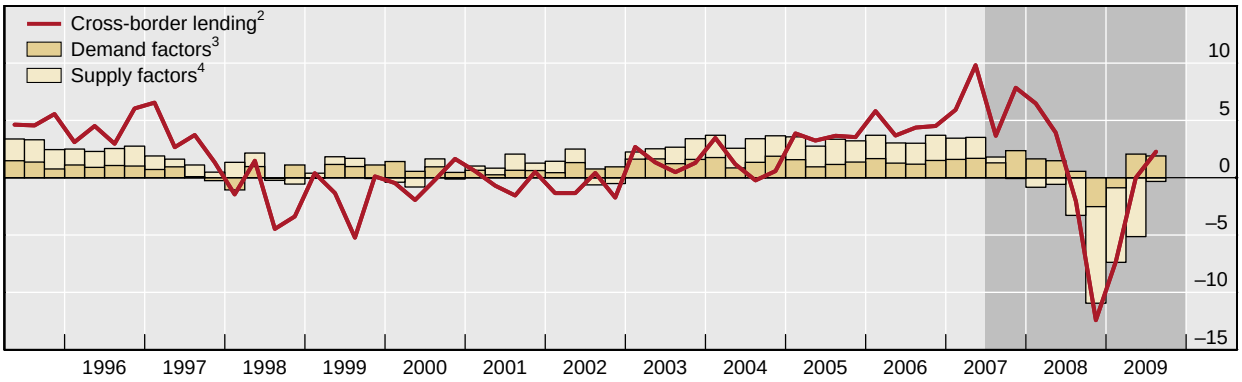
Supply factors dominated during the financial crisis, although demand factors also contributed to the decline (Graph 1). During the most intense quarter of the crisis, Q4 2008, cross-border lending to an average emerging market economy declined by 12.4%; supply factors contributed 8.4% and demand factors 2.5% to the decline (leaving the remainder unexplained).

By contrast, demand and supply factors tend to be more balanced during non-crisis periods. For example, between 2003 and 2007, demand and supply factors each contributed to around one third of cross-border lending (leaving the remaining third unexplained). This suggests that the credit boom of advanced countries also spilled over to emerging markets.

Graph 4

Demand and supply factors in cross-border bank lending to emerging markets[1]

Average quarterly growth, in per cent



[1] Based on the panel regression reported in Table 1; for each quarter ,the graph shows the average estimated forecasts across countries in the sample. [2] Quarter-on-quarter growth rate (logarithmic) in BIS reporting banks' cross-border gross claims vis-à-vis the sample country average; actual data, in per cent. [3] Quarter-on-quarter growth rate (logarithmic) in seasonally adjusted nominal GDP in US dollar terms times its panel coefficient estimate plus a constant. [4] Volatility of the S&P financial index times the panel coefficient plus a constant. The demand and supply constants are calculated by dividing the benchmark model's constant in the ratio of the standalone (demand and supply only) constants. The country fixed effects are divided similarly.

Sources: Datastream; BIS estimates.

Of course, all these results apply only to an average emerging market economy, and there is substantial heterogeneity among them. It is possible that the 1997–98 and 2002 crises meant very strong supply constraints for some economies. In the current crisis, international banks seem to have supported operations in some countries – even though they retrenched their activities in general. These issues are revisited in the next section.

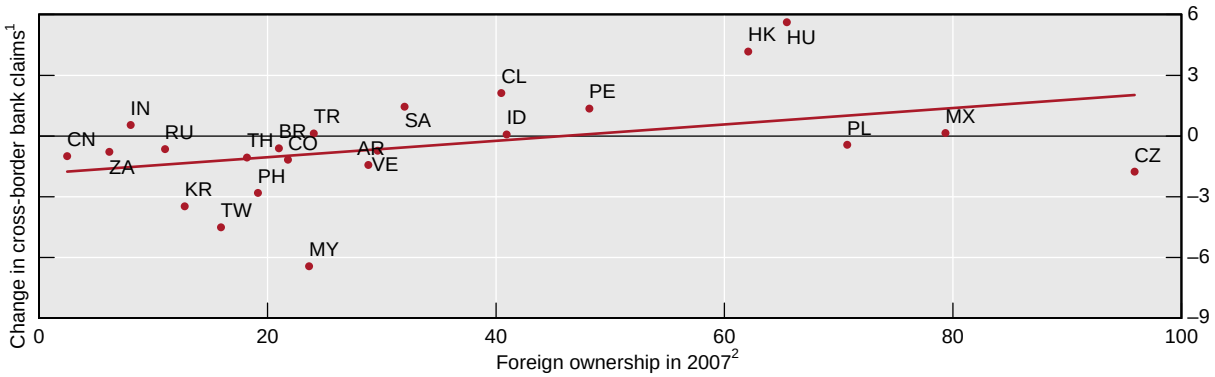
b. Further investigations

The findings of the panel regression analysis can be further substantiated by examining additional perspectives on cross-border bank lending to emerging market economies.

The presence of foreign banks seems to have stabilised cross-border lending, which suggests that supply factors played a role (Graph 5). Larger foreign ownership of the banking sector is correlated with higher cross-border lending. The graph shows that a 10% increase in foreign ownership in the banking sector is associated with around 0.4% of GDP higher cross-border bank lending during the crisis, implying that foreign bank penetration paid stability dividends during the crisis. CGFS discussions with the private sector suggest that parent bank funding was an important channel for stabilisation. This evidence suggests that major international banks stood by their emerging market subsidiaries and provided funding to them even if they cut their funding to unrelated banks.

Graph 5

Foreign ownership of banks and changes in cross-border claims



AR = Argentina; BR = Brazil; CL = Chile; CN = China; CO = Colombia; CZ = the Czech Republic; HK = Hong Kong SAR; HU = Hungary; ID = Indonesia; IN = India; KR = Korea; MX = Mexico; MY = Malaysia; PE = Peru; PH = the Philippines; PL = Poland; RU = Russia; SA = Saudi Arabia; TH = Thailand; TR = Turkey; TW = Chinese Taipei; VE = Venezuela; ZA = South Africa.

[1] Average of Q3 2008 to Q2 2009 minus average of Q3 2007 to Q2 2008 of BIS reporting banks' cross-border gross claims (including inter-office claims); as a percentage of the 2008 GDP in US dollars. [2] As a percentage of system assets.

Sources: BIS locational banking statistics by residence; IMF; Federal Reserve Bank of New York (FRBNY), based on banking superintendence and central bank data.

Naturally, there are important exceptions to these general findings, illustrated by the outliers in Graph 5. For instance, the Czech Republic might have experienced "reverse flows" (ie a decrease in cross-border lending in spite of strong economic fundamentals). These reverse flows appear to be so strong that, in spite of high foreign ownership, cross-border lending declined.

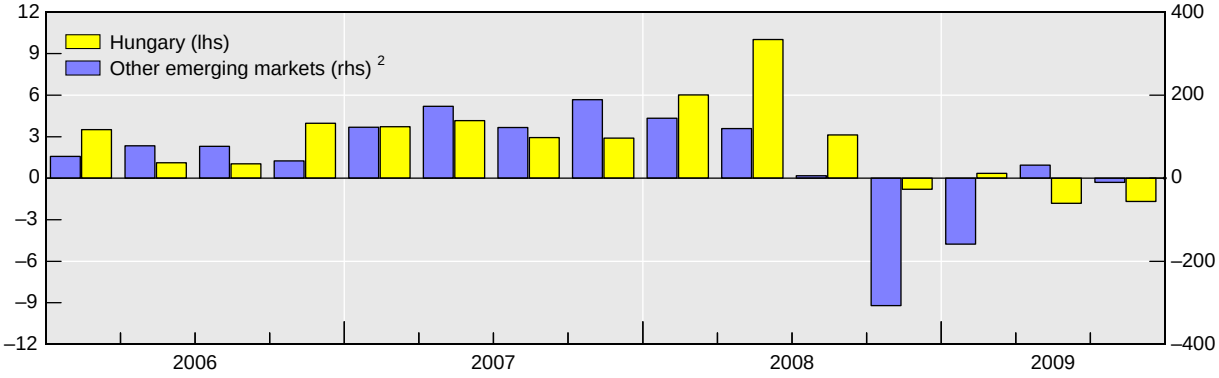
However, a strong role for supply factors does not necessarily imply that cross-border lending was sufficiently constrained to cause domestic concerns. For example, the Czech National Bank, the People's Bank of China and the Reserve Bank of India note that international banks seem to have faced lending constraints at the same time as they aimed to preserve liquidity and capital. However, this supply constraint did not have major implications for the domestic economies of those countries.

Hungary is also an outlier, as it experienced higher cross-border lending than expected based on economic fundamentals (Graphs 5 and 6). Although it had developed significant vulnerabilities in the pre-crisis period, which became apparent during the crisis, cross-border lending to Hungary remained among the highest. The relative strength of cross-border lending to Hungary can be best illustrated by comparing quarterly cross-border lending to Hungary with the remaining emerging markets (Graph 6). Once again, this suggests that supply factors could have played an important role. Although credit demand in Hungary was arguably lower than in the average emerging market economy, cross-border flows held up much better. The Magyar Nemzeti Bank also notes that parent banks provided support, mainly in the form of foreign exchange funding, for their local subsidiaries, suggesting the importance of supply factors. Graph A1 in the appendix shows the changes in cross-border lending in all emerging market economies for further country-by-country comparison.

Graph 6

Changes in cross-border positions vis-à-vis emerging markets

(flows; in billions of US dollars)



[1] BIS reporting banks' cross-border gross claims (including inter-office claims) in all currencies plus locally booked foreign currency claims on residents of BIS reporting countries; estimated exchange rate adjusted changes. [2] Argentina, Brazil, China, Chile, Colombia, the Czech Republic, Hong Kong SAR, India, Indonesia, Israel, Korea, Malaysia, Mexico, Peru, the Philippines, Poland, Russia, Saudi Arabia, Singapore, South Africa, Thailand, Turkey and Venezuela.

Source: BIS locational banking statistics by residence.

The case of Hungary highlights two potential supply factor explanations. First, major international banks may have retrenched their positions wherever it was possible (ie in countries with strong fundamentals), and provided credit where it was impossible to withdraw it (ie in countries with weaker fundamentals). Paradoxically, vulnerability could have stabilised lending as it made it impossible to withdraw funding without triggering an even deeper crisis. Why and through which mechanisms banks became convinced that it was in their best interest not to trigger a further crisis is an interesting question. Second, international agreements, such as the IMF programme in Hungary or the Vienna Initiative, in which foreign banks agreed to maintain credit exposure, could also have helped to stabilise cross-border lending. During the financial crisis, many governments aimed to stabilise bank credit in the domestic economy. These agreements might have been more effective with IMF support. Given the fact that, in many cases, cross-border lending was a necessary requirement in fulfilling such agreements, they could, almost as a corollary, have stabilised cross-border lending.

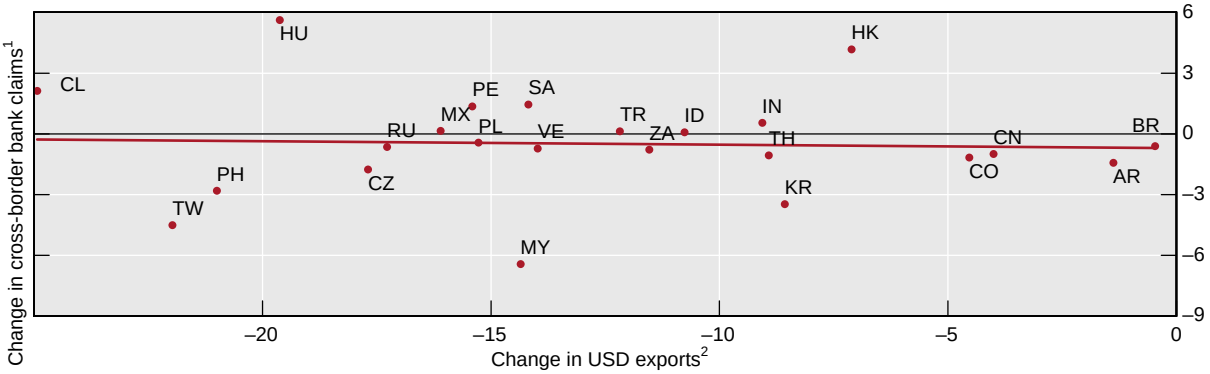
Direct investigation of demand-related factors during the financial crisis also suggests that supply factors might have had a stronger impact. However, it seems that, in many countries, demand factors were important drivers. For instance, the Czech National Bank notes that changes in cross-border lending to the Czech Republic are mostly explained by demand factors. Furthermore, the South African Reserve Bank sees demand factors dominating in the sub-Saharan region, where there were no declines in cross-border lending.[4]

However, the impact of demand factors seems to be weaker, as shown by the lack of correlation between changes in export demand and cross-border lending (Graph 7). To the extent that demand was driving cross-border lending, one would expect a positive correlation between export demand and cross-border lending: however, this does not seem to be the case.

[4] However, sub-Saharan lending might have longer execution times than elsewhere, as noted by the South African Reserve Bank, which might explain the slightly different trends from those prevailing globally.

Graph 7

Exports and international cross-border bank lending



AR = Argentina; BR = Brazil; CL = Chile; CN = China; CO = Colombia; CZ = the Czech Republic; HK = Hong Kong SAR; HU = Hungary; ID = Indonesia; IN = India; KR = Korea; MX = Mexico; MY = Malaysia; PE = Peru; PH = the Philippines; PL = Poland; RU = Russia; SA = Saudi Arabia; TH = Thailand; TR = Turkey; TW = Chinese Taipei; VE = Venezuela; ZA = South Africa.

[1] Average of Q3 2008 to Q2 2009 minus average of Q3 2007 to Q2 2008 of BIS reporting banks' cross-border gross claims (including inter-office claims) in all currencies plus locally booked foreign currency claims on residents of BIS reporting countries; as a percentage in the outstanding stock at end-2008. [2] Total exports between Q3 2008 and Q2 2009 minus total exports between Q3 2007 and Q2 2008; as a percentage of total exports between Q3 2007 and Q2 2008.

Sources: BIS locational banking statistics by residence; Datastream; national data; BIS calculations.

The lack of correlation between export demand and cross-border lending is somewhat puzzling based on the experience from trade finance, which has fallen substantially and roughly in line with trade values. There are various demand and supply side explanations for this phenomenon. On the one hand, in discussions with the CGFS, major international banks explained the drop in trade finance through demand factors, ie a decrease in exports. Declines in collateral values (due to lower export demand) could have also made certain borrowers ineligible for trade credit from a risk management perspective. On the other hand, others argued that supply factors were more relevant. According to this argument, trade finance became much more expensive as major internationally active banks experienced distress. The export sector was severely hit by the resulting high financing costs, especially in regions, such as Southeast Asia, where the product chain involves many stops and the value added in each country is relatively small. In marginal cases, declines in export profitability led to the full cessation of exports. Hence, there are both supply and demand side arguments for the co-movement of lending and trade volumes, which, interestingly, is not apparent in the BIS data.

Though it seems that supply factors have played a significant role in determining cross-border lending to emerging markets during the crisis, the analysis shows that there is much room left for future research. Heterogeneity across countries and across international banks could further nuance the picture. For instance, the experience from Mexico suggests that exposure to highly distressed financial centres can be disruptive. In sum, the question needs due attention and further work before a definitive conclusion can be drawn.

3. Changes in the composition of lending

International bank claims have receded in all sectors, but lending to banks has been the hardest hit (Graph 8, left-hand panel). Interbank market financing difficulties were noted by many central banks, including the Czech National Bank and the Magyar Nemzeti Bank. According to CGFS (2010a), many internationally active banks indicated that they had experienced severed access to interbank markets. Given that those banks also highlighted

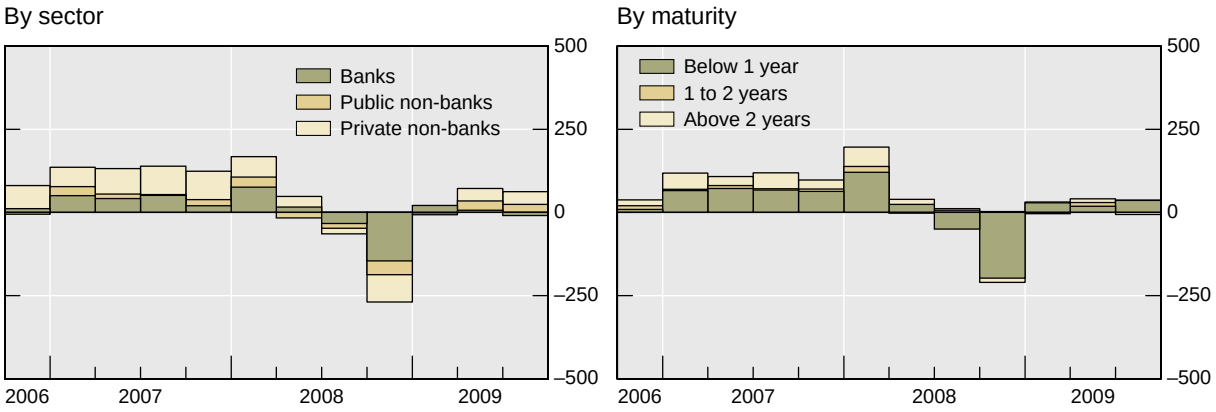
that funding by parent banks had remained relatively intact, interbank lending to unrelated banks may have been disproportionately hard hit during the crisis. Understanding what happens on interbank markets is especially relevant, as funding problems can quickly translate into broader balance of payment difficulties. Interbank market funding difficulties also preceded and contributed to previous emerging market crises. Furthermore, in contrast to other kinds of lending, interbank lending did not begin to recover in the third quarter of 2009, and, given such difficulties, it might continue to lag in the future as well.

The maturity of cross-border claims paints a more favourable picture, as the stock of longer-term maturity cross-border lending did not decrease (Graph 8, right-hand panel). During the crisis, short-term (below one year) maturities mainly declined and longer-term maturities remained stable. This suggests that cross-border lending took place at longer maturities, which roughly compensated for the natural shortening of the maturity profile.

Graph 8

Cross-border bank claims on emerging markets[1]

Quarterly flows; in billions of US dollars



[1] Cross-border lending and local claims in foreign currency unadjusted for exchange rate movements. Sum of Argentina, Brazil, Chile, China, Colombia, the Czech Republic, Hong Kong SAR, Hungary, India, Indonesia, Israel, Korea, Malaysia, Mexico, Peru, the Philippines, Poland, Russia, Saudi Arabia, Singapore, South Africa, Thailand and Turkey.

Source: BIS consolidated banking statistics.

However, it is also possible that a marked shortening happened in the shortest maturity category (below one year), which is not captured in the BIS data categories; there is some evidence pointing to this from central banks. In India, for instance, overseas institutions were not interested in maturities longer than six months during the peak of the crisis. The Saudi Arabian Monetary Authority quotes anecdotal evidence which shows that funding maturities by international banks to Saudi counterparties shortened substantially (eg from 90 days to 30 days). Similarly, the South African Reserve Bank has also seen a shortening of maturities.

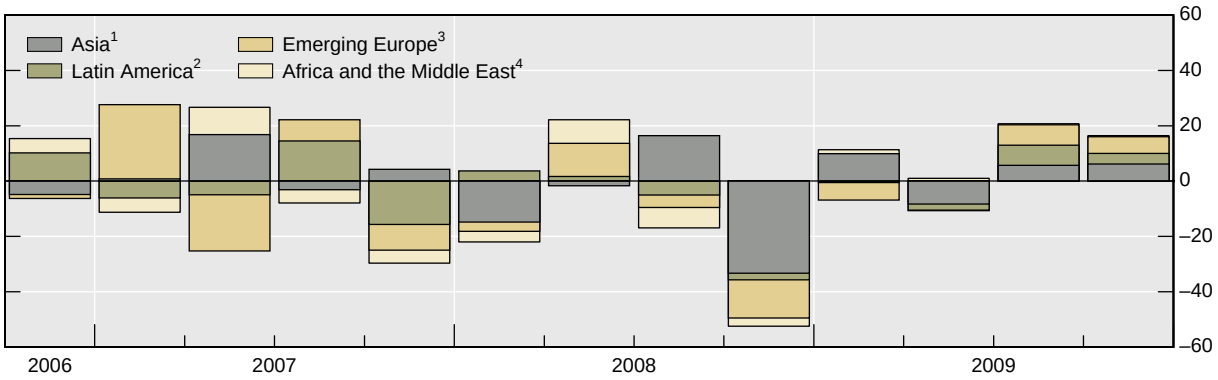
Trade finance also became distressed in the aftermath of the crisis. For example, export finance contracts dropped by 30% between September and October 2008 in Brazil. Concerns even prompted innovative foreign exchange reserve lending.

International syndicated credit started to decline even before the financial turmoil began to affect emerging markets (Graph 9). Syndicated credit developments are relevant for two reasons: first, syndicated credit provides substantial funding to emerging markets; and second, syndicated loans serve a market segment which might be difficult to finance by standalone bank lending or securitisation. The decline in syndicated lending could well have been a reflection of supply side effects, as large advanced country banks active in credit syndication were already experiencing pressures that were unrelated to emerging markets.

Graph 9

Signed international syndicated credit facilities

Quarterly flows by nationality of borrower; in billions of US dollars



[1] China, Hong Kong SAR, India, Indonesia, Korea, Malaysia, Singapore and Thailand. [2] Argentina, Brazil, Chile, Mexico and Peru. [3] The Czech Republic, Hungary, Poland, Russia and Turkey. [4] Israel, Saudi Arabia and South Africa.

Source: BIS syndicated loan statistics.

Particular concerns over the syndicated markets were evidenced by "self-syndication". In this process, borrowers entered into bilateral loans with several banks, thereby replicating syndicated credit. Self-syndication is also consistent with the apparent discrepancy of syndicated and cross-border lending statistics during the quarters immediately preceding the crisis.

Although syndicated credit declines preceded those in cross-border lending, syndicated lending growth did not precede the pickup in cross-border lending (compare Graphs 1 and 9). However, the more recent third quarter pickup in syndicated lending may signal further increases in cross-border lending for the remainder of the year.

Finally, there is some evidence to suggest that the syndicated credit situation was even worse than Graph 9 suggests. There is some anecdotal evidence that loans previously contracted on the interbank market have been moved to the syndicated market as risk appetite – especially towards interbank market risk-taking – has decreased substantially. Many emerging markets document disruptions on the interbank market, and even some advanced countries are currently syndicating loans for their sovereign needs instead of using the interbank market.

4. Changes in lending terms

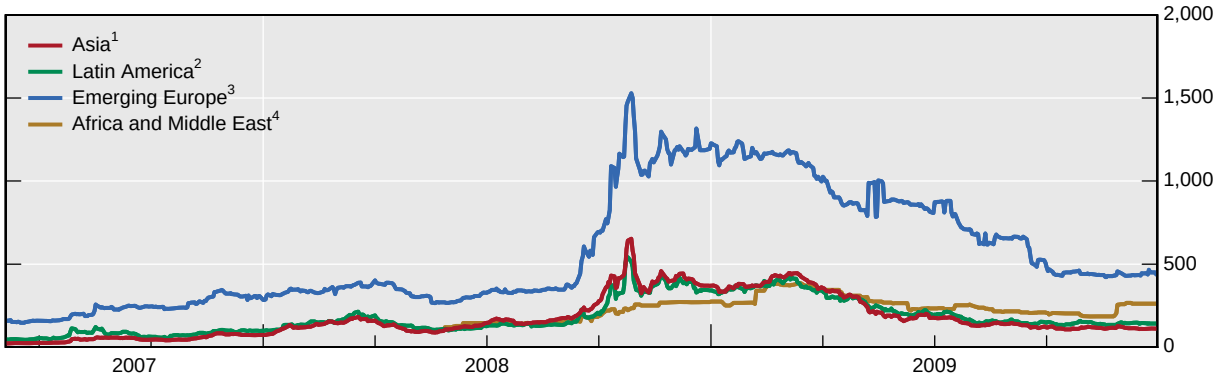
Lending terms deteriorated substantially for all emerging market banks during the crisis. Although there are no direct measures for cost and conditions of lending, CDS spreads of emerging market banks provide a useful proxy for lending conditions.

Graph 10 shows that average emerging market bank CDS spreads widened substantially from pre-crisis levels. The most dramatic increases were observed in emerging Europe, where average CDS spreads peaked at more than 1,300 points higher than the pre-crisis levels of mid-2007. In comparison, CDS spread peaks were around 600, 500 and 400 points higher in Asia, Latin America, and Africa and the Middle East, respectively.

Graph 10

Bank CDS spreads by region

Five-year on-the-run, simple average, in basis points



[1] ICICI Bank, Bank of China, China Development Bank, Industrial & Commercial Bank China, Agricultural Bank China, Bank East Asia, Citic Ka Wah Bank, Bank Negara Indonesia TBank PT, Industrial Bank Korea, Korea Development Bank, Korea Exchange Bank, Export Import Bank Korea, Hana Bank, Kookmin Bank, Woori Bank, Shin Han Bank, Southern Bank, Pub Bank, Malayan Bank, United Overseas Bank, Krung Thai Bank, Bangkok Bank, Siam Commercial Bank. [2] Unibanco Unico de Bancos Brasileiros, Banco Itau, Banco Bradesco, Banco Nacional Desenvolvimento Economico E Social, Banco Do Brasil, Banco Santander Chile, Banco Nacional de Comercio Exterior SNC. [3] OTP Bank, Vnesheconombank, Alfa Bank, SBERBANK, Bank Russkii Standart, Akbank TAS, Finansbank. [4] Saudi Brit Bank.

Source: Markit.

However, some caution is required in analysing the regional CDS data. Due to limited data availability, regional spreads are not fully representative of the region. This may be most relevant for emerging Europe, where the regional CDS spread contains one Hungarian, four Russian and two Turkish banks. Similarly, there is a single Saudi bank in the Africa and Middle East category. In order to provide a full picture, Appendix Graph A2 shows the CDS spread data for all available individual banks.

Though lending conditions have not yet returned to pre-crisis levels, bank CDS spreads have declined substantially. It remains an open question whether credit market conditions have reverted to normal levels. While CDS spreads are still above pre-crisis levels, this may simply reflect the new norm for credit conditions.

With regard to other lending terms, such as collaterals or guarantees, there is no strong evidence. One might argue that increased risk aversion has impacted these terms, yet the issue does not appear to have surfaced. For instance, the Saudi Arabian Monetary Authority notes explicitly that it did not experience significant changes to these terms.

5. Parent bank funding

The crisis tested the presence of foreign banks in emerging markets. The value of foreign bank contributions has been previously debated. During the crisis, these questions resurfaced with renewed relevance. Some feared that global risk management would make emerging markets vulnerable to sudden and – from their perspective – arbitrary reallocations of credit by parent banks. Furthermore, it appears, from the experience of advanced economies, that in certain circumstances, parent banks became unable to support their branches or subsidiaries in emerging economies. Hence, understanding the parent bank funding of emerging market activities is highly relevant when thinking about economic policy and regulation.

There is much anecdotal evidence on the positive role of parent bank funding during the crisis. The Magyar Nemzeti Bank found that parent bank support, especially in terms of foreign exchange funding, increased by around EUR 3 billion during the most intense liquidity crisis in late 2008. The Czech National Bank also finds that parent bank funding remained stable compared to unrelated funding. CGFS (2010b) confirms that, according to major international banks, parent bank lending remained the stable channel for interbank lending. When interbank markets closed, or became substantially shallower, parent banks continued to provide credit to their subsidiaries.

Most evidence analysed in this paper is consistent with the anecdotes on the strength of parent bank lending. The finding that the strength of foreign ownership is a factor determining cross-border lending supports the role attributed to parent bank lending during the crisis.

In sum, the available evidence points towards parent bank involvement and support for emerging market operations. It seems that one of the dividends of increased foreign ownership has been the stabilisation of credit conditions. However, this conclusion is preliminary and subject to certain caveats. Heterogeneity across countries and banks might imply that experiences could have varied substantially.

6. Looking forward

In spite of calming conditions, challenges remain in the global economy. It is still unclear what will drive global demand as households, corporations and governments in major advanced economies need to restore their balance sheets. Growth might remain weak in the coming years, putting further strain on international banks. Furthermore, some emerging markets also need to repair household and corporate balance sheets, which will weigh on the banking sector.

Further analysis of the role of international banks in emerging markets will take place in this complicated economic environment. It seems that, during the crisis, supply factors, in particular liquidity and capital constraints of international banks, played a significant role in cross-border lending. However, organisational structures (decentralised vs centralised capital and liquidity management) and risk monitoring by central banks substantially affected the evolution of cross-border lending – and the effects of the crisis on particular emerging market economies.

There are some policy lessons, however, which seem to be universally relevant. The sharp declines in cross-border lending to banks have highlighted the risks of wholesale funding structures and the need to carefully monitor liquidity. Similarly, there is an understanding that private sector risk-taking needs to be monitored more closely.

However, other policy lessons are less straightforward. The role of supply factors suggests that emerging economies have a vested interest in the health of international banks providing cross-border lending, yet enforcing this looks difficult. Regulating the organisational structure of international banks' local operations could provide a channel for mitigating supply shocks. For instance, decentralised bank structures could have shielded the local operations of international banks from global shocks. However, in other countries, centralised liquidity and capital management seems to have eased the consequences of the financial crisis. It could well be that, in some areas, there are simply no one-size-fits-all answers.

In sum, policy challenges remain. It appears that the economic landscape will remain complex for the foreseeable future. This implies that, from an international perspective, safeguarding cross-border lending and preventing large and unwarranted declines in lending remains a priority. Further analysis of economic policies, supervision and regulation will take place against this background.

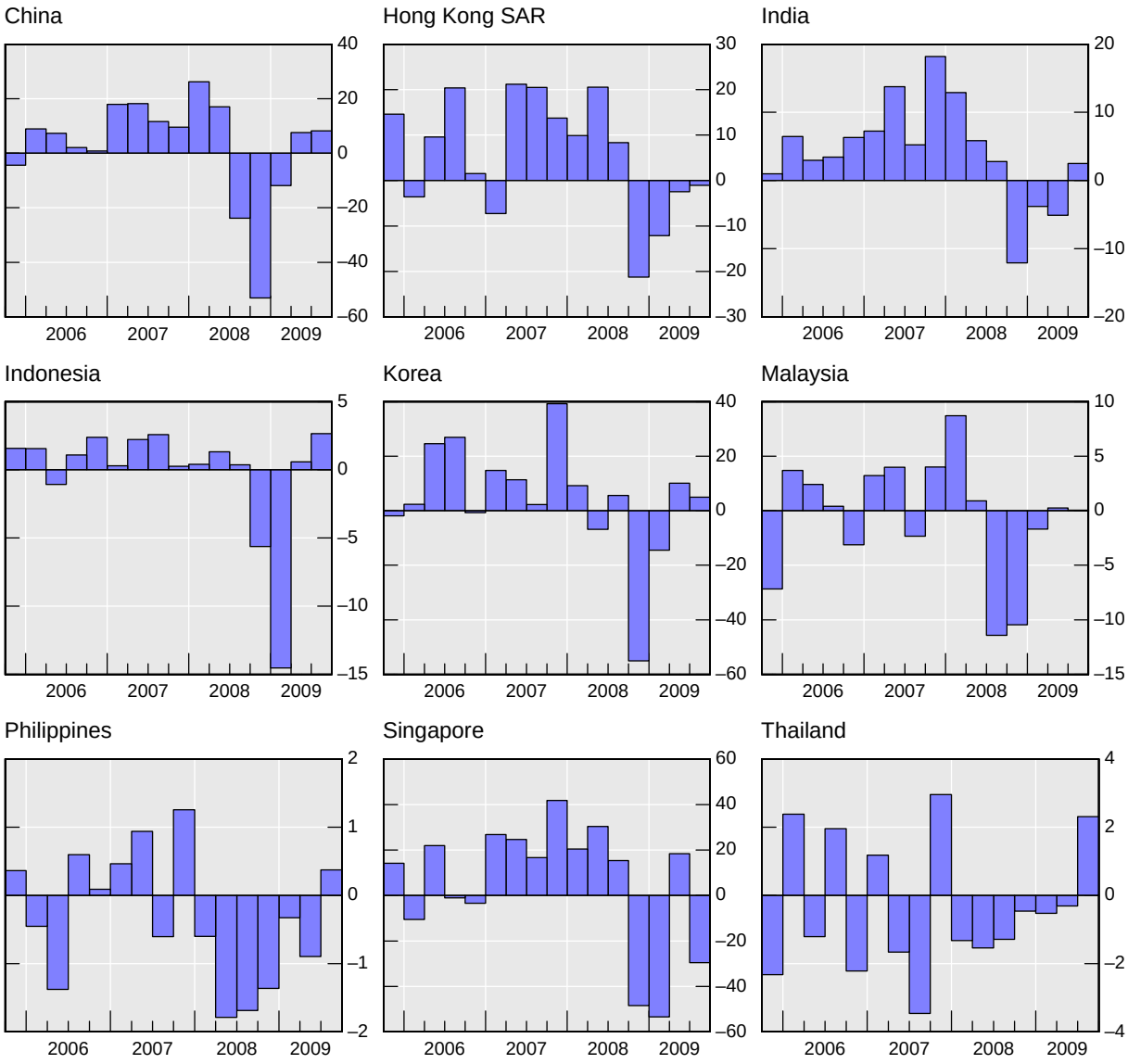
Appendix

Graph A1

Changes in cross-border positions vis-à-vis emerging markets[1]

Quarterly flows; in billions of US dollars

Emerging Asia



[1] BIS reporting banks' cross-border gross claims (including inter-office claims) in all currencies plus locally booked foreign currency claims on residents of BIS reporting countries; estimated exchange rate adjusted changes.

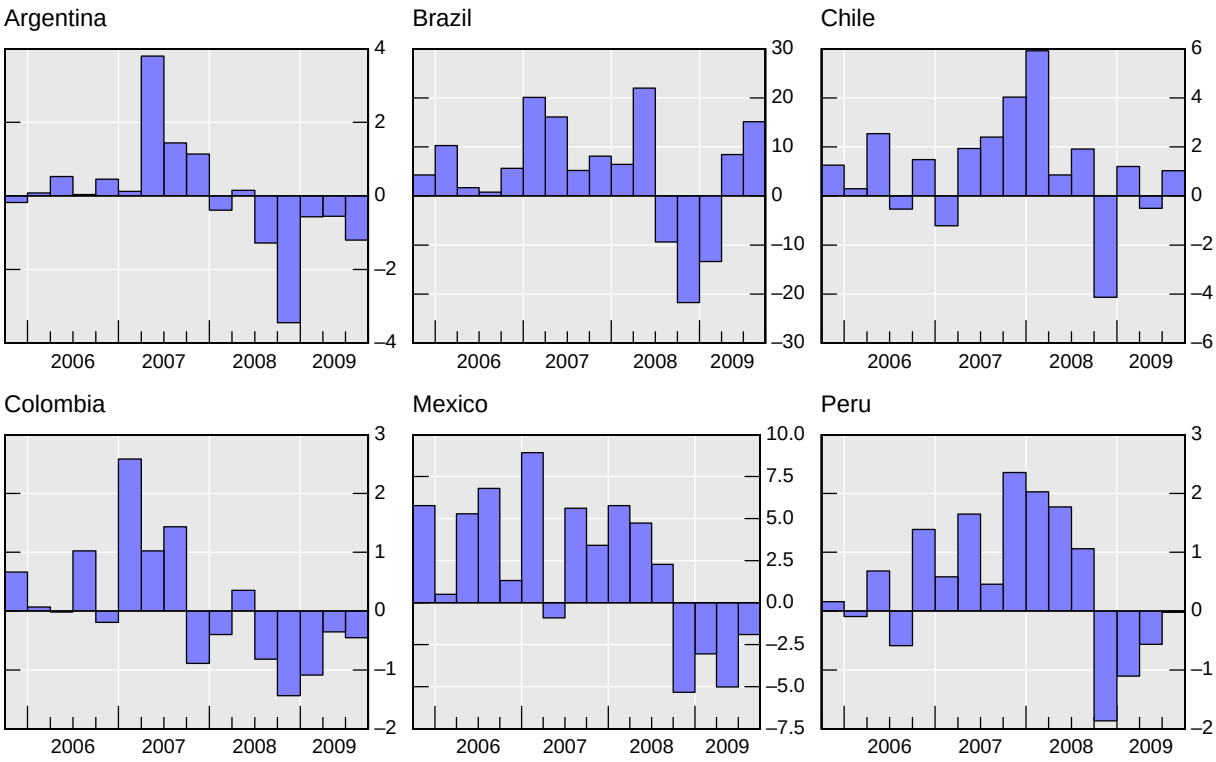
Source: BIS locational banking statistics by residence.

Graph A1 (cont)

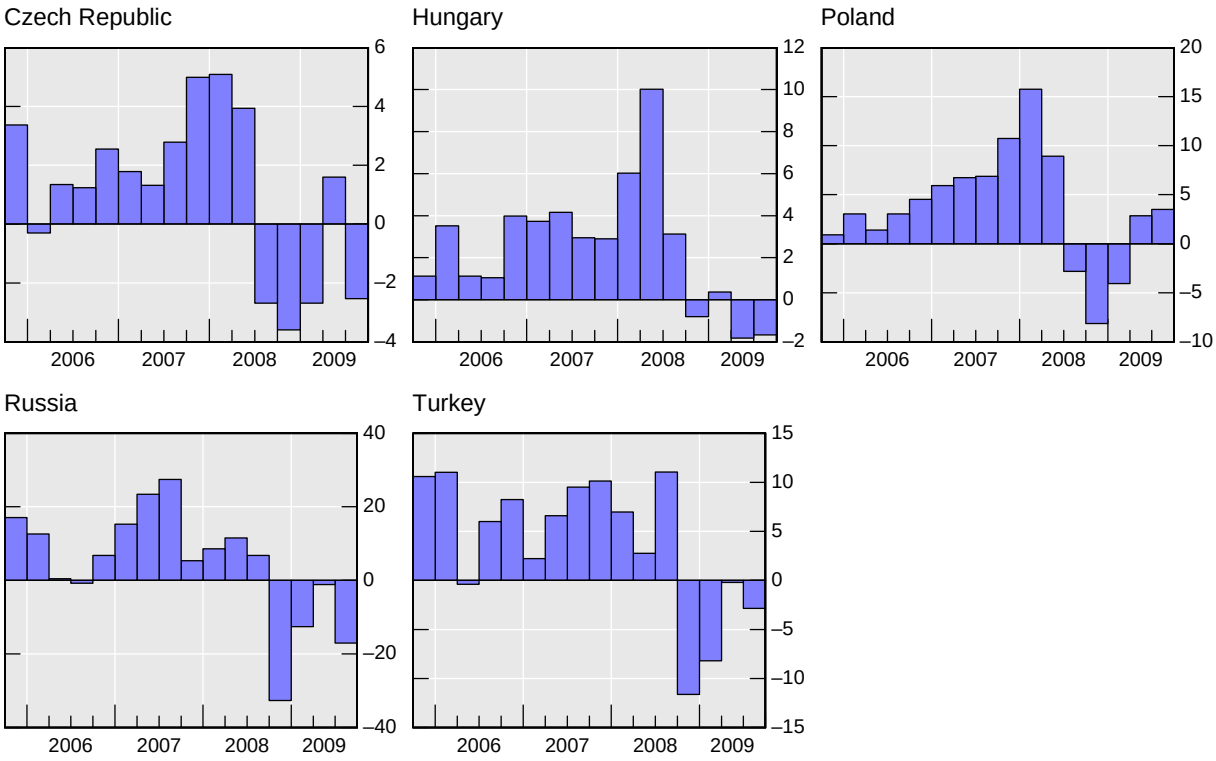
Changes in cross-border positions vis-à-vis emerging markets[1]

Quarterly flows; in billions of US dollars

Latin America



Emerging Europe



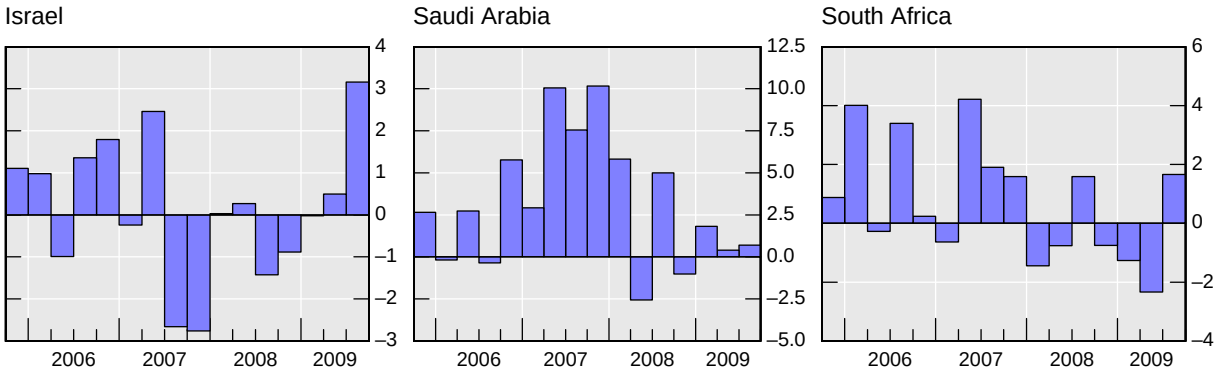
Source: BIS locational banking statistics by residence.

Graph A1 (cont)

Changes in cross-border positions vis-à-vis emerging markets[1]

Quarterly flows; in billions of US dollars

Africa and Middle East



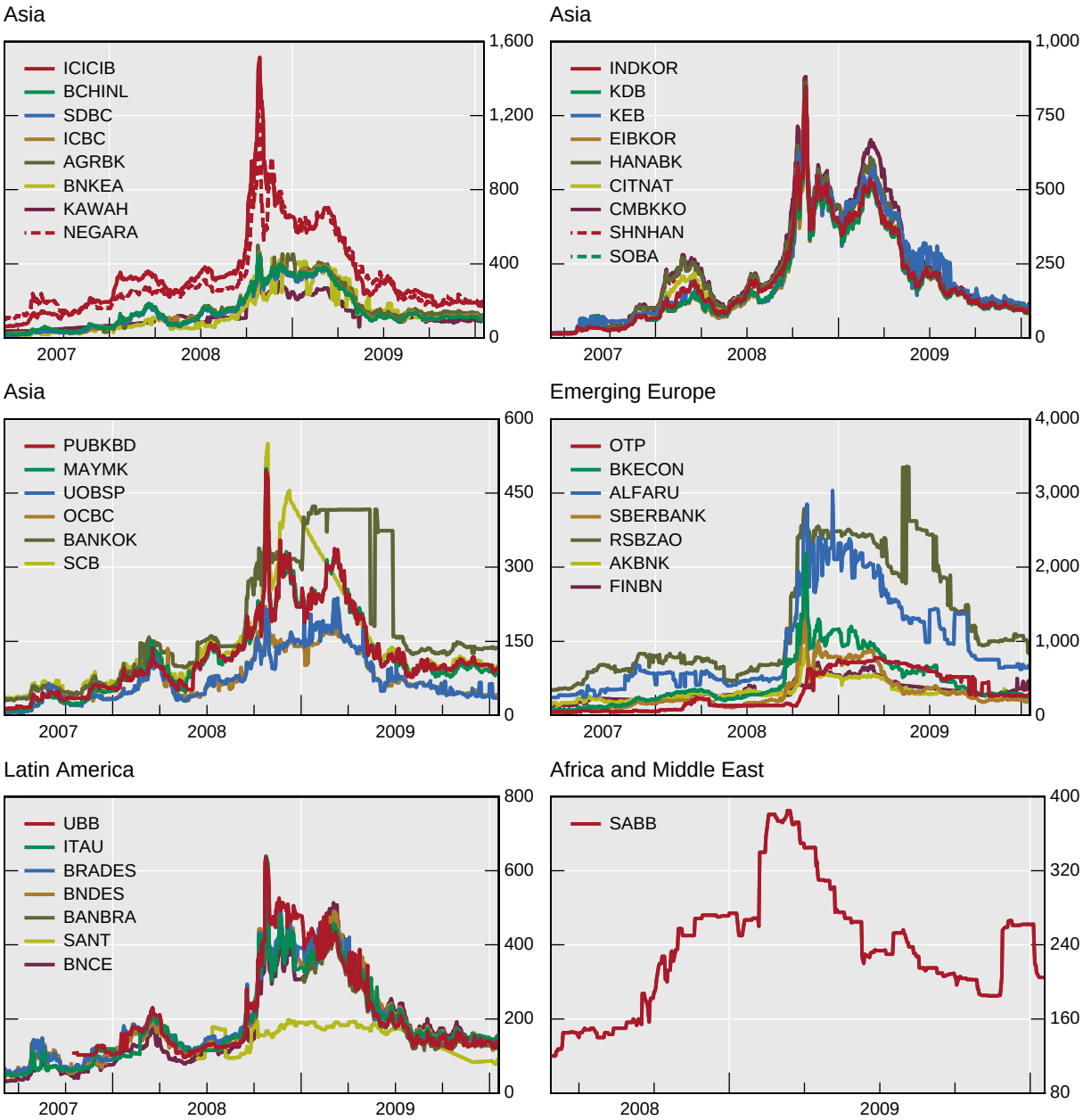
[1] BIS reporting banks' cross-border gross claims (including inter-office claims) in all currencies plus locally booked foreign currency claims on residents of BIS reporting countries; estimated exchange rate adjusted changes.

Source: BIS locational banking statistics by residence.

Graph A2

Individual bank CDS spreads, by region

Five-year on-the-run, in basis points



AGRBANK = Agric Bank China, AKBNK = Akbank TAS, ALFARU = Alfa Bank, BANBRA = Banco Do Brasil, BANKOK = Bangkok Bank Pub Co, BANVOR = Banco Votorantim, BCHINL = Bank of China, BHIP = Banco Hip, BANKECON = Vnesheconombank, BNCE = Banco Nacional de Comercio Exterior SNC, BNDES = Banco Nacional Desenvolvimento Economico E Social, BNKEA = Bank East Asia, BRADES = Banco Bradesco, CITNAT = Kookmin Bank, CMBANKKO = Woori Bank, EIBANKOR = Export Import Bank Korea, FINBN = Finansbank, HANABANK = Hana Bank, ICBC = Industrial & Commercial Bank China, ICICIB = ICICI Bank, INDKOR = Industrial Bank Korea, ITAU = Banco Itau, KAWAH = Citic Ka Wah Bank, KDB = Korea Dev Bank, KEB = Korea Exchange Bank, KTB = Krung Thai Bank Pub Co, MAYMK = Malayan Bank, NEGARA = Bank Negara Indonesia, OCBC = Oversea Chinese Bank Corp, OTP = OTP Bank Rt, PUBANKBD = Pub Bank, RSBZAO = Bank Russkii Standart, SABB = Saudi Brit Bank, NT = Banco Santander Chile, SBERBANK = SBERBANK Svgs Bank Russian Federation, SCB = Siam Commercial Bank, SDBC = China Dev Bank, SHNHAN = Shin Han Bank, SOBA = Southern Bank, UBB = Unibanco Unico de Bancos Brasileiros, UOBSP = United Overseas Bank, ZENIT = Bank Zenit.

References

Avdjiev, S, J Gyntelberg and C Upper (2009): "Highlights of international banking and financial market activity", *BIS Quarterly Review*, December.

Baba, N, B Gadanecz and F Packer (2009): "Highlights of international banking and financial market activity", *BIS Quarterly Review*, September.

Baba, N, F Packer and T Nagano (2008): "The spillover of money market turbulence to FX swaps and cross-currency swap markets", *BIS Quarterly Review*, March.

Bank for International Settlements (2008): "Financial globalisation and emerging market capital flows", *BIS Papers*, no 44, December.

Committee on the Global Financial System (2009): "Capital flows and emerging market economies", *CGFS Papers*, no 33, January.

———(2010a): "The functioning and resilience of cross-border funding markets", *CGFS Papers*, no 37, March.

———(2010b): "Funding patterns and liquidity management of internationally active banks", *CGFS Papers*, no 39, May.

Gyntelberg, J, P McGuire and G von Peter (2009): "Highlights of international banking and financial market activity", *BIS Quarterly Review*, June.

Herrman, S and D Mihaljek (2009): *The determinants of cross-border bank flows to emerging markets – new empirical evidence on the spread of financial crises*, mimeo, December.

McCauley, R and S Zimmer (1991): "The cost of capital for securities firms in the United States and Japan", *BIS Quarterly Review*, Federal Reserve Bank of New York, issue Aut, pp 14–27.

McGuire, P and G von Peter (2009): "The US dollar shortage in global banking and the international policy response", *BIS Working Papers*, no 291, October.

McGuire, P and N Tarashev (2008): "Bank health and lending to emerging markets", *BIS Quarterly Review*, December.

Mihaljek, D (2009): *The spread of the financial crisis to central and eastern Europe: evidence from BIS data*, mimeo.

Saxena, S and A Villar (2008): "Hedging instruments in emerging market economies", *BIS Papers*, no 44, December.

Takats, E (2010): "Was it credit supply? Cross-border bank lending to emerging market economies during the financial crisis", *BIS Quarterly Review*, June.