



# Economic Premise

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## Bank Flows and Basel III—Determinants and Regional Differences in Emerging Markets

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*The global financial crisis has led to a range of reform proposals concerning the regulatory framework governing the banking sector—collectively referred to as “Basel III.” Although the proposed reforms are expected to generate substantial benefits by reducing the frequency and intensity of banking crises, concerns have been raised that, in the short term, the costs of moving to higher capital ratios may lead banks to raise their lending rates and reduce lending. This note explores the near-term implications of Basel III capital regulations on bank flows to emerging markets, based on an analysis of the key determinants of these flows.*

The global financial crisis has led to a range of proposals for reforming the regulatory framework that governs the banking sector, with a view to enhancing its resilience. Agreement has already been reached on some aspects of these new rules, which are collectively referred to as “Basel III” (box 1). The proposed new regulations cover both microprudential or firm-specific measures and macroprudential measures aimed at strengthening the resilience of the banking system as a whole by addressing the procyclicality of banking and limiting the risks arising from the interconnectedness among financial institutions.

Although the proposed reforms are expected to generate substantial benefits (namely, by reducing the frequency and intensity of banking crises), concerns have been raised that, in the short term, the costs of moving to higher capital ratios may lead banks to raise their lending rates and reduce lending.<sup>1</sup> In particular, if these regulations are implemented over a short period of time, there could be a consequent drag on the economic recovery in countries adopting these regula-

tions and in those emerging markets closely dependent on global banking flows.

Based on an analysis of the determinants of bank flows from advanced economies to emerging markets that focuses on the nature of the financial links between these countries, this note examines the impact of the regulatory changes proposed under Basel III on emerging markets. The focus is exclusively on what could be referred to as the “financial flows channel”—that is, through reduced lending and changes in interest rates.

### Estimates of the Potential Short-Term Impact of Basel III Vary Widely

The range of estimates of the potential short-term impacts on lending rates, volumes, and economic activity among advanced economies adopting Basel III is quite broad. Two such estimates are those of the Macro Assessment Group (MAG) and the Institute for International Finance (IIF). Based on models covering 17 countries, the MAG report



### Box 1. Proposed Basel III Reforms

The proposed Basel III reforms aim to strengthen microprudential regulations (to help raise the resilience of individual banking institutions) and macroprudential regulations (to address systemwide risks that can build up across the banking sector and the procyclical amplification of these risks over time). Although the cornerstone of the reforms is stronger capital and liquidity requirements, these are being buttressed by measures to improve supervision, risk management, governance, transparency, and disclosure. The measures that were agreed by the Basel Committee on Banking Supervision and the governors and heads of supervision in September 2010 include the following:

- Strengthening the quality, consistency, and transparency of capital to ensure that banks are better able to absorb losses. Tier 1 capital will need to be predominately in the form of common shares and retained earnings, Tier 2 capital instruments will be harmonized, and Tier 3 capital will be eliminated.
- Raising the level of the minimum capital requirements. Under the current Basel II, core and regular Tier 1 capital are 2.0 percent and 4.0 percent, respectively. Under Basel III, core Tier 1 capital will rise to 4.5 percent and Tier 1 capital will rise to 6.0 percent. The phase-in period is as follows: core Tier 1 capital to 3.5 percent in January 2013, to 4.0 percent in January 2014, and to 4.5 percent in January 2015. The difference between the total capital requirement of 8.0 percent and the Tier 1 requirement can be met with Tier 2 capital. Also, a capital conservation buffer of 2.5 percent on top of Tier 1 is to be introduced to ensure that banks maintain capital that can be used to absorb losses during periods of financial and economic stress. Although banks are allowed to draw on the buffer during such periods, the closer their regulatory capital ratios approach the minimum requirement, the greater the constraints will be on earnings distributions. (Currently, under Basel II, there is no capital conservation buffer.) The capital conservation buffer begins at 0.625 percent in January 2016, rises to 1.250 percent in January 2017, goes to 1.875 percent in January 2018, and rises again to 2.500 percent in January 2019. Under

Basel III, the total common equity requirement will rise to 7.0 percent.

- Increasing the risk coverage of the capital framework—particularly, for trading activities, securitizations, exposures to off-balance-sheet vehicles, and counterparty credit exposures arising from derivatives.
- Introducing an internationally harmonized leverage ratio to serve as a backstop to the risk-based capital measure and to contain the buildup of excessive leverage in the system.
- Raising the standards for the supervisory review process (Pillar 2) and public disclosure (Pillar 3); together with additional guidance in the areas of sound valuation practices, stress testing, liquidity risk management, corporate governance, and compensation.
- Introducing minimum global liquidity standards, consisting of both a short-term liquidity coverage ratio and a longer-term structural net stable funding ratio.
- Promoting the buildup of capital buffers that can be drawn down in times of stress, including the capital conservation buffer mentioned above and a countercyclical buffer to protect the banking sector from periods of excessive credit growth. The proposed countercyclical buffer will be within a range of 0–2.5 percent of common equity and will be implemented according to national circumstances.

The committee is also working with the Financial Stability Board to address risks of systemically important banks. The committee and the governors and heads of supervision have agreed that these banks should have loss-absorbing capacity beyond the minimum standards of the Basle III framework. Going forward, the committee will also be working on (1) a fundamental review of the trading book; (2) a review of the use and impact of external ratings in the securitization capital framework; (3) the treatment of large exposures; (4) enhanced cross-border bank resolution; (5) a review of the core principles for banking supervision to reflect the lessons of the crisis; and (6) standards implementation and stronger collaboration among bank supervisors.

Source: Based on BCBS 2010.

finds that the median estimated increase in lending spreads is roughly 15 basis points by 2015 in response to a 1 percentage point increase in the target capital ratio over four years (MAG 2010, table 1, p. 17). The IIF report—which looks at the Euro Area, Japan, and the United States—assumes a 2

percentage point increase in the target capital ratio (reflecting both the increase in capital and the liquidity standards), and it finds that this results in an increase in the average lending spread of 132 basis points during 2011–15 (IIF 2010a, table 3, p. 15).

In part, the differences in estimates reflect differences in the regulatory changes assumed: whereas the MAG study focuses largely on the impact of a higher regulatory capital ratio, the IIF study also considers redefinition effects, higher trading book capital, and a (1 percentage point) counter-cyclical buffer. In fact, some market participants expect the effective increase in core Tier 1 capital requirements under the new rules (when all the capital-related changes are taken into account, not simply those of the higher regulatory capital ratio) to be more than 2 percentage points—perhaps as high as 6 percentage points (IIF 2010b, p. 20). As highlighted by Slovik and Cournède (2011), the increase in capitalization will also depend on whether banks fully maintain their current discretionary capital buffers above the regulatory minimums.

The broad range of estimates also reflects different assumptions regarding the implementation period. This matters because the stock costs and flow costs of increasing capital differ. The “stock costs” of holding more equity arise from factors such as taxes and agency conflicts that make equity capital more expensive, regardless of how that equity comes onto the balance sheet (that is, regardless of whether the equity is accumulated through new issuances or through retained earnings). The “flow costs” are associated with the process of reaching the new capital ratios. Many observers have argued that the stock costs of holding more equity may not be very significant because, even though equity is more risky and thus costly, these risks (and costs) are likely to fall as banks deleverage.<sup>2</sup> In contrast, the flow costs will depend in part on the length of time given for implementation. Indeed, a more gradual phase-in period can enable banks to adjust to the new capital ratios in a least-costly manner, such as through accumulating capital via retained earnings. Also, although the Basel Committee has stretched the implementation until 2019, there are indications that market pressures may lead banks to adopt these regulations at a faster pace.

Finally, the capital markets’ response as banks issue new equity will also matter. The IIF report assumes that the capital markets’ response is less elastic, which leads to a higher cost of equity. Much of this uncertainty is also subject to the strength of the recovery following the global financial crisis. In fact, the impact from higher lending rates and lower credit availability on economic activity is itself subject to uncertainty. The magnitude of the latter will depend, for instance, on the different sources of financing. In turn, in countries where capital markets can provide an alternative source of financing, the impact is likely to be less. Moreover, the response of monetary authorities to any regulation-induced economic slowdown (and, of course, the scope there is for such a response) would also make a difference. Against this background, table 1 shows the range of estimates of the impact on lending rates and economic activity, reflecting the

**Table 1. Short-Term Impacts of Basel III in Advanced Economies**

Study	Impact on lending rates (bps)	Impact on economic activity (pp)	Assumptions	Range <sup>a</sup>	
				Increase in rates (bps)	Decline in activity (pp)
MAG	15.4	–0.16, four and a half years after implementation	1 percentage point increase in common equity ratio, implemented over four years	15–90	0.16–1.80
IIF	132	–0.60	Package of regulations, including a 2 percentage point rise in common equity ratio, capital redefinition effects, and higher liquidity requirements	66–396	0.3–1.8

Source: Authors’ compilation.

Note: bps = basis points; pp = percentage points.

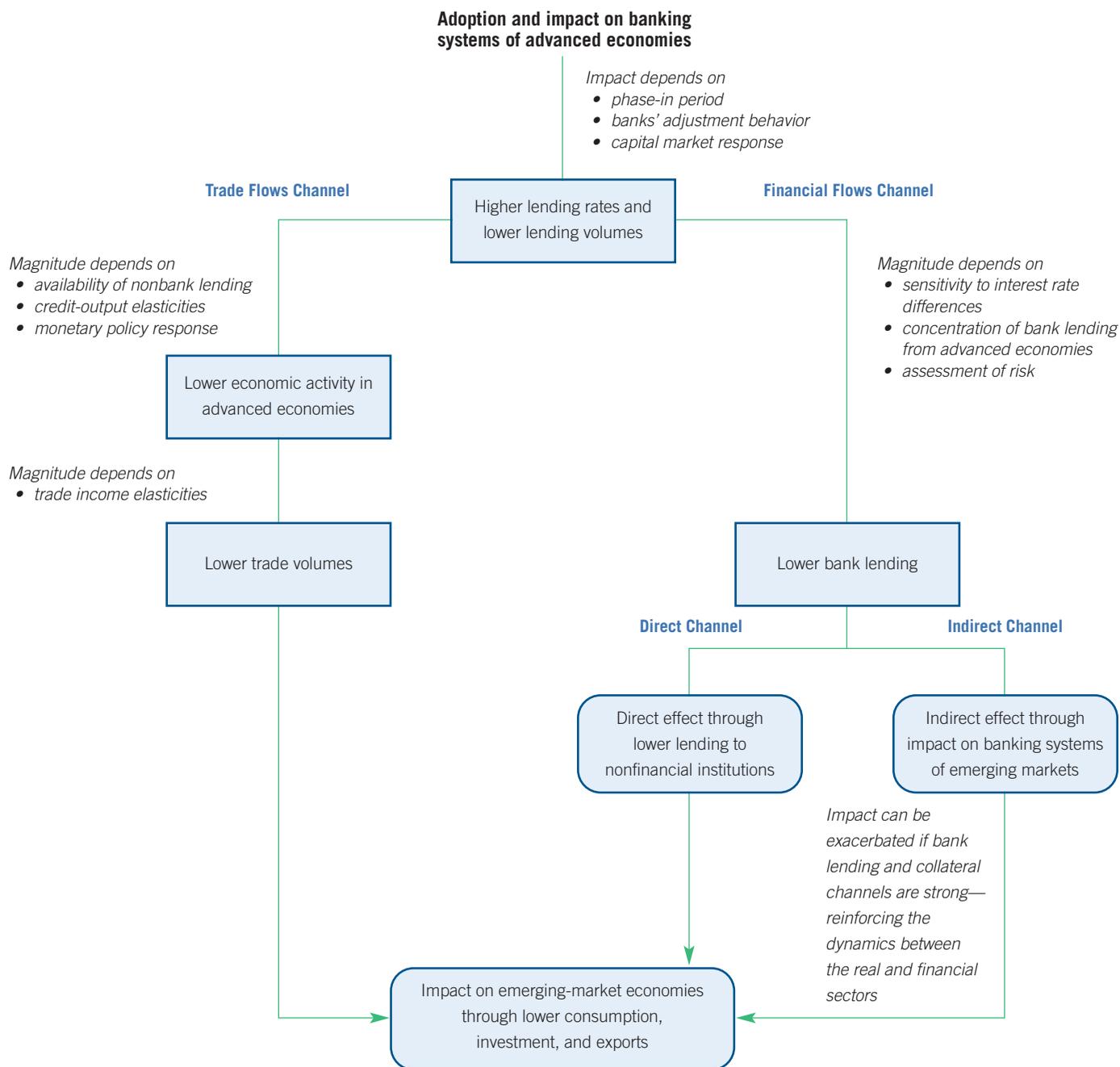
a. The range depends on how much capital adjustment is needed from a 1 percentage point increase to a 6 percentage point increase. The range of both the increase in interest rates and the decline in economic activity is obtained by taking the estimated impact under each study (namely, a 1 percentage point increase in common equity ratio) and multiplying it by 1–6 percentage points.

differences in assumptions and the debate on the necessary effective increase in capital under the new rules.

### Emerging Markets Are Likely to Be Affected through Both Trade and Financial Flows Channels

Although the magnitude is subject to considerable uncertainty, there is agreement that there is likely to be some short-term impact in countries adopting Basel III.<sup>3</sup> To the extent that short-term impacts materialize, emerging markets are likely to be affected through several channels, even if one excludes the impact from emerging markets themselves adopting Basel III (figure 1). Two of these channels are of particular importance. The first channel, which could be referred to as the “trade flows channel,” acts through lower economic activity in advanced economies and consequent lower import activity on their part. The quantitative impact of this channel depends on trade income elasticities. The second channel, which we will refer to as the “financial flows channel,” is through higher interest rates and the decline in bank flows from advanced economies to emerging markets. The

**Figure 1. Short-Term Impact of Proposed Basel III Regulations on Emerging Markets**



Source: Authors' illustration.

quantitative impact will depend on interest rate differentials, global risks, and the overall dependence on such flows, among other things.

In turn, within the financial flows channel, there is a direct lending effect (lower lending from banks in advanced economies to nonbanks in emerging markets) and an indirect lending effect (lower lending from banks in advanced economies to banks in emerging markets). These effects might reinforce each other in the presence of agency prob-

lems in financial markets as a result of asymmetric information and the costliness of enforcing contracts. For instance, curtailment of direct loans to firms in emerging markets could lead to a decline in investment, economic activity, and asset prices. Specifically, if collateral is an important determinant in banks' lending decisions (as is generally the case in emerging markets because of the costs of enforcing contracts), the decline in asset prices can reduce domestic bank lending. This also reinforces the initial decline in direct lend-

ing from banks in advanced economies. The impact of less lending by banks in emerging markets will also depend on the degree to which other forms of financing are or are not available to borrowers. For instance, small and medium enterprises might not be able to offset the decline, given their lack of access to stock or bond markets.

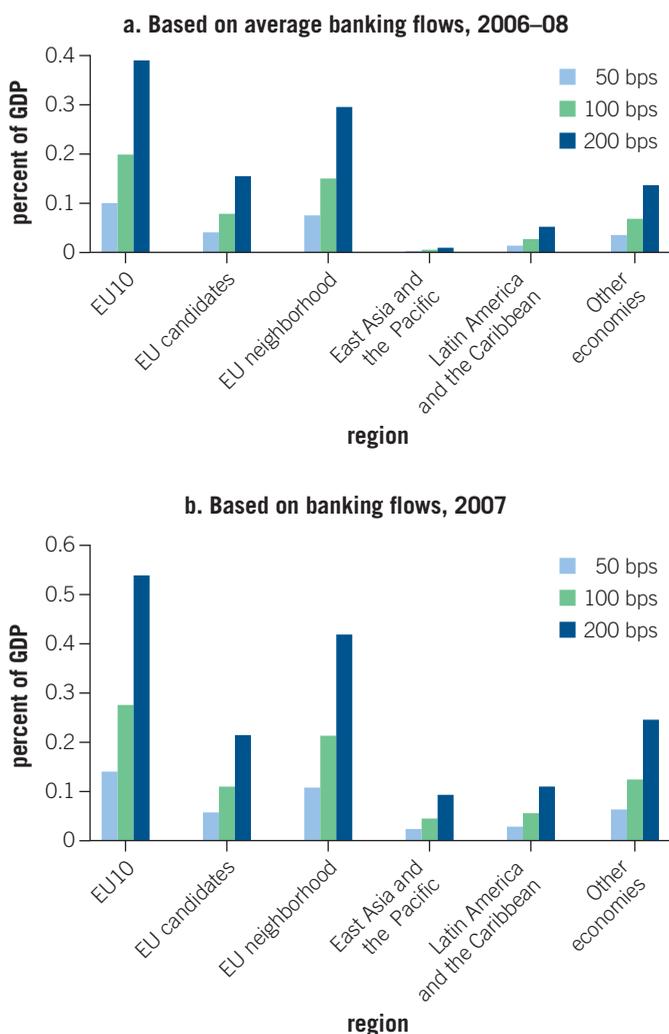
### The Impact across Regions Will Be Differentiated

Focusing exclusively on the financial flows channel through both direct and indirect lending, we simulate the likely impact of increases in lending rates in advanced economies of the kind discussed in table 1. The simulations are based on an analysis of the determinants of bilateral banking flows from 17 advanced to 28 emerging markets in the Bank for International Settlements locational statistics on bilateral banking flows (see Ghosh, Sugawara, and Zalduendo forthcoming). The determinants include the traditional push (global) and pull (country-specific) factors that are typically identified as important determinants of capital flows, as well as indicators of nonfinancial and financial links. These links include measures of financial interconnectedness between lending and borrowing countries and indicators on financial contagion.

Of course, these simulations should be viewed with caution because they assume there are no other changes. For instance, the implicit assumption is that the behavioral responses will remain as valid even after a structural change of the kind introduced by the new Basel III requirements. Moreover, the calculations do not control for a reassessment of risks in emerging market economies following the global financial crisis. In fact, it could be argued that, on this count alone, capital flows are likely to be much more subdued than in the precrisis period. Disregarding these caveats, we expect that emerging markets will record a decline of 3 percent in banking inflows for each decline of 100 basis points in interest rate differentials—the change of 100 basis points is in line with the MAG and IIF reports.

At the level of each region, the impact will also depend on individual countries' reliance on banking flows. We choose two different scenarios: the first is relative to the average inflows during 2006–08, and the second is relative to the average inflows of 2007. In both cases, we assume interest rate differentials declines of 50, 100, and 200 basis points. It is not surprising that the impact varies significantly across regions, ranging from 0.25 percent of GDP among the EU10 for each change of 100 basis points to negligible levels in the East Asia and Pacific and the Latin America and the Caribbean regions (figure 2).<sup>4</sup> Thus, for some regions—emerging Europe, in particular—the impact is not negligible, and this would add to the likely broader reassessment of emerging markets' risk mentioned earlier.

**Figure 2. Potential Impact of Basel III on Banking Flows to Emerging Markets**



Source: Authors' calculations.  
Note: bps = basis points.

### Notes

1. Banks can meet higher capital ratios in three ways: (1) issuing new equity; (2) increasing retained earnings through a number of measures (reducing dividend payments, enhancing operating efficiency, raising average margins between borrowing and lending rates, and increasing noninterest [fee] income); and (3) reducing their risk-weighted assets by lowering the size of loan portfolios, reducing or selling nonloan assets, and shifting their balance sheet toward less risky assets.

2. In an idealized world where the conditions set out by the Modigliani-Miller theorem hold, this effect is just enough to offset the increased weight of the more expensive

equity in the capital structure so that the overall cost of capital stays fixed as the bank leverage varies.

3. Over the medium to long term, banks would only face the stock costs of holding higher capital. The Bank for International Settlements has also undertaken a long-term impact study in which it considers both the benefits and the costs of the new regulations. It thus assesses the shift from one steady state to another (with and without reforms) when the transition to the higher capital standards has been achieved. The study finds that a 1 percentage point increase in the capital requirement translates into a 0.09 percent median loss in the level of steady-state output. But, of course, there are benefits from holding higher capital in as much as it succeeds in lowering the frequency and severity of financial crises.

4. The average inflows to emerging Europe over the 2006–08 period was about 7 percent of GDP, thus resulting in a decline of 0.28 percent of GDP for each interest rate differentials decline of 100 basis points. This assumes, however, that there are no changes in interest rates in borrowing countries.

## References

- BCBS (Basel Committee on Banking Supervision). 2010. *The Basel Committee's Response to the Financial Crisis: Report to the G20*. Basel, Switzerland: Bank for International Settlements. <http://www.bis.org/publ/bcbs179.pdf>.
- Ghosh, S., N. Sugawara, and J. Zaldueño. Forthcoming. "Banking Flows and Financial Crisis—Financial Interconnectedness and Basel III Effects." Working Paper, World Bank, Washington, DC.
- IIF (Institute of International Finance). 2010a. "Interim Report on the Cumulative Impact on the Global Economy of Proposed Changes in the Banking Regulatory Framework." Washington, DC.
- . 2010b. "The Net Cumulative Economic Impact of Banking Sector Regulations: Some New Perspectives." Washington, DC.
- MAG (Macro Assessment Group). 2010. "Interim Report: Assessing the Macroeconomic Impact of the Transition to Stronger Capital and Liquidity Requirements." Basel, Switzerland: Bank for International Settlements. [http://www.financialstabilityboard.org/publications/r\\_100818b.pdf](http://www.financialstabilityboard.org/publications/r_100818b.pdf).
- Slovik, P., and B. Cournède. 2011. "Macroeconomic Impact of Basel III." Working Paper 844, Organisation for Economic Co-operation and Development. Paris, France. DOI 10.1787/5kghwnhkkjs8-en.

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