

# Making Basel III Work for Emerging Markets and Developing Economies

A CGD Task Force Report

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*The recommendations and views expressed in this report are those of the CGD Task Force as a whole. Affiliations are for identification purposes only. Task Force members participate in their individual capacity, and the views expressed should not be attributed to the institutions listed.*

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# Abbreviations

AML/CFT	anti-money laundering and countering financing of terrorism
BCBS	Basel Committee on Banking Supervision
BCP	Basel Core Principles
BIS	Bank for International Settlements
CGFS	Committee on the Global Financial System
D-SIB	domestic systemically important bank
EAC	East African Community
EMDEs	emerging markets and developing economies
FFIEC	Federal Financial Institutions Examination Council
FSAP	Financial Sector Assessment Program
FSB	Financial Stability Board
G20	Group of 20
G-SIB	global systemically important bank
HQLA	high-quality liquid assets
IBRN	International Banking Research Network
IFI	international financial institution
IFRS	International Financial Reporting Standard
IMF	International Monetary Fund
IRB	internal ratings-based (approach)
LBS	locational banking statistics
LCR	liquidity coverage ratio
MAC	Monetary Affairs Committee (of the EAC)
MDB	multilateral development bank
NSFR	net stable funding ratio
OTC	over-the-counter
REER	real effective exchange rate
R-SIB	regional systemically important bank
RWA	risk-weighted assets
SMEs	small and medium-sized enterprises
SPV	special-purpose vehicle
TLAC	total loss-absorbing capacity



# Glossary

**Affiliate:** A branch or subsidiary of a financial institution (a branch is typically an integrated part of the parent bank; a subsidiary is an incorporated entity)

**Asset class:** A group of securities that exhibit similar characteristics, behave similarly in the marketplace, and are subject to the same laws and regulations

**Bank subsidiary:** A type of foreign entity that is located and incorporated in a foreign country but is majority owned by a parent corporation in a different country

**Basel Core Principles (BCP):** The de facto minimum international standard for sound prudential regulation and supervision of banks and banking systems

**Capital conservation buffer:** A buffer for the purpose of absorbing losses during periods of financial stress. (Capital under this ratio, set at 2.5 percent of risk-weighted assets, must be composed exclusively of common equity.)

**Countercyclical capital buffer:** A buffer for the purpose of limiting procyclicality, which should be built up in good times and can be drawn down in times of stress (Under Basel III, this buffer fluctuates within a range of 0 to 2.5 percent according to national circumstances. Capital under this buffer must be formed by common equity or other fully absorbing capital.)

**Credit enhancement:** In securitization, refers to a risk-reduction technique that increases the credit profile of structured financial products or transactions

**Gold-plating:** Setting capital requirements a few percentage points above international standards (see Box 7)

**High-quality liquid assets (HQLA):** Assets that can be easily and immediately converted into cash at little or no loss of value

**Internal ratings-based (IRB) approach:** A method for estimating credit risk where, under certain conditions, banks are allowed to use their own internal models for this purpose

**Leverage ratio:** Under Basel III, a non-risk-based ratio calculated by dividing a bank's Tier I capital by its average

total consolidated assets—that is, the sum of the exposures of all assets and non-balance sheet items (Banks are expected to maintain a leverage ratio in excess of 3 percent under Basel III.)

**Liquidity coverage ratio (LCR):** A ratio that requires banks to hold an amount of high-quality liquid assets sufficient to fund cash outflows for 30 days under a severe-stress scenario

**Macroprudential regulation:** An approach to financial regulation that aims to mitigate risk to the financial system as a whole (systemic risk)

**Net stable funding ratio (NSFR):** The amount of available stable funding relative to the amount of required stable funding; under Basel III this ratio should be at least 100 percent on an ongoing basis

**Output floor:** A component of Basel III stating that banks' calculation of risk-weighted assets (RWA) generated by internal ratings-based models cannot, in the aggregate, be less than 72.5 percent of the RWA estimated using the standardized approach

**Over-the-counter (OTC) derivatives:** Derivatives that are traded between two parties without going through an exchange or other intermediary

**Regulatory arbitrage:** A practice whereby firms exploit loopholes in regulatory systems in order to circumvent unfavorable regulation

**Revolving credit facility:** A line of credit where the borrower pays a commitment fee to a financial institution to borrow money and is then allowed to use the funds when needed

**Standardized approach:** A method for estimating credit risk whereby country supervisors set risk weights that banks have to assign to their exposures

**Tier I capital:** The central measure of a bank's financial strength from a regulator's point of view; it is comprised of core capital, which under Basel III consists primarily of common shares, retained earnings, and other reserves, but may also include capital instruments with no fixed maturity



# Executive Summary

A sound financial regulatory framework is critical for minimizing the risk imposed by financial system fragility. In the world's emerging markets and developing economies (EMDEs), such regulation is also essential to support economic development and poverty reduction. Meanwhile, it is increasingly recognized that global financial stability is a global public good: recent decades have seen the development of new international financial regulatory standards, to serve as benchmarks for gauging regulation across countries, facilitate cooperation among financial supervisors from different countries, and create a level playing field for financial institutions wherever they operate. For the worldwide banking industry, the international regulatory standards promulgated by the Basel Committee on Banking Supervision (BCBS) stand out for their wide-ranging scope and detail. Even though the latest Basel recommendations, adopted in late 2017 and known as Basel III, are, like their predecessors, calibrated primarily for advanced countries, many EMDEs are in the process of adopting and adapting them, and many others are considering it. They do so because they see it as in their long-term interest, but at the same time the new standards pose for them new risks and challenges. This report assesses the implications of Basel III for EMDEs and provides recommendations for both international and local policymakers to make Basel III work for these economies.

The report considers three different channels through which Basel III can affect financial stability and development in EMDEs: (1) effects on the volume, composition, and stability of capital flows arising from the implementation of Basel III in advanced economies; (2) effects on financial stability and a level playing field from the adoption of the Basel framework by the home countries of affiliates of foreign banks operating in EMDEs; and (3) effects on financial stability, broad access to financial services, and deepening of local

financial systems from the implementation of Basel III by EMDEs themselves.

## Methodology

The report is based on a conceptual framework that combines, on the one hand, certain specific characteristics of EMDEs that distinguish them from advanced economies, with, on the other, a set of principles that aim to *make Basel III work for EMDEs*. Although EMDEs as a group are quite heterogeneous, the financial systems in most show the following critical differences, relative to financial systems in advanced countries, that need to be considered when designing a regulatory framework:

- *Highly variable access to international capital markets*, with large fluctuations in capital inflows, including the risk of sudden stop. Many EMDEs can borrow only in dollars or other hard currencies and not in their own currency; this introduces an additional source of fragility.
- *High macroeconomic and financial volatility*. This volatility is explained by a number of factors, which vary significantly between countries. These factors include a high sensitivity to commodity prices, sectoral concentration of bank loans, procyclical fiscal policy, and sociopolitical volatility
- *Less developed financial systems*, mostly bank-based, with a limited role for capital markets
- *Limited availability of market data and limited transparency*, which generally go hand in hand with the underdevelopment of their financial systems
- *Capacity, governance, and general institutional constraints*, which make the adoption and effective implementation of financial regulatory standards, including Basel III, challenging.

These five characteristics help explain why the impact of international regulatory reforms, such as those under Basel III, is expected to be different in EMDEs than in advanced countries. They also imply the need for a differentiated approach to bank regulation to make Basel III work in these countries.

With these characteristics as a starting point, the report's analysis and recommendations build on three principles:

- I. *Minimize the negative spillover effects of Basel III adoption in advanced countries*, which might arise from effects in cross-border lending to EMDEs and the emergence in EMDEs of an unlevel playing field between affiliates of global banks and domestic banks.
- II. *Aim for proportionality in applying standards*, by adapting them to EMDEs' circumstances so as to maximize the benefits of stability for their financial systems. This implies both proper specification of risks and adequate calibration and adaptation of standards to those risks without weakening the prudential and supervisory framework.
- III. *Minimize the trade-offs between financial stability and financial development*: Although the primary objective of financial regulation is financial stability, the economic and social returns to further financial deepening are substantially higher in EMDEs than in advanced economies, calling for a balance between stability and development concerns.

## Minimizing Potential Spillovers on EMDEs

Potential adverse spillovers on EMDEs from the adoption and implementation of Basel III (and the Basel framework more generally) in advanced economies can materialize in two ways. One is through effects on the volume, composition, and stability of cross-border financial flows; the other is through effects on financial

stability and the level playing field between foreign bank affiliates and domestic banks.

Since the global financial crisis of 2008–09, **cross-border lending** from global banks to EMDEs have fallen sharply, including from US banks, whose lending to advanced economies has recovered since 2014. This trend has been only partly countered by an increase in bond issuance by EMDEs and an increase in South–South lending (lending from large banks in EMDEs to other EMDEs). While acknowledging the multiple factors behind this trend, the report provides some insights (but no definite conclusions) supporting the view that the adoption of Basel III in advanced countries may have played a role.

These recent trends have important policy implications, but also call for more analysis. Here it would be helpful if regulators from advanced economies, following the US Federal Financial Institutions Examination Council's (FFIEC) example, made bank-level data on foreign exposures public, including on loans to EMDEs. This would allow the currently extremely limited research on the effects of Basel III on cross-border lending to EMDEs to be expanded. If these data cannot be made public, the Task Force recommends that the International Banking Research Network (IBRN), a group of researchers from over 30 central banks and multilateral institutions that analyzes issues pertaining to global banks, broaden and deepen their analysis on cross-border spillover effects for EMDEs.

Further assessment of cross-border spillover effects is also needed from multilateral organizations. We recommend that the World Bank follow up on a recent pilot and undertake more surveys on the impact of regulatory reforms, covering a large number of EMDEs on a regular basis (every two or three years). We also call for more case studies, in the form of evaluation assessments, as part of a surveillance scheme for the specific purpose of identifying these spillover effects as more EMDEs adopt the Basel Accord. The FSB, in collaboration with the BCBS, is the natural institution to take responsibility for this task, extending the country coverage of its framework on the postimplementation

evaluation of G20 regulatory reforms. We recommend that the FSB ask the World Bank or the IMF or other multilateral development banks (MDBs) to undertake this work, in collaboration with EMDE regulators and analysts.

Concerning the shift from bank- to market-based borrowing by EMDEs, a crucial question is whether increased reliance on the latter provides a more stable source of external funding. For example, is the behavior of institutional investors that hold EMDE bonds more (or less) procyclical than that of international banks holding claims on these countries? Clarity on this issue would lead to appropriate recommendations that avoid exposing EMDEs to excessive risk while not unduly limiting their access to much-needed external sources of finance. Resolving these issues constitutes an important agenda for the IMF and other international financial institutions (IFIs).

The increase in South-South cross-border lending offers a number of advantages for EMDEs: it supports the internationalization (or in some cases regionalization) of their financial systems, which can lead to greater financial inclusion and, if well managed and supervised, to greater financial stability. However, observed weaknesses in the banking systems' oversight of the Southern lenders, together with deficiencies in risk assessment mechanisms, indicate that important issues remain to be tackled to improve the quality and sustainability of this lending. Further, macroprudential regulations and policies designed to prevent overindebtedness and potential currency mismatches need to be in place, given the systemic risk that can arise.

Infrastructure finance, a specific type of cross-border flow, has received special attention in the discussion on the impact of Basel III, given the high infrastructure needs of many EMDEs. Although infrastructure finance in advanced countries recovered rapidly after the crisis and has since expanded further, it has stalled in the EMDEs as a group. It is not yet clear whether Basel III can be associated with recent developments, but it does have the potential to influence bank funding

for infrastructure across multiple dimensions. And even though many of the reforms under Basel III are not yet in effect, banks may have already responded to expected future regulatory changes (especially for long-term assets, banks price in future regulatory changes at origination even when those changes are to be phased in slowly). Under Basel III, higher risk weights for the calculation of capital requirements under the standardized approach and future limitations on the use of banks' internal risk models could make infrastructure funding more expensive, while the large exposure rule limits the ability of smaller banks to fund infrastructure projects. The new liquidity requirements, meanwhile, could have a dampening impact on maturity transformation, an important concern for projects that rely on long-term funding. Surveys of practitioners and EMDE regulators have pointed to concerns about the effects of Basel III on infrastructure finance, but opinions vary greatly about its real impact. This is another area where further research will be valuable.

Finally, we commend current efforts to develop infrastructure as an asset class. If this eventually allows project financing to be developed in a more standardized fashion, and there is agreement on the different dimensions of risk and their quantification, it may become easier to issue securities backed by infrastructure projects, and regulators may be better able to assess the risks for banks' lending to the special-purpose vehicles that often finance such projects. Given sufficient evidence on risks, lower risk weights for the computation of capital requirements might be appropriate for projects that comply with an agreed set of risk parameters.

The potential for **spillover effects through the large presence of affiliates of global banks**, relates to the competition between these affiliates and EMDEs' domestic banks. Supervisors of global banks in advanced economies require that regulations, including Basel III, be applied and enforced on a consolidated basis, that is, to the entire banking group, including its foreign affiliates. But this can mean that the same sovereign exposure might get different regulatory

treatment by home-country than by host-country supervisors. Currently, for example, in calculating capital requirements, most EMDE authorities assign a risk weight of zero to paper issued by their sovereign and denominated in local currency, whereas global banks largely use their own internal rating models for this purpose. Thus, it is plausible that the same sovereign paper issued by an EMDE government could be treated as a foreign currency-denominated asset, with higher risk weight requirements, if held by a local subsidiary of a global bank, and as a local currency-denominated asset if held by a domestic bank. This, in turn, increases the cost to the subsidiary to hold the sovereign paper. Given the importance of these banks in the provision of liquidity of government securities, the financing costs of EMDE governments would face upward pressure. Although this issue has not changed from Basel II to Basel III, its relevance remains high.

We therefore recommend starting a process of analysis and intergovernmental discussion to identify additional conditions to be met by host countries that would encourage global banks and home-country supervisors to apply, at the consolidated level, host-country treatment to local currency-denominated sovereign exposures. One possibility is to agree on threshold values for a set of easily verifiable and widely available macrofinancial indicators (including, but not limited to, international credit ratings). For host countries whose indicators surpass the thresholds, home-country supervisors and global banks would accept, at the consolidated level, the host country's regulatory treatment of these exposures.

Global banks from advanced economies are not the only banks with a significant presence in EMDEs through their affiliates. The increased role of cross-border South-South lending, discussed above, has been accompanied by an increasing presence of affiliates of emerging markets' banks in other EMDEs, often within the same geographical region and involving new lenders. This poses additional regulatory challenges. To maximize the benefits, it is crucial that EMDE lenders achieve the highest standards of quality

and transparency in their operations. In particular, the new lenders must display high transparency regarding their international lending and demonstrate that they have effective mechanisms for risk assessment when extending large amounts of loans, particularly to low-income countries. Appropriate mechanisms for resolving debt problems, should they arise, also need to be in place.

We further recommend the identification of a set of what we term R-SIBs—regional systemically-important banks—to be subject to a set of regulations combining elements from the Basel III recommendations for domestic systemically important banks (D-SIBs) with those for global systemically important banks (G-SIBs). Deeper cooperation between home and host supervisors in EMDEs is also called for, especially with respect to the quality of capital and workable cross-border resolution mechanisms and early-action processes. IFIs can play an important role here by providing technical assistance. Improved cross-border coordination between supervisors of advanced-economy global banks and supervisors in EMDEs is also needed.

## Aiming for Proportionality

As already noted, the Basel III standards are designed and calibrated primarily for large cross-border banks in advanced economies. Maximizing the benefits of stability for EMDE financial systems requires that these standards be adapted to their circumstances. The complexity of Basel III (and before that Basel II) makes it inherently difficult to implement; in addition, parts of it are less relevant to many EMDEs. Given their limited supervisory capacity, this complexity can invite regulatory arbitrage and regulatory capture. EMDE regulators therefore need to prioritize the key risks (including credit and liquidity risks) in their banking sectors, matching effort to supervisory capacity. Also, in areas where risk modeling requires data that are unavailable or costly to collect, or where modeling itself is costly and subject to high uncertainty (such as for market and operational risk), countries might consider using



simple capital surcharges in lieu of these data-intensive models. On the other hand, we encourage the tapping of unused data sources, such as loan-level data from credit registries, to model credit risk weights to EMDE circumstances, as discussed below.

All that said, we caution against an excessive reliance on proportionality. A danger is that if different countries adapt regulations in very different ways, the whole idea of a common standard may be lost. Such “multipolar” proportionality could erode the level playing field and render cross-country comparisons and assessments more difficult, especially across groups of countries where financial integration is growing. To mitigate this risk, we recommend a regional approach, whereby groups of regulators across each EMDE region would agree on a set of proportional rules for their region. Thus, the principle of proportionality would be maintained but applied in a coordinated fashion among regulators whose financial systems share similar characteristics. Such a set of rules might include agreement on which Basel III approaches to apply, as well as how to adapt specific regulations. We also recommend that international standard-setting bodies develop a set of guiding principles for the development of proportional frameworks and work with these regional groups of regulators.

Moving from the general to the specific, the report discusses how the proportionality principle can be applied to liquidity and capital requirements under Basel III. For example, simpler liquidity ratios might be called for if the data requirements for the liquidity coverage ratio (LCR) and the net stable funding ratio (NSFR) are not easily fulfilled. On the other hand, the typical characteristics of EMDEs—especially their variable access to international capital markets, the shallowness of their interbank markets, and the high correlation in liquidity positions across banks—might make a centralized, systemic liquidity management tool necessary. Specifically, banks could be mandated to maintain a fraction of the liquid assets required to fulfill Basel III requirements with a centralized custodian such as the central bank. This would aid monitoring and would allow

the relevant authorities to publicize the systemwide liquidity available, thus boosting market confidence and preventing systemic problems from occurring in the first place. These liquidity requirements should be remunerated and would form part of the Basel requirements, and thus would simply be a centralized form of compliance. In highly dollarized economies, however, part of this centralized liquidity tool might have to be held in hard currency.

Capital requirements in EMDEs are often “gold-plated”; that is, minimum capital requirements are set above those recommended by international standards so as to signal high regulatory quality. This report calls instead for the proper calibration of risk weights where data are available. Where loan-level data are available, for example through credit registries, and supervisory skills are high, risk weights for credit exposures can be calibrated to country circumstances, thus better reflecting actual risk. Supervisors can then compare these country-specific calibrated risk weights with those under both the standardized and IRB approaches of Basel III before deciding on the weights to be prescribed. As already discussed, the report does not advocate that every country develop its own risk weights, but instead calls for regional or subregional arrangements when possible.

Another relevant aspect of Basel III’s capital requirements is the new countercyclical capital buffer, designed to protect the banking sector from periods of excessive credit growth associated with the build-up of system-wide risk. The credit-to-GDP gap (the deviation of the credit-to-GDP ratio from its trend) is recommended by the Basel Committee as the baseline for guiding decisions on the activation and release of the buffer. However, there are concerns about its effectiveness in many EMDEs (or indeed in many advanced countries), especially in countries where structural changes in the data are present. As the Basel Committee has suggested, the focus might have to be on other gauges, including real credit growth, measures of credit conditions (e.g., as gleaned from loan officer surveys), and corporate and household data.

Not only do capital and liquidity requirements as recommended by Basel III have to be adapted to the needs and capacities of EMDEs, but they, along with a core regulatory toolbox in advanced countries, might not be sufficient to address critical stability concerns specific to many EMDEs. A high sensitivity to certain commodity prices (whether as exporter or importer) and high sectoral concentration can result in higher asset concentration on banks' balance sheets and thus greater fragility and a higher probability of losses. Similarly, high price and exchange rate volatility can translate into volatility in banks' liquidity and solvency positions, especially in financial systems that rely heavily on foreign-currency assets and funding. Changes in exchange rates can easily result in asset-liability mismatches or in greater liquidity or credit risk. This situation is worse in countries with high financial dollarization, especially if foreign-currency debt has been taken on by households and firms without foreign-currency earnings or appropriate hedging. There might thus be a need for cruder instruments than proposed under Basel III, including lending and exposure restrictions such as already exist in some EMDEs. Such restrictions would go beyond single-exposure limits and could refer to sectoral, geographic, or foreign-currency lending exposures.

## Minimizing Trade-offs between Financial Stability and Development

As discussed above, the social return on financial deepening is generally higher in EMDEs and has to be balanced against stability needs. Thus, it is critical that a cost-benefit analysis precede introduction of any new regulatory standards, weighing the potential benefits of higher stability against the costs for regulators, regulated entities, and the economy. To smooth the transition to the new standards, regulators should announce the changes early and allow for long implementation periods, including a gradual introduction of tighter capital or liquidity requirements.

In the wake of the global financial crisis, the Basel III reforms also aim to reduce the role of commercial

banks in capital markets so as to protect the core commercial segment of banking. For EMDEs, however, this might tend to reduce the efficiency and development of these still-growing markets, where banks can play an important role as market makers and participants.

In addition, tighter bank regulation and banks' consequent retrenchment might create funding gaps for important sectors such as infrastructure finance. In economies with more advanced financial systems, these gaps can be filled by nonbank financial intermediaries, especially contractual savings institutions, which typically have long-term liabilities that need to be matched with long-term assets (such as life insurance companies, pension funds, and mutual funds), and public capital markets, but these are often underdeveloped in EMDEs and thus need strengthening as bank regulation tightens. The focus here should be on privately owned and managed, but regulated, institutions: excessive political interference in this process must be avoided. To call for the development of nonbank sources of funding is *not* to call for more government-owned and -managed development financial institutions. Whatever their advantages for financial deepening in theory, the experience with direct lending by these institutions in most EMDEs has not been positive.

Important though financial development is, the temptation to use regulatory subsidies, such as more favorable risk weights on capital requirements to alleviate the financing constraints of underserved groups, such as SMEs, must also be avoided. Such subsidization at best has little impact (e.g., in the case of the SME support factor in the European Union) and, at worst can increase system fragility. In line with the Tinbergen rule—the number of policy instruments should match the number of policy objectives—rather than using stability-oriented regulatory tools, it would be better to use other, nonregulatory tools, such as partial-credit guarantee schemes.

Credit enhancements of this type can also support the provision of infrastructure finance. They can be applied by either international players (such as MDBs)



or domestic players to improve the risk profile of bank lending for infrastructure finance through risk sharing and risk mitigation. Such tools can be effective if fairly priced, especially for lengthening maturities and thus better matching the maturities of assets and liabilities for developers. They should attract capital relief, but only in line with the credit rating of the guarantor. Although idiosyncratic risks can be guaranteed at the domestic level, systemic, country-level risks are best guaranteed by global players such as MDBs.

Beyond such market interventions, it is critical to strengthen the institutional framework that enables lending to credit-constrained sectors, including SMEs and infrastructure. Here the focus should be on the establishment and effective functioning of credit and collateral registries, reliable contract enforcement, strengthening the legal system at large, and a competitive economic environment.

More generally, to minimize the tension between the policy objectives of financial development and financial stability, we recommend strengthening the developmental objective of regulation and supervision of nonbank segments of the financial system as a secondary objective to thus rebalance the trade-off. Policy should also ensure a level playing field across different segments of the financial system: this means similar regulatory requirements for similar financial services, as long as the overall risk of the institutions offering the services is also similar. To further promote the development of nonbank financial institutions, countries could create a “champion” for nonbank long-term finance in the regulatory and political landscape. This would follow the example in some countries of financial inclusion champions, which focus on vetting policies and regulations so as to increase inclusion, and on launching new policy initiatives.

## Further Recommendations

Finally, the report also takes a forward-looking view on the process by which international regulatory standards are being designed and adopted.

### *a. Making standard setting more inclusive*

Many EMDEs have shown themselves eager to adopt at least parts of Basel III, despite its having been developed primarily with large cross-border banks in advanced economies in mind. The Basel process should respond by opening its deliberations to more meaningful input from EMDEs. Although some EMDEs are already represented on the Basel Committee, and the greater role of the G20 opens the process to input from the largest ones, more needs to be done to address the interests of smaller and less developed EMDEs. One way would be to include non-G20 EMDEs on a rotating basis. Another would be to create additional chairs to represent certain groups of EMDEs, with rotating membership.

Although the current Basel III framework might not be appropriate for all EMDEs, adoption is often seen as an important signal to the international investor community. It might be worthwhile considering elevating other standards to fulfill such signaling functions instead. For example, compliance with the Basel Core Principles of Effective Supervision (BCP) is a prerequisite for effective implementation of the stricter Basel III recommendations. However, in many EMDEs, there are significant deficiencies in meeting key provisions of the BCPs. The IFIs (including the Basel Committee) could make explicit efforts to favor adoption of the BCP, not Basel III, as the *primary* signal of regulatory quality in EMDEs, to help change the widespread perception that compliance with Basel III is the right metric for EMDEs to follow. One way to go about this would be to set a regular timetable for assessment of individual EMDEs' compliance with the BCPs, perhaps undertaken by the World Bank or the IMF. At present, BCP assessments are undertaken in the context of the FSAP, and not on a regular basis for many smaller developing economies, and the findings are published only with approval of the government.

### *b. Research and learning agenda*

Because many of the effects of Basel III's adoption for EMDEs are not yet fully understood, we also call for an expansive research agenda. We encourage both

further research in the EMDEs themselves and more cooperation and exchange of information between EMDEs. Specifically, EMDE regulators need to deepen mechanisms for learning from their counterparts in other EMDEs as a complement to consultations with international standard-setting bodies. EMDE regulators could also coordinate among themselves on their adoption of Basel III, to identify problems and work on solutions that can be discussed with the standard-setting bodies. Regional associations of EMDE central banks could serve as an institutional setting for such coordination.

An important topic for research within EMDEs is the repercussions of Basel III for credit allocation in the real economy. Many EMDEs have readily available micro-level data for this purpose (e.g., credit registry data). Research initiatives similar to the IBRN, but in EMDEs, coordinated by, for example, regional associations of central banks or the regional development banks, can also be useful.

One specific area where research is needed is the use of macroprudential tools. Such tools are already part of the regulatory toolbox for EMDEs and complement the Basel III tools, but knowledge remains limited about what works and under what circumstances. We

encourage more country-specific research and global cooperation among regulatory authorities in this area. EMDEs are—on average—well ahead of the advanced economies in the use of some macroprudential policy tools that address some of their sources of fragility.

## In Sum

Basel III reflects lessons learned from recent crises, especially in advanced countries. It promises important benefits for financial stability, for both those countries and EMDEs. This report seeks to maximize those benefits for EMDEs, given the particularities of their financial systems. Its recommendations are directed both at EMDE policymakers considering how best to adjust Basel III to their economies' needs, and at home supervisors of global banks whose lending to EMDEs, directly or through local affiliates, is influenced by Basel III. We have also addressed recommendations to the multilateral organizations, including the BCBS and the FSB, as well as the IMF, the World Bank, and regional development banks. One important recurring theme throughout the report is the need for all interested parties to continue to evaluate the impact of the new financial regulation on EMDEs, including through evaluations done in the EMDEs themselves.

# Section I.

## Introduction

An extensive literature has established the importance of an efficient and well-developed financial system for economic development and poverty reduction in the world's emerging markets and developing economies (EMDEs).<sup>1</sup> In these economies, financial fragility and systemic banking crises can cause deep recessions and lead to severe socioeconomic repercussions. Sound financial regulatory frameworks are critical in minimizing the risk of systemic fragility, allowing financial systems to support stable growth in the real economy.

Financial regulatory requirements, including capital and liquidity requirements, address the three basic sources of fragility in the banking system: (1) coordination failure among depositors and creditors, possibly leading to panic, and in turn to liquidity and even solvency crises; (2) moral hazard and the incentives it creates for banks to take aggressive risks, also potentially resulting in solvency problems; and (3) interbank connections and contagion effects, which can lead to widespread bank failures.<sup>2</sup> However, the intensity and relative importance of these different sources of fragility vary across countries, even within the EMDE group. There is also a trade-off between risk and return with respect to financial deepening. Further deepening might provide limited, if any, additional growth in high-income countries, but most EMDEs stand to benefit from more efficient and competitive financial systems, even if this might involve higher risks. Minimizing the risk-return trade-offs associated with increased financial deepening has proved to be a central challenge for financial regulation in EMDEs.

Financial stability is often considered a global public good, given the close interconnectedness of banking

systems across the globe through ownership links, cross-border lending, and the common asset exposures of multinational banks. International accords on regulatory standards—most prominently, the standards set by the Basel Committee on Banking Supervision (BCBS)—aim to achieve this goal of global financial stability. Given the different needs of different countries in terms of regulatory standards, however, global standards can also impose direct and indirect costs on countries' regulatory authorities and their banking systems. The direct costs stem from a possible mismatch of regulatory standards with these needs and with the institutional and regulatory capacities of countries; indirect costs might arise when regulatory standards implemented in one country, or set of countries, affect their banks' cross-border lending and the activities of their affiliates in other countries. Thus, even if these global standards are appropriate and even necessary for global financial stability, they could have adverse consequences for financial deepening in the host countries.

Among international financial regulatory standards applying to banks, those of the BCBS stand out for their broad scope. The reforms recommended under Basel III, the most recent version of the BCBS standards, include capital and liquidity requirements and limits on leverage, as well as specific regulatory treatment for those financial institutions that, because of their size, complexity of operations, and interconnectedness with other institutions, can pose greater risks to the entire financial system.<sup>3</sup> These most recent recommendations, primarily a reaction to the global financial crisis of 2008 in the advanced economies,

1. See, for example, Levine (2005).

2. For a discussion on market failures in banking and how recent regulatory reforms, including Basel III, address such failures, see Beck, Carletti, and Goldstein (2017).

3. Following the global financial crisis that started in 2008, international standard-setting bodies (especially in Europe), under the leadership of the G20, set up a comprehensive reform agenda for improving the regulatory framework governing the activities of banks and other financial institutions.

seek not only to avoid a repetition of that crisis, and the Great Recession and near-death experience of the global financial system that followed, but also to put financial markets back on a sustainable growth path for the benefit of economic activity.

Although these regulatory reforms bring significant benefits for financial stability in both advanced economies and EMDEs,<sup>4</sup> the Basel III recommendations were calibrated primarily for the former. Some key emerging-market economies are members of the BCBS and the Financial Stability Board (FSB),<sup>5</sup> and as such have committed to implementing Basel III, but the adoption of these reforms is optional for the large majority of EMDEs. Nevertheless, many of these countries are in the process of adopting them and adapting them to their local needs and capacities, and many others are considering whether to do so.<sup>6,7</sup> But even in those countries that do not adopt the Basel III standards, negative spillovers can occur from the countries, especially advanced countries, that have adopted them. For example, the adoption of Basel III in advanced countries might affect cross-border lending from banks in those countries to EMDEs, especially infrastructure lending. Similarly, the lending and investment behavior of subsidiaries of advanced-country banks in EMDEs might change as a consequence of the adoption of the Basel framework in their home countries, as the

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4. While many observers do not view these standards as perfect, the progress made in improving the resilience of banks and banking systems and in reducing fragility risk has been widely recognized, both for advanced economies and for EMDEs. Stronger capital buffers can reduce the probability of failure and give regulators important tools for tackling financial distress in individual banks. The newly introduced liquidity requirements address maturity mismatches on bank balance sheets and create standards to measure liquidity risks. The introduction of countercyclical capital buffers provides regulators with new tools to address fragility risks arising from credit cycles. These reforms go hand in hand with other important reforms, including bank resolution frameworks to address risk-taking incentives in the banking system through bail-in requirements, and market structure reforms to improve the transparency of financial markets and the monitoring capacity of supervisors.

5. Leading emerging markets that are in the process of implementing Basel III include Brazil, China, India, Mexico, and South Africa. As FSB members, these countries are bound to implement G20-agreed financial reform—in particular, Basel III.

6. Section V discusses the plausible effects of adopting or adapting Basel III standards in non-FSB EMDEs.

7. The BCBS has set up a calendar of implementation for internationally active banks, with a phase-in plan that started in 2013 for some standards, leading to full compliance by 2022 (or 2027 for compliance with the so-called *output floor*, discussed later in this report).

new standards generate incentives for banks to reduce their exposure to certain market segments in some EMDEs.<sup>8</sup> These indirect spillover effects are a consequence of international financial integration, which, has not only brought many benefits to EMDEs, but also brings new sources of risk and poses new challenges related to these regulatory spillovers.

In addition, direct effects (and possible costs) of Basel III can come about through its adoption by EMDEs themselves. A first concern is that some of the Basel III recommendations might not meet EMDEs' stability needs, given their different sources of fragility, and given that the tools and policies included in the Basel III framework might prove less effective in these countries. At the same time, the Basel reforms might have unintended adverse consequences for some specific segments of local banks' lending, possibly including small and medium-sized enterprise (SME) finance, a segment with few alternative financing sources. Another potential problem is that because most EMDE financial systems are bank dominated, with a limited role for capital markets, any bank regulatory reform will necessarily have a greater impact on the overall financial system, and thus on the real economy, than in countries where banks are less dominant. At the same time, given the important role of banks in helping build up capital markets in EMDEs, any reduced role of banks in these markets stemming from regulatory reform could actually hamper the development of nonbank segments of the financial system.

## Purpose, Approach, and Scope of the Report

The ultimate objective guiding this report is *making Basel III work for EMDEs*. We in no way question the importance of the Basel III reforms for global financial stability, but rather we provide an assessment of

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8. The pricing policies of foreign affiliates of global banks operating in EMDEs might be modified as they incorporate the cost of tighter regulations. These changes in pricing might result in reduced exposures to specific market segments.

possible unintended consequences of Basel III regulatory reforms on financial systems in EMDEs, and we offer recommendations both to EMDE regulators and to standard-setting bodies to address them. We consider the potential effects of Basel III on EMDEs from three perspectives: (1) the effects on the volume, composition, and stability of capital flows arising from the implementation of Basel III in advanced economies; (2) the effects on financial stability and a level playing field for all banks arising from the adoption of the Basel framework by the home countries of affiliates of foreign banks operating in EMDEs; and (3) the potential unanticipated effects on financial stability, broad access to financial services (financial inclusion), and deepening of local financial systems from the implementation of Basel III by EMDEs themselves. In undertaking this assessment, we recognize that many other factors beyond Basel III may explain recent developments in cross-border flows and banking sector development in EMDEs. This report makes an effort to identify these additional factors and isolate some of the potential effects of Basel III from them. However, rigorous empirical analysis that properly identifies the specific effects of Basel III will have to be left for future research.

The report is based on a conceptual framework that combines, on the one hand, certain specific characteristics of EMDEs that distinguish them from advanced economies, with, on the other, a set of principles that aim to maximize the beneficial effects of bank regulation in EMDEs. We point to five characteristics that, although not universal across EMDEs, are common enough to be relevant to a general discussion: (1) variable access conditions to international capital markets; (2) high macroeconomic and financial volatility; (3) less developed domestic financial markets; (4) limited transparency and data availability; and (5) capacity, institutional, and governance challenges. At the same time, our analysis is guided by three main principles: (1) Any adoption and implementation of Basel III in EMDEs should be *proportional* to the capacity and needs of their financial systems and therefore to the

specific characteristics of these economies. (2) The adoption and implementation of Basel III across the globe should be undertaken in such a way as to *minimize negative spillover effects* on EMDEs.<sup>9</sup> (3) Regulations should *reduce trade-offs between financial development and stability*. We discuss each of these three principles and the above five EMDE characteristics in the next section. We then proceed to analyze the issues raised by Basel III for EMDEs in terms of these characteristics and principles. This analysis will allow us to provide specific recommendations for maximizing the stability-enhancing effect of Basel III in EMDEs, while containing any negative effects on financial development, inclusion, and efficiency.

It is important to note the limitations and boundaries of this report. We will not discuss different regulatory approaches or the relative importance of market versus supervisory discipline. We also abstract from other important components of the financial safety net, such as licensing, the resolution of bank solvency problems, and deposit insurance. Instead we focus specifically on capital and liquidity requirements as proposed under Pillar 1 of the Basel III accord, although we fully recognize the importance of the recommendations under Pillars 2 and 3 as well. Annex I summarizes the basic features of Basel III related to capital and liquidity requirements and is based on BCBS (2017b).<sup>10</sup>

The remainder of this report is structured as follows. The next section presents the three principles and the five characteristics of EMDEs that underpin our analysis. Section III discusses the possible impact of the adoption and implementation of Basel III in advanced

9. Such an objective is easier to state than to implement. However, we will discuss some ways to address the potential issues that may arise. We do not advocate sacrificing financial stability in one country to achieve stability in another, but some rules in, say, the advanced economies may not be fundamental for stability but may have deleterious (and often unintended) consequences in EMDEs.

10. Another major reform, not covered in this report, has been the introduction of total loss-absorbing capacity (TLAC) for systemically important financial institutions, with the purpose of creating an additional buffer of liabilities that can be bailed in if capital is exhausted, thus facilitating the resolution process. The effect of TLAC is very similar to that of higher capital, in that it not only promotes stability but also raises the costs of lending.

countries on cross-border banking flows to EMDEs, including infrastructure finance. Section IV focuses on the impact of the presence and activities of affiliates of multinational banks in EMDEs. Section V discusses the potential effects of Basel III adoption by

EMDEs themselves. Sections III–V also present our recommendations for dealing with those identified impacts deemed to be undesirable for the stability, development, and inclusiveness of EMDE financial sectors. Section VI concludes.



# Section II.

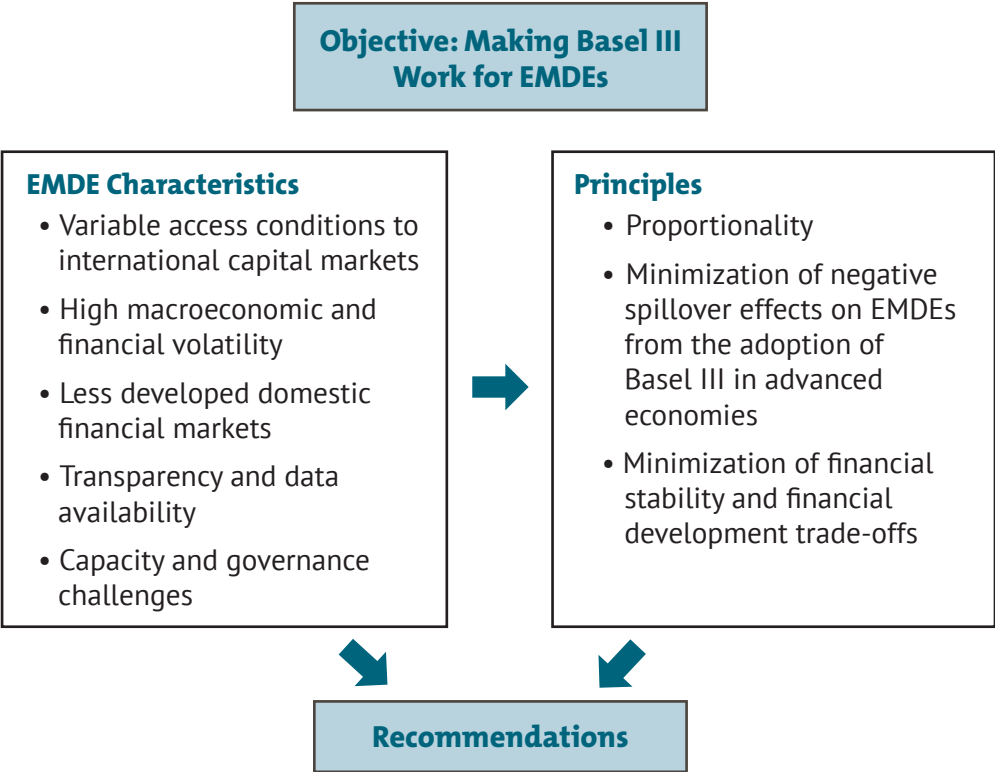
## Conceptual Framework

This section presents the conceptual framework for our analysis and recommendations. The novelty of our analysis is that it focuses on the adoption of Basel III from the viewpoint of EMDEs, rather than from that of advanced economies. Our ultimate objective is thus to *make Basel III work for EMDEs*. From this overarching objective we derive three principles, which in turn are informed by certain specific characteristics of EMDEs and their financial systems. As shown in Figure 1, it is the interaction of these principles and characteristics that leads to our recommendations. This section will discuss first the five characteristics of EMDEs and then the three principles.

The set of EMDEs is quite heterogeneous; thus, the five characteristics that we identify as relevant apply in different degrees to different countries. Notwithstanding, the following are critical differences between financial systems in advanced countries and those in most EMDEs that need to be considered when designing a regulatory framework:

- **Variable conditions of access to international capital markets.** A key fact of life for most EMDEs is that they cannot count on sustained, continuous access to international capital markets. Rather, their access can vary significantly over time, with large fluctuations in capital inflows, including the

Figure 1. Conceptual Framework of the Report



risk of a *sudden stop*. Further, unlike what is normal in advanced countries, many EMDEs can borrow only in dollars or in other hard currencies and not in their own currency,<sup>11</sup> and this introduces additional sources of fragility. The terms of access to dollar funding markets for EMDEs may vary depending on global dollar liquidity, the risk aversion of investors, and contagion—the fact that a crisis in one EMDE may impact access conditions for others, as happened in the 1997 East Asian crisis, the 1998 Russian default, and the global financial crisis after the collapse of the US investment bank Lehman Brothers in 2008. Unlike advanced countries, most EMDEs do not have easy access to swap lines with major central banks, an important component of the global financial safety net. The terms of access also depend on the economic and financial conditions in each EMDE, a second important characteristic that we turn to next.

- **High macroeconomic and financial volatility.** Both output growth and some key financial variables, such as real interest rates and real exchange rates, are highly volatile in many EMDEs, a consequence of both external and domestic factors. Most EMDEs are small, open economies; many are highly dependent on exports of one or a few commodities, and many (sometimes the same ones) must import most of their oil. This implies that when the terms of trade for these countries are volatile, it contributes to volatility in the economy as a whole. This high economic volatility, with associated real exchange rate volatility and a high sectoral concentration of bank loans, implies greater risks for banks' balance sheets, given their limited ability to hedge or to deploy other risk management options. These risks tend to be amplified in those EMDEs that are highly dollarized, where a substantial fraction

of deposits and loans is denominated in foreign currency. High macroeconomic volatility can also be driven by poor domestic policies, such as procyclical fiscal policy, and more broadly by volatility in the sociopolitical realm.

- **Less developed domestic financial markets.** In part as a consequence of their higher volatility and greater risk, domestic saving in many (though not all<sup>12</sup>) EMDEs tends to be low; the resulting limited supply of funding sources for intermediation tends to make their financial markets, including the banking sector and capital (stock and bond) markets small and underdeveloped. On the demand side, meanwhile, the productive sector in many smaller EMDEs is dominated by informal microenterprises, leaving only a very small pool of larger firms creditworthy enough to borrow from formal financial institutions, and an even smaller number that can mobilize funds from the capital markets. This limited share of bankable enterprises limits demand both for banking and for capital market services. Corporate governance, including the protection of minority stakeholders, also tends to be weaker in EMDEs, further limiting the role of capital markets in raising capital. As a result, the financial systems of most EMDEs are overwhelmingly bank-based. At the same time, given that all financial systems feature important fixed costs, including the cost of regulation and regulatory compliance, the smaller scale of the financial sector in most EMDEs<sup>13</sup> implies that banks cannot exploit scale economies so as to reduce these costs in proportion to their total activity. These relatively high fixed costs translate into wider spreads between deposit and lending rates.

11. This is particularly the case in less developed economies. Some emerging market economies, such as Mexico, have been able to issue bonds denominated in their local currency in the international capital markets.

12. The countries in East Asia are a case in point.

13. The smaller scale stems from smaller population and lower GDP per capita, which reduce both the number of available bankable clients in the economies and their assets.

■ **Limited transparency and data availability.** Shallower capital markets also lead to less transparency regarding the nonfinancial corporate sector. Because equity markets are used less for raising finance, and corporate bond markets may be less deep than in advanced countries, there is a scarcity of market data that can be used for assessing and modeling risk.<sup>14</sup> This lack of adequate data can in turn subject credit ratings to larger errors, and a lower proportion of firms will be rated at all. However, many EMDEs' central banks or other bank supervisors have developed extensive loan databases, known as *public credit registries*. Typically, these systems were developed to monitor whether loans are in good standing and to assess appropriate loan loss provisions. But in some countries these databases have been expanded to include several categories of data useful for assessing the riskiness of performing and nonperforming loans; they consequently may be used to calibrate capital requirements and loan loss provisions.

■ **Capacity, governance, and institutional challenges.** Although supervisory frameworks and enforcement capacity have improved significantly in some EMDEs, many others still face both a scarcity of the human capital needed for effective supervision and restrictions on their ability to attract such capital. There are capacity problems in banks and regulatory entities alike, exacerbated by the cost elements mentioned above. These problems might result in “mock compliance,” in which bankers and regulators facing complex Basel rules divert their attention from the need to control their fundamental credit risks and broader socioeconomic and global risks. Some EMDEs also face governance and institutional challenges related to undue influence by politicians and by the regulated entities on the regulatory and supervisory process,

as well as, more generally, to an institutionally weak environment for operational risk, in which theft and corruption are prevalent and the rule of law is insecure.

Of course, some of these challenges also apply to some advanced countries; for example, some smaller advanced countries face the same scale problem in the case of public capital markets that EMDEs do. But the challenges remain more prominent in EMDEs. This is illustrated in Table 1, which contrasts the behavior of some key indicators of the above characteristics in advanced economies and in EMDEs.

Again, however, the group of EMDEs is not homogeneous. For example, as shown in Table 1, a disaggregation of EMDEs into upper-middle-income countries and low and lower-middle-income countries<sup>15</sup> shows significant differences between the two groups. In addition, EMDEs vary greatly in their financial and economic structures. In some, for example, especially in sub-Saharan Africa and Central and Eastern Europe, banking systems consist largely of international banks, while in others (especially in Asia) most banks are domestically owned. Some countries, especially middle-income countries, are heavily exposed to cross-border bank lending, while others, especially low-income countries, rely more on the activities and investments of local affiliates of multinational banks. These variations have consequences for the effects of Basel III implementation in advanced countries on EMDEs' financial systems, as well as for its implementation in EMDEs themselves.

These five characteristics of EMDEs help explain why the impact of regulatory reforms, such as those under Basel III, is expected to be different in EMDEs than in advanced countries. They also imply the need for a differentiated approach to bank regulation to make Basel III work in these countries. These

14. A firm's default probability and loss given default are thus harder to estimate.

15. The grouping of countries by level of income follows the World Bank classification, with one modification: our sample of upper-middle-income countries also includes countries that, although classified as high-income by the World Bank, are regarded as nonadvanced economies by the BIS; Chile, Czech Republic, Poland, Trinidad and Tobago, and Uruguay are examples. See World Bank (2019).

**Table 1. Selected Economic, Financial, and Institutional Variables: EMDEs vs. Advanced Economies, 2000–2018**

	Advanced Economies		EMDEs		Upper-Middle Income		Low and Lower-Middle Income	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median
Volatility of REER <sup>1</sup>	1.16	1.07	2.27	1.88	1.99	1.48	2.68	2.33
Financial Development Index <sup>2</sup>	0.62	0.69	0.22	0.18	0.30	0.28	0.16	0.13
Credit to GDP (%)	105.95	98.53	35.11	27.11	48.27	41.80	23.80	18.05
Depth of credit information index <sup>3</sup>	3.93	5.00	1.97	0.00	3.00	4.00	1.04	0.00
Rule of Law <sup>4</sup>	1.28	1.32	-0.38	-0.47	-0.01	-0.04	-0.73	-0.76

1. Volatility of the real effective exchange rate (REER) is calculated as the standard deviation of the monthly percentage changes in REER per country. Source: IMF (2018c).

2. This index is based on nine indices that summarize how developed financial institutions and financial markets are in terms of their depth, access, and efficiency. Source: Svirydzhenka (2016).

3. This index measures rules affecting the scope, accessibility, and quality of credit information available through public or private credit registries. Ranges from 0 to 6. Source: Doing Business (2019).

4. Rule of Law captures perceptions of the extent to which agents have confidence in and abide by the rules of society—in particular, the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence. Source: Kaufmann et al. (2010).

characteristics therefore directly relate to the following three principles, which underpin our analysis and recommendations:

- **Aim for proportionality in applying standards.** High volatility, limited financial development, lack of data and transparency, and capacity challenges in EMDEs require that the application of Basel standards be adapted to their circumstances so as to maximize the benefits of stability for their financial systems.<sup>16</sup> Such tailoring is critical because the Basel III standards are designed and calibrated primarily for large cross-border banks in advanced economies and as a reaction to the global financial crisis. Authorities in EMDEs have raised concerns about the complexity of the standards and have even questioned the relevance of some of the recommendations, given their countries' degree of financial and economic development. Two key elements of applying the proportionality principle are the proper specification of risk, and adequate cali-

bration and adaptation of the standards to those risks in ways that do not weaken the prudential and supervisory framework. In some cases this may lead to even stricter (but maybe simpler) rules than in Basel III.

- **Minimize the negative spillover effects of Basel III adoption by the advanced countries.** The close integration of most EMDEs into international capital markets, combined with their variable access to those markets, exposes them to effects from the regulatory decisions of other countries. These effects are a form of externality, as they are not taken into account by those making the decisions, whose responsibility is primarily to their home country. The adoption and implementation of Basel III in advanced economies, and by multinational banks with affiliates in EMDEs, has the potential to generate negative spillover effects. These effects may work through several channels, including reduced cross-border lending to certain sectors that are essential for EMDEs' development and the creation in EMDEs of an uneven playing field between affiliates of global banks and the countries'

16. The need for and use of a proportionality approach has been the topic of analysis in a number of documents by the Financial Stability Institute. See, for example, Castro Carvalho et al. (2017), Hohl et al. (2018), and Restoy (2018).

domestic banks. The latter effect is exacerbated in the case of small EMDEs, where the subsidiary of an advanced-country bank may be systemically important for the financial system, and thus for the economy, whereas the same subsidiary, making up only a small part of the parent bank's balance sheet, is of limited concern to the parent bank's supervisor in the advanced country. An additional, though different, externality is that EMDEs face pressure to follow the advanced countries' lead and adopt Basel III as a means of signaling their own regulatory and supervisory quality, even though their circumstances might call for modifications rather than off-the-shelf adoption.

- **Minimize the trade-offs between financial stability and financial development.** The primary objective of financial regulation is financial stability which is crucial for economic development and growth. But development and growth also rely on thriving and efficient financial markets. Unlike in most advanced economies, limited financial development (compared to high funding needs) in many EMDEs creates a potential trade-off between financial stability and financial development and inclusion, especially when regulatory reforms aimed at enhancing financial stability have unintended consequences for financial deepening and inclusion. Put differently, the economic and social returns to further financial deepening are substantially higher in EMDEs and might therefore justify a somewhat higher risk.<sup>17</sup>

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17. Ranciere, Tornell, and Westermann (2008) show that financial liberalization and deepening can result not only in a higher incidence of systemic distress but also in more rapid economic growth.

On the one hand, stability is a precondition for sustainable financial deepening and creates the necessary trust to allow broadening of the banking system toward previously unbanked segments of the population. On the other hand, as capital risk weights increase banks' greater exposure to riskier households and enterprises, and as regulation provides incentives to close the maturity gap on banks' balance sheets, the quest for higher stability might have adverse repercussions for access to bank funding across different sectors and the maturity structure of bank lending, as we discuss below.<sup>18</sup> Similarly, regulatory reforms aimed at reducing the role of commercial banks in capital markets so as to protect the core commercial segment of banking might have the consequence of reducing the efficiency and development of these markets, where banks can play an important role as market makers and participants. The tension between financial stability and the need for more developed and efficient financial systems to promote economic development must therefore be addressed. Resolving this tension is difficult, not least because whereas stability is a worldwide concern (and recently an increased concern in advanced economies), improving financial development and efficiency is a primary concern for most, if not all, EMDEs.

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18. Issues related to the effects of Basel recommendations on EMDEs have been raised for over a decade, since the time of Basel II. See, for example, Majnoni and Powell (2005), Powell (2004), and Rojas-Suarez (2001).

## Section III.

# Issues Arising from the Adoption of Basel III in Advanced Economies: Potential Capital Flow Spillovers on EMDEs

The role of international banks in EMDEs has been extensively documented.<sup>19</sup> Starting in the 1990s, many EMDEs embarked on a process of financial integration that encompassed a reduction of barriers to cross-border capital flows and increased participation of foreign banks in local financial systems. The benefits and costs of such integration have been extensively debated. On the one hand, given the very low saving rates in some and the lack of capital market development in most EMDEs, the importance of foreign capital in financing their growth and development is well recognized. On the other hand, the propagation of the global financial crisis of 2008–09 from advanced economies to emerging markets, and the associated damage to growth and economic stability, increased awareness about the risks of closer connections between international banks and EMDEs.

As mentioned in the introduction, Basel III stands out as the most prominent international financial regulatory response to the global financial crisis in advanced economies. Against this background, this section discusses mechanisms through which the adoption of Basel III in the advanced economies might affect the behavior of cross-border lending to EMDEs; it also presents recommendations to mitigate potential adverse effects. Section IV will deal with the separate issues raised by Basel III for the operation of affiliates of international

banks in EMDEs.<sup>20</sup> The distinction between lending by global banks through cross-border activities, discussed here, and lending by (often the same) banks through the activities of their affiliates (which are mostly independently capitalized subsidiaries) is a meaningful one, as these two types of operations are not complete substitutes. For example, an important component of financing for infrastructure and other projects by global banks in EMDEs takes place through cross-border lending, including syndicated lending, and not through affiliates. Thus, it is highly improbable that a reduction in a global bank cross-border project lending to an EMDE would be fully offset by lending through its affiliate in that country.

The decade since the global financial crisis has seen significant changes in the volume and composition of cross-border financing to EMDEs. One is that volume has fallen significantly. Although lending activities of global bank affiliates in EMDEs increased in the first years after the global financial crisis, these have declined in most years since 2012 (see Section IV). Two other, related changes have been a huge increase in EMDEs' issuance of debt securities in international capital markets and a surge in bank lending between EMDEs (so-called South-South lending),<sup>21</sup> which together have partly offset the decline in cross-border lending from global banks in

19. See, for example, World Bank (2017).

20. Following the BIS definition, international banks' total foreign claims are defined as the sum of cross-border claims plus foreign offices' local claims in all currencies.

21. South-South lending refers to cross-border lending from EMDE banks to other EMDE banks, rather than from advanced-country banks to EMDE banks.



advanced economies. That is, EMDEs have at least partly shifted from international bank finance to international capital markets for their financing needs, and from borrowing from international banks in advanced economies to borrowing from banks in their fellow EMDEs. Yet another change relates to the composition of products and services funded by international banks: some of the most important of these for the development efforts of emerging-market economies, such as infrastructure finance, seem to be the most adversely affected.

The rest of this section discusses the potential role of Basel III and other factors in accounting for some of these developments; it then advances recommendations.

## The Decline in Overall Cross-Border Bank Lending to EMDEs

Figures 2a and 2b show the recent history of cross-border bank lending to EMDEs.<sup>22</sup> In the period before the global financial crisis (2002–06), this lending increased consistently, following a period of very low or negative net lending associated with the emerging markets' crises of the late 1990s through 2001.<sup>23</sup> The unsustainable lending boom of 2007 and the consequent bust in 2008–09 that characterized the global financial crisis interrupted this pattern. Since then, cross-border bank lending to EMDEs has displayed a declining trend, albeit with significant volatility. Figure 2a shows the aggregate of this lending in billions of US dollars; a similar trend is found for the median value of cross-border lending to EMDEs (i.e., characterizing the *representative* country; see Annex II). Figure 2b shows similar results for the ratio of cross-border bank lending to GDP for upper middle-income and for low- and lower-middle-income countries; the trend also holds for these different income groups. Annex III shows this ratio for different regions of the EMDE group: developing Europe, Central Asia, and Latin America and the

22. China is excluded from this and other related figures because of its very different pattern of behavior compared with that of other EMDEs. See Annex II.

23. Including the Asian, Russian, and Argentinean crises.

24. Negative flow numbers imply that repayment of loans was larger than new disbursement.

Caribbean are seen to be the regions most affected by the postcrisis decline in this form of lending.

This reduction in cross-border bank lending to EMDEs is mostly attributable to global banks from the United States, the United Kingdom, and the Eurozone.<sup>25</sup> Many reasons account for the observed pattern, including demand-side factors (originating with the EMDEs themselves) and individual banks' assessment of risks and profitability across different businesses activities. In addition, since the global financial crisis, some common factors have played a key role in explaining the declining trend. These factors can be characterized as either cyclical or structural.

First, the resolution of severe banking problems in advanced economies called for a process of deleveraging to clean up banks' balance sheets and strengthen capital buffers, resulting in a significant reduction in bank credit growth. The process was facilitated by an unprecedented expansionary monetary policy in these economies, reflected in exceptionally low interest rates and a huge expansion of central banks' balance sheets to ease liquidity conditions and improve borrowers' repayment capabilities.<sup>26</sup>

Second, also as part of the process of improving bank solvency in advanced countries and for the purpose of preventing the eruption of future systemic crises, these countries undertook a significant tightening of their regulations governing the activities of banks. This was achieved most notably through Basel III (and the Dodd-Frank Act in the United States), as well as through complementary supervisory and accounting requirements, such as a systemwide implementation of stress tests to

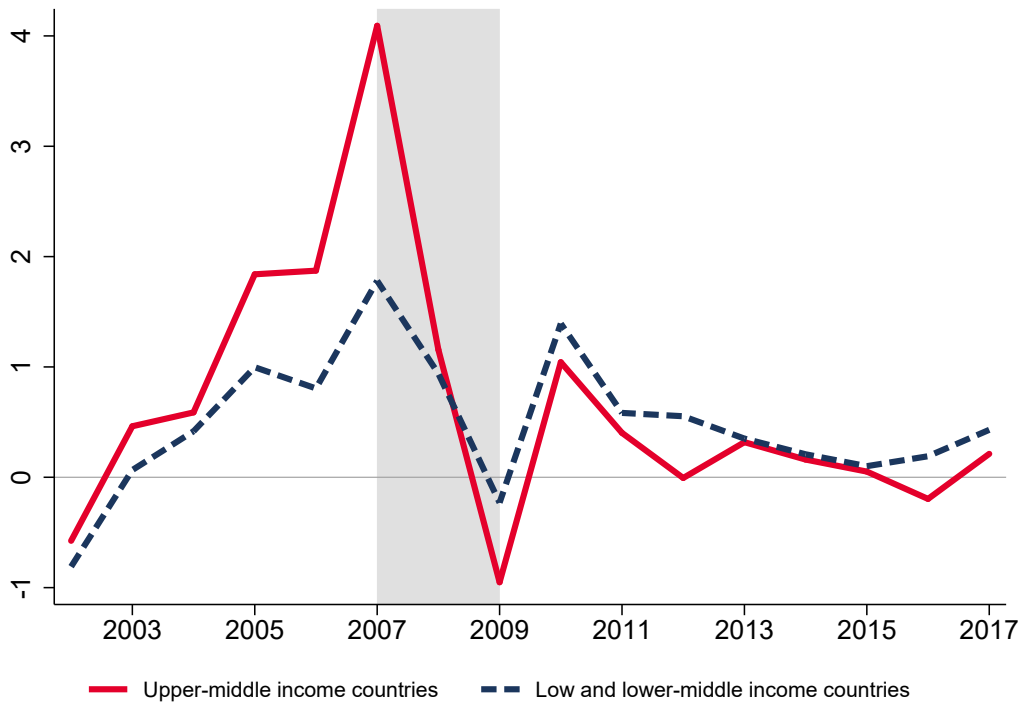
25. Based on BIS data (on a locational basis).

26. For example, in November 2008 in the United States, the Federal Reserve Board initiated the so-called quantitative easing program, through which it purchased large amounts of US Treasury bonds and mortgage-backed securities issued by government-sponsored mortgage agencies. Although in October 2017 the Fed initiated a balance sheet normalization program to gradually reduce the size of these holdings, at the end of October 2018 the Fed's balance sheet, at US\$4.2 trillion, was still more than four times what it had been at the beginning of the crisis (see Board of Governors of the Federal Reserve System, 2018). In the years after the crisis, quantitative easing was also implemented in other advanced economies, including by the Bank of England, the European Central Bank, and the Bank of Japan.

**Figure 2a. Cross-Border Bank Lending to EMDEs (US\$ billions)**



**Figure 2b. Cross-Border Bank Lending to EMDEs by Countries' Level of Income (as % of GDP)**



Source: Authors' calculations based on BIS (2018). Locational banking statistics (LBS) by residence.  
 Note: Data represent foreign exchange and break-adjusted changes in stock values.<sup>24</sup> Excludes China.

assess a bank's strength under adverse scenarios<sup>27</sup> and the new International Financial Reporting Standard 9 (IFRS 9) in Europe.<sup>28</sup> Most recently, in December 2017 the Basel Committee agreed to regulatory changes that will establish an output floor for banks using the internal ratings-based (IRB) approach. The floor will be established in 2022 and will gradually (from 2022 to 2027) increase the stringency of regulation for some banks that use IRB models.<sup>29</sup>

Third, changes in the regulatory environment affecting cross-border bank behavior in the past decade go beyond Basel III and complementary prudential regulatory requirements. Actions to enforce international standards for anti-money laundering and countering the financing of terrorism (AML/CFT standards) have become more stringent following some high-profile cases of sanctions violation.<sup>30</sup> According to the International Monetary Fund (IMF, 2017b), recent surveys indicate that the more active enforcement of these requirements, an increase in the international economic and trade sanction regimes with which banks need to comply,<sup>31</sup> and new initiatives for tax transparency<sup>32</sup> have all contributed to increasing compliance costs for banks. They have also put downward pressure on the profit margins of correspondent banking relationships.<sup>33</sup> In particular, the process of de-risking has been reflected in a significant decrease in correspondent banking relationships between global banks and banks from EMDEs. (See Annex IV for further discussion of the interrelation between AML regulations and cross-border transactions.)

27. Testing exercises, to assess whether banks have adequate capital to absorb losses and support operations during periods of adverse economic conditions, are conducted in the United States under the Comprehensive Capital Analysis and Review and Dodd-Frank Act Stress Testing. The European Banking Authority performs similar tests for banks in the European Union.

28. IFRS 9 has also been implemented in some emerging economies.

29. See Annex I for definitions of the alternative approaches that banks may use in the calculation of capital requirements and the definition of the output floor.

30. BNP Paribas is one of the best-known cases: in 2014, US regulators imposed a fine of US\$8.9 billion on this bank because of Iran sanctions violations.

31. Such as those imposed by the UN Security Council.

32. See IMF (2017b) for examples of these tax transparency initiatives.

33. A correspondent bank is a bank with authorization to provide financial services for another bank in another country. Correspondent banks facilitate the provision of cross-border payments, including trade transactions and remittances.

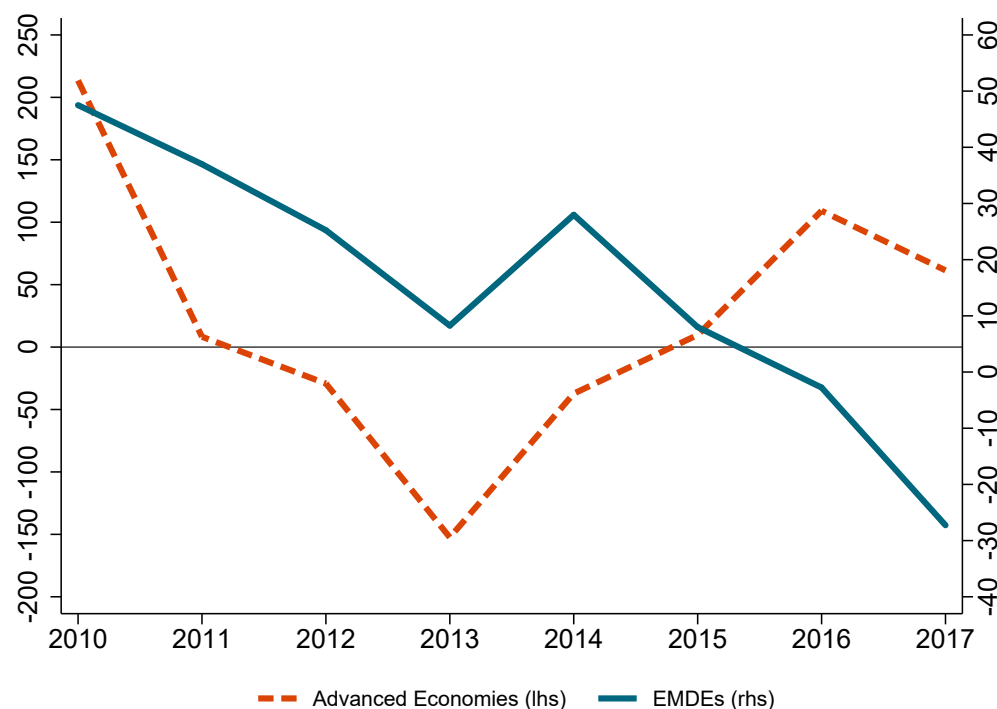
The combination of all these factors has likely created incentives for international banks from advanced economies to reduce their relative cross-border exposure to riskier borrowers, including those in EMDEs. It is therefore difficult to isolate and measure the impact of Basel III from that of other factors affecting the overall behavior of cross-border bank lending. Moreover, as the deadline for implementation of some additional recommendations under Basel III is still some years away, it is hard to know the extent to which global banks have priced in these additional restrictions, if at all. It is important to note, however, that in the case of long-term financing, the phase-in of capital adequacy and other requirements does not matter, since banks expecting higher capital charges in the future will raise the cost or lower the amount of funding (or both) at the time the loan is provided.

One further insight that can help toward isolating the role of Basel III relates to the above distinction between cyclical and structural factors. Whereas the expansionary monetary policy stance and the bank deleveraging process resulting from the global financial crisis are temporary (cyclical) phenomena and have started to reverse (at least in the United States), changes in the regulatory framework argue for a longer-term effect. That is, as a first approximation, it would be reasonable to expect that a return to healthy financial indicators of international banks would also lead to an improvement in overall lending, including cross-border lending, *unless* other, more persistent factors deter banks from these activities.

The recent lending behavior of US banks can shed some light on these issues. Because US banks' deleveraging process has been practically completed, total US bank lending has been recovering since 2014. US banks' cross-border lending to other advanced economies has also been on a rising trend in recent years.<sup>34</sup> However, as shown in Figure 3, their net lending to EMDEs has continued to decline and remained in negative territory in 2017, a year of improved economic growth

34. At the time of this writing, full-year BIS data were available only through 2017.

**Figure 3. US Banks' Cross-Border Lending to Advanced Economies and EMDEs (US\$ billions)**



Source: Authors' calculations based on BIS (2018). LBS by residence.

Note: Data represent foreign exchange and break-adjusted changes in stock values. Excludes China.

in almost all EMDE regions.<sup>35</sup> Although the declining trend might in part be driven by demand-side factors in the EMDEs, it may also signal the persistent effects of structural changes, including regulatory incentives, on US banks' supply of loans to EMDEs.<sup>36</sup>

Although these insights seem valid, appropriate statistical analysis is needed to derive conclusive results. Unfortunately, such analysis is scarce; this can be explained, to a large extent, by difficulties in obtaining data on the cross-border exposure of individual global banks. Bank-level data are essential for studying bank heterogeneity in the application of Basel III for two reasons. First, regulators can apply different rules

for different types of institutions, as described in the discussion on proportionality. Second, individual bank balance sheet characteristics need to be considered when assessing the extent to which the new regulatory requirements are binding and, hence, are having an impact on the provision of cross-border loans. As far as we know, the study by Berrospide et al. (2017) is one of the few using bank-level data to show that the tightening of US bank capital regulations after the global financial crisis had a statistically significant effect on the decline of cross-border claims of US banks in the aggregate and on the emerging-market subgroup. That study found that the so-called Basel II.5 regulations<sup>37</sup> had a stronger negative effect on the largest US banks (those facing the most stringent regulations, including stress testing) than on their smaller counterparts: the former

35. As reported by the IMF (2018a), in 2017 the rate of economic growth increased for EMDEs as a whole (real GDP growth reached 4.8 percent) and for all regions except the Middle East. All regions displayed positive economic growth.

36. While economic growth in advanced economies has been lackluster in recent years, with real GDP growth averaging 1.9 percent for 2013–17, real GDP in EMDEs grew at 4.7 percent. These developments suggest that the observed behavior of cross-border bank lending by US banks is not entirely explained by demand-side factors.

37. See Board of Governors of the Federal Reserve System (2012) for a description of the regulatory changes implemented in the United States in January 2013. The changes implemented revisions made by the BCBS to its market risk framework for 2005–10, except for those revisions that rely on credit ratings for calculating capital requirements for debt and securitization positions.

reduced the growth of their cross-border lending by 5 to 7 percentage points more than the latter. The data set collected by the Federal Reserve Board facilitated this research.<sup>38</sup>

## Bridging the Credit Gap: From Loans to Bonds and from North–South to South–South Lending

Concerns about the decline in cross-border bank lending to EMDEs from advanced economies can be ameliorated if financing from that source is replaced by other stable external sources of finance. Recent years have witnessed two important shifts in these alternative external sources: increased reliance on bond financing, and increased reliance on South–South lending. We will discuss each in turn (trends in funding from affiliates of global banks will be discussed in Section IV).

### From Loans to Bonds

Even as cross-border bank lending to emerging markets has drastically declined since 2010, issuance of debt securities by these countries in international capital markets has reached unprecedented levels. Not surprisingly, some important common factors help explain the behavior of both variables. The (at least partial) shift from borrowing from international banks to issuing bonds in international capital markets can be attributed to the combined effect of the factors discussed earlier in this section. In particular, the exceptionally low interest rates in advanced economies, resulting from their unprecedented monetary expansion, sent international investors looking for higher yields elsewhere. The debt securities issued internationally by entities from emerging markets offered such higher yields; likewise, low interest rates in advanced economies allowed EMDE firms to take advantage of the high-liquidity environment to tap capital markets to finance investment and restructure liabilities. This, together with the reduction in

bank leverage to resolve severe banking difficulties in the advanced economies, and the new regulatory constraints on banks (including from Basel III), is likely to explain the shift by EMDEs toward bond financing. Meanwhile, since the regulatory agenda for banks has proceeded at a much faster pace than that for nonbanks, lending by the latter—including through so-called shadow banking—has expanded rapidly. Moreover, the rapid growth of the asset management industry, and especially of exchange-traded and other passive funds, has helped meet the increased demand for high-yield assets from EMDEs. Figure 4 shows this shift in the composition of EMDEs' external sources of finance from bank lending to issuance of marketable debt.<sup>39</sup>

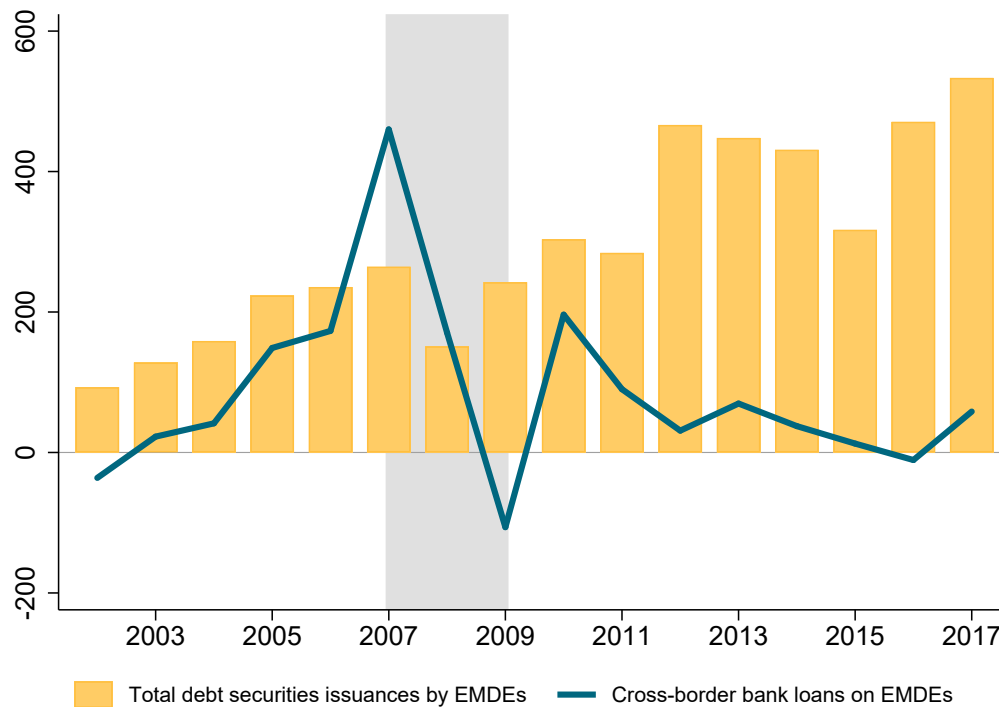
In light of these developments, a crucial question is whether increased reliance on international capital markets will prove a more stable source of external funding for EMDEs than international bank lending. Some reports indicate that a significant proportion of emerging-market bonds are held by institutional investors, such as mutual funds and pension funds, although holdings by hedge funds and individual investors are not trivial.<sup>40</sup> Is the behavior of institutional investors toward emerging-market debt less procyclical than that of international banks? This empirical question has not been fully answered, and there are arguments on either side. Some researchers and market participants argue that international bank lending to EMDEs has shown itself to be highly procyclical, and that a move toward long-term financing from the international capital markets is bound to increase the stability of EMDEs' external funding. In contrast, some experts hold the view that if the perception of emerging markets' risk should deteriorate significantly, asset managers have an incentive to reduce their exposure to these economies based on the argument that expected growth in these countries has fallen.<sup>41</sup> In such a situation, asset managers will sell significant

38. This data set is available from the US Federal Financial Institutions Examination Council.

39. Negative flows indicate higher loan repayments than fresh disbursements. 40. See IMF (2014).

41. See Shin (2013). See also IMF (2014), which argues that asset managers and banks "share the same tendency toward procyclicality. One reason for their procyclical behavior is that asset managers are subjected to trading restrictions based on measures of risks similar to those used by banks" (p. 33).

**Figure 4. Shifting External Sources of Funding in EMDEs (US\$ billions)**



Source: Updated from Rojas-Suarez and Serena (2015) based on BIS (2018). LBS by residence and Debt Statistics data sets.

Note: Excludes China.

amounts of EMDE bonds in the secondary market and will decline to roll over maturing debt securities. On this view there are no significant differences in procyclicality between asset managers and banks.<sup>42</sup> Thus, from the EMDEs' perspective, economic policies and tightened international regulatory standards (including from Basel III) that might decrease these countries' external funding reliance on banks will not necessarily enhance the stability of cross-border inflows to these countries. The lack of consensus in this debate calls for further empirical research.

### The Shift toward South–South Lending

The decline of cross-border lending to EMDEs by global banks from advanced economies has also been partly offset by cross-border loans from banks in other

emerging-market economies.<sup>43</sup> To get a rough assessment of the importance of these South–South banking flows, we follow a simple methodology advanced by the Institute for International Finance (2017) using data from the Bank for International Settlements (BIS) and the IMF. BIS-reporting banks are mostly based in advanced economies, and the majority of them report on their bilateral lending to EMDEs.<sup>44</sup> We can thus approximate cross-border banking flows<sup>45</sup> of non-BIS-reporting banks to EMDEs (as a proxy for South–South lending) by subtracting the value of banking flows by BIS-reporting banks to EMDEs (from BIS data on a locational basis) from the total value of banking flows to EMDEs reported in the IMF balance of payments statistics. The results are presented in Figure 5,

42. In a related paper, Brandao-Marques et al. (2015) argue that different types of mutual funds behave differently with respect to the stability of their investment in emerging markets. For example, global funds were found to be more stable in their emerging-market investments than dedicated emerging-market funds.

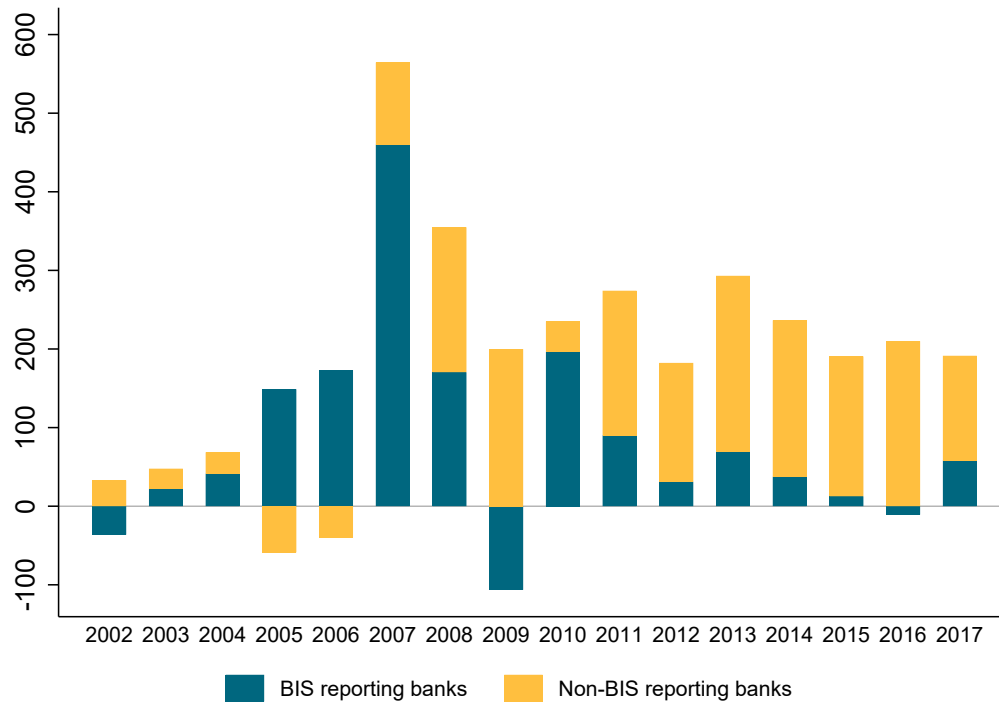
43. For an extended discussion on the recent rise in South–South banking see World Bank (2017). See also Cerutti, Kock, and Pradhan (2018).

44. Two important exceptions of countries that do not report on a bilateral basis in the BIS Locational Banking Statistics are Germany and Japan.

45. Banking flows include loans and deposits by banks.



**Figure 5. Cross-Border Net Banking Flows to EMDEs (US\$ billions)**



Source: Authors' calculations based on IIF (2017) methodology.

Note: BIS data are taken from the BIS LBS by residence. As in previous figures, the data represent changes in stock values. IMF data are taken from the line "other investment: net incurrence of liabilities" in the financial account of the Balance of Payments Statistics. Excludes China from the sample of EMDEs.

in which the yellow bars represent our approximations for South–South lending.<sup>46</sup>

Increased cross-border lending by Southern banks has a number of advantages: it supports the internationalization (or in some cases regionalization) of EMDEs' financial systems, which in turn can lead to greater financial inclusion and, if well managed and supervised, to an overall improvement in financial stability. These features are particularly important if tighter banking regulation, including from Basel III, and other structural developments in advanced economies

are indeed leading to a sustained reduction in cross-border bank lending to EMDEs. Notwithstanding these positive developments, the observed emergence of debt problems in an increasing number of low-income EMDEs (especially in Africa) is raising concerns about the capacity of the new Southern lenders (particularly China) to properly assess borrowers' repayment capacities. That is, the rapid increase in cross-border South–South lending should be viewed as a welcome outcome only if the new sources of funding prove to be sound and stable. The observed weaknesses in the oversight of Southern bank lending and the deficiencies in risk assessment mechanisms to prevent borrowers' overindebtedness indicate that important issues remain to be tackled to improve the quality and sustainability of South–South cross-border lending. Box 1 illustrates these points for the case of China.

46. Two clarifications are needed. First, although large banks from China, India, Russia, and some other important cross-border EMDE lenders are BIS-reporting banks, they do not report their lending on a bilateral basis, but only on an aggregate basis; therefore, we cannot isolate their cross-border lending to EMDEs. Thus, lending from these countries is not included in the blue bars in Figure 5. Second, the blue bars somewhat overestimate lending from advanced economies' banks, since they include banks from Brazil, Chile, Mexico, South Africa, and Taiwan (which are BIS-reporting banks and do report on their bilateral lending).

### Box 1. Opportunities and Risks from Cross-Border South–South Lending: Illustrations from China

Chinese banks' cross-border lending activities have been expanding rapidly. China's official development banks account for the lion's share of this lending. Low-income countries, including countries in Africa and Asia, have become important recipients in recent years in projects such as energy finance. For example, as reported by the Global Development Policy Center at Boston University,<sup>47</sup> in 2016–17 lending for energy finance by the China Development Bank and the Export-Import Bank of China to African countries increased significantly, so that by 2017 Africa was the second largest destination (after Asia) of this type of loan. Some countries in Latin America and the Caribbean have also been recipients of lending from China. However, there are some concerns related to these activities. Chinese banks do not regularly publish information regarding their funding agreements with other countries, and a worrisome development is that a number of African countries are becoming (or have already become) overindebted as loans from China are piled on top of increased stocks of government bonds issued in the international capital markets. These issues may come to a head in any debt restructuring. There have been reports that Chinese loans to Venezuela have already been restructured, although the terms were not made public. In the context of any international rescue package for Venezuela (or any other country) that involves a wider restructuring of bonds as well as of such loans, there will no doubt be a call for greater transparency to ensure that there has been comparable treatment.

<sup>47</sup> See <http://www.bu.edu/cgef/#/2017/Country>.

### Recommendations

The discussion so far leads us to advance several recommendations largely directed to regulators and supervisors in the advanced economies and in those EMDEs that are home to regional or global banks, to other borrower countries, and to multilateral organizations. These recommendations are motivated by two of the principles guiding this report: the need to contain potential negative spillover effects created by the adoption of Basel III in advanced economies, and the goal of minimizing the trade-off between financial stability and financial access and development.

#### *For Advanced-Country Regulators and Supervisors of Global Banks*

Potential negative spillovers from Basel III and related regulatory reforms in advanced economies can be contained only if sufficient and adequate data are available for an appropriate assessment. In this regard, we recommend the following:

- Regulators in advanced economies should, following the example of the US Federal Financial Institutions Examination Council (FFIEC), make bank-level data on foreign exposures public, including data on loans to EMDEs. Currently, the FFIEC mandates that banks holding US\$30 million or more in total claims on residents of foreign countries report their exposure to any country that exceeds 1 percent of the bank's total assets or 20 percent of its total capital, whichever is less. Increased availability of these data would allow an expansion of the currently extremely limited research on the effects of Basel III on cross-border lending to EMDEs.
- If these data cannot be made public, we recommend that the International Banking Research Network (IBRN)—a group of researchers from more than 30 (with the number growing) central banks and multilateral institutions that analyzes issues pertaining to global banks—broaden and deepen its analysis on

the cross-border spillover effects on EMDEs. The IBRN is particularly well suited to do this analysis because of its researchers' technical expertise and access to microlevel data. We also recommend that regulators from EMDEs whose central banks are currently nonmembers of the IBRN make efforts to connect with (and if appropriate, join) this network to take advantage of the methodologies already developed by IBRN researchers.

#### ***For Regulators, Supervisors, and Debt Management Officials in EMDEs That Are Home to Regional or Global Banks***

- To maximize the benefits from improved regionalization and internationalization arising from increased South-South cross-border lending, it is crucial that the new lenders achieve the highest standards of quality and transparency in their operations. In particular, it is essential that the new lenders display high levels of transparency regarding their international lending and demonstrate that they have effective mechanisms for risk assessment when extending large amounts of loans, particularly to low-income countries. Appropriate mechanisms for resolving debt problems, should they arise, also need to be in place.<sup>48</sup>

#### ***For Regulators, Supervisors, and Those in Charge of Debt Management Policies and Strategies in EMDEs That Borrow from EMDE Lenders***

- Borrowers' responsibilities with regards to South-South cross-border lending are just as important as those for lenders. It is therefore essential that borrowers' debt management strategies aim at balancing the risks and benefits of South-South

<sup>48</sup>. At present this recommendation is applicable to China's authorities, given the role of their large banks in extending large loans to low-income countries; it also applies to all countries that are home to regional or global banks that show room for improvement in their risk management processes and standards of transparency (such as the need to regularly publish financial statements and management reports).

lending, as well as those related to all other types of international indebtedness.

- Macroprudential regulations and policies designed to prevent overindebtedness and potential currency mismatch problems need to be in place. Although a number of EMDEs have made significant advances in this area, there is still much room for improvement in many others, including many low-income countries.

#### ***For Multilateral Organizations***

- We recommend that the IMF and other international financial institutions (IFIs) undertake a rigorous research agenda on the relative costs and benefits of international capital market finance versus global bank lending as external sources of funding for EMDEs. One important avenue of research that would provide valuable guidance to EMDEs is a thorough assessment of the conditions under which EMDEs' funding through capital markets is relatively more or less stable than that from international banks. It is crucial to understand whether the behavior of institutional investors holding EMDE bonds is either more or less procyclical than that of international banks holding claims on these countries. Such knowledge would help in deriving appropriate recommendations that neither expose EMDEs to excessive risk nor unduly constrain them from accessing much-needed external sources of finance. This recommendation stems from the principle of minimizing the trade-off between increased financial access (in this case to international capital markets) and greater financial stability.
- Through its country surveys, the World Bank, on its own or in collaboration with other IFIs, could help assess the extent of spillover effects from international regulations on EMDEs. In 2017 the World Bank undertook a "limited countries' survey" (a pilot) along these lines and found that most respondent banks viewed Basel III capital and liquidity requirements as having had an adverse

effect on foreign long-term funding, including for infrastructure finance.<sup>49</sup> Such surveys, covering a large number of EMDEs, should be undertaken on a regular basis (every two or three years), as this would help both in assessing progress on existing issues and in responding to new challenges.

- Case studies, in the form of evaluation assessments, should also be part of a surveillance scheme for the specific purpose of identifying unintended consequences of Basel III in EMDEs as implementation proceeds and more countries participate. The FSB, in collaboration with the BCBS, is the natural institution to take responsibility for this task, extending the country coverage of its existing framework on the postimplementation evaluation of Group of 20 (G20) regulatory reforms.<sup>50</sup> For this purpose, we recommend that the FSB ask the World Bank or the IMF or other multilateral development banks (MDBs) to undertake this work, in collaboration with EMDE regulators and analysts, as part of their mission to maintain financial stability while deepening and increasing the inclusiveness of EMDEs' financial systems.
- As spillovers are identified in individual countries, technical assistance from multilateral organizations for dealing with these adverse effects will be needed. To ensure a timely response, we recommend that the expanded evaluation assessments suggested above be combined with a technical assistance program.

## The Special Challenge of Infrastructure Finance

The decline of cross-border bank lending to EMDEs has manifested itself in a reduction of banks' exposure to certain business lines that are crucial for economic development. Infrastructure finance is an important example. There are also issues with regard to trade finance, which are discussed in Annex V.

49. See Briault et al. (2017).

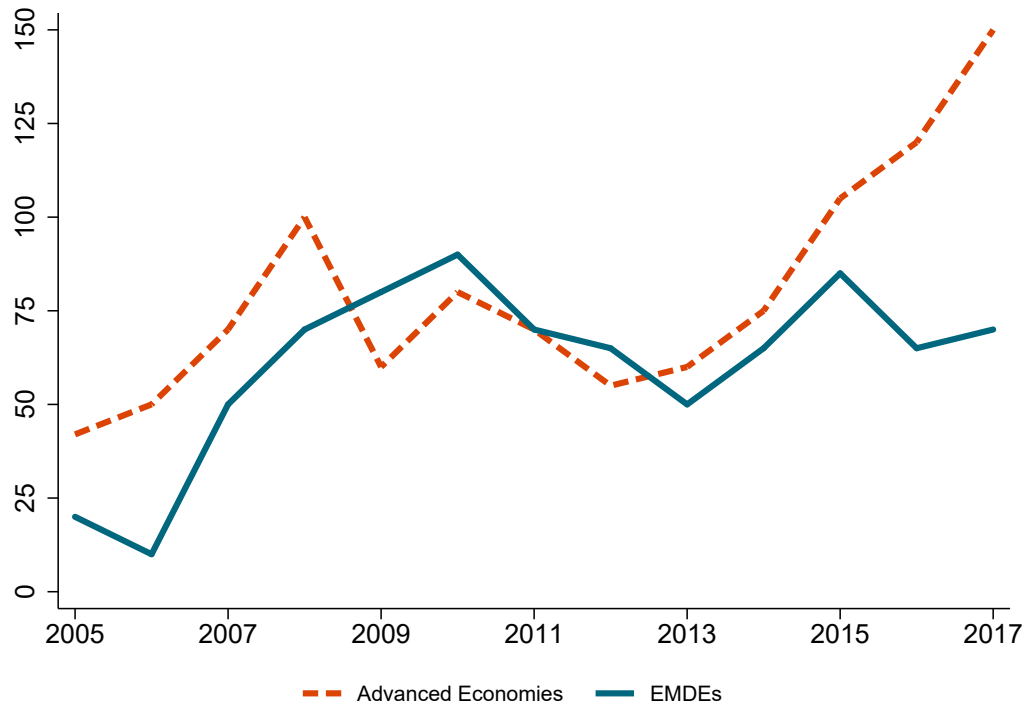
50. See FSB (2017).

Although infrastructure finance in advanced countries recovered rapidly after the crisis and has expanded further, it has stalled in the EMDEs as a group, as shown in Figure 6. One reason for this difference is that, as discussed above, bank finance in advanced countries has been partly replaced by bond finance—an option that is less readily available to many EMDEs (particularly the low-income countries) at the longer maturities necessary for infrastructure funding. Indeed, some banks in the developed world have divested themselves of their project finance portfolios.<sup>51</sup> Although Basel III is only one of several factors that can potentially explain this lack of expansion, there is increasing evidence that it is a slowly moving factor whose greatest impact may be yet to come, posing challenges for EMDEs in the future. The effect of Basel III on bank-based infrastructure finance is a particular concern in many EMDEs given the limited sources of alternative, market-based funding available and the large infrastructure gap that still characterizes these economies.

The possible impact of Basel III on infrastructure finance could manifest itself across several different dimensions, since infrastructure investment in EMDEs is financed from several sources: cross-border bank lending, lending by affiliates of advanced-country banks, and lending by domestic banks. As reported by the FSB (2018b), while infrastructure finance in advanced economies has more than doubled since the crisis, infrastructure finance in EMDEs has remained stable since 2009, at around US\$75 billion annually. According to the same report, more than 60 percent of infrastructure funding to EMDEs comes from funders in advanced economies, and half of overall external funding is from the 10 largest providers, all of them banks. The relative importance of different sources of private-sector funding for infrastructure, however, varies significantly across countries, with some larger emerging markets seeing a large share of infrastructure funded by domestic banks (see Garcia-Kilroy and Rudolph [2017] for the case of Brazil). In addition to bank and market-based finance, cross-border funding by Chinese financial institutions

51. See Watson, Farley & Williams LLP (2012).

**Figure 6. Infrastructure Finance in Advanced Economies and EMDEs (US\$ billions)**



Source: FSB (2018b).

Note: The series exclude the oil, gas, and mining sectors and refining transactions.

under the country's Belt and Road Initiative plays an increasing role. Given the importance of cross-border lending, which is greater in EMDEs than in advanced economies, and given that such lending is concentrated in the major currencies, many practitioners regard currency risk as critical (FSB, 2018b). At present this risk is borne mostly by domestic banks and developers.<sup>52</sup>

Although infrastructure finance is not a well-defined asset class, most such finance shares some common characteristics, including a tendency toward longer maturities and a lack of collateralizable assets in the early stages of funding. Initial cash outlays are almost always high, yet regular debt servicing flows are usually possible only after construction is complete and the project is in operation. Infrastructure projects are highly heterogeneous in terms of their precise risk profiles;

also, as one might expect given the characteristics of EMDEs discussed in Section II, the funding options and risk profiles of infrastructure projects differ between advanced and developing economies. For large projects, risk tends to be greatest in the preoperational phase,<sup>53</sup> then dissipates during the operational phase. In some EMDEs, however, this risk may not dissipate as fast as in some advanced economies. One reason is that most large projects require some sort of relationship with the public sector, if not in the form of direct contracts, then at least through licenses, permissions, or regulation. Any risk of changes in the relationship that could have a material impact on the operation of the project (such as changes in contractual terms, e.g., in the prices and fees that infrastructure and utility providers are allowed to charge) may have to be managed throughout the life of the project.<sup>54</sup>

52. Several global data collection efforts are under way in the area of infrastructure finance. See, for example, work undertaken by the Organisation for Economic Co-operation and Development (OECD, 2018) and the G20 (*Global Infrastructure Hub*, [www.gihub.org](http://www.gihub.org)) to improve information on funding structures and gaps.

53. This also explains why Basel III attaches a risk weight of 130 percent to exposures to project finance in the preoperational phase, as opposed to 100 percent during the operational phase.

54. Multilateral guarantees are one instrument that might be used to mitigate such risks. See Ketterer and Powell (2018) for a discussion.



## Box 2. Basel III and Infrastructure Finance<sup>55</sup>

The regulatory reforms under Basel III may have an impact on bank lending for infrastructure along several dimensions. (Although many of these regulations are not yet in effect, banks often react in advance to expected future changes in regulation. For example, many large banks in the United States and Europe have already increased capital buffers well in advance of the deadline. Especially for long-term assets, banks price in known future regulatory changes at origination even when those changes are to be phased in slowly.) First, a tightening of the *large exposure rule* can result in smaller banks being crowded out of the market. According to the 2014 Basel large exposures framework, credit exposures to a single counterparty or group of connected counterparties are limited to 25 percent of a bank's Tier 1 capital (compared with limitations defined relative to overall capital under previous frameworks). Second, the newly introduced *aggregate output floor* in the finalized version of Basel III, which creates an increasing regulatory and supervisory bias against the use of *internal ratings-based capital requirements*, can increase capital requirements for infrastructure projects.<sup>56</sup> The alternative approach of using external ratings might not be available given the lack of such ratings in many EMDEs, so that a more conservative, standardized model would have to be applied. Specifically, there would be a 130 percent weight in the construction phase and a 100 percent weight in the operational phase (80 percent if the project is considered of high

quality), which makes project finance more expensive than, for example, corporate finance.

A third constraint comes through liquidity requirements: under the new rule establishing a *net stable funding ratio (NSFR)*, assets with a maturity over one year have to be matched with funding with a maturity of over one year.<sup>57</sup> Although the matching need not be exact, banks will tend to try to match longer-term assets, such as infrastructure loans, with longer-term funding, which might increase (possibly to prohibitive levels) the cost of infrastructure funding, especially for banks that do not have easy access to medium- and long-term funding. Similarly, the *liquidity coverage ratio (LCR)*<sup>58</sup> requires 100 percent high-quality liquid assets for special-purpose vehicles, which are often used for project finance, and for the undrawn portions of revolving credit facilities. This is in contrast to other types of credit facilities (e.g., in corporate finance), where only a proportion is reflected as drawn. Finally, banks might be reluctant to commit to a longer-term funding structure given the increased uncertainty over further regulatory tightening. This concern is not unwarranted. Since the 2008 crisis, there have been frequent changes to regulatory standards, from Basel II.5 to Basel III itself to the recent additional reforms to Basel III (which are so substantial that they are sometimes referred to as Basel IV in the private sector), with discussion of another round a few years hence (sometimes referred to as Basel IV or V).

55. This box is partly based on Garcia-Kilroy and Rudolph (2017).

56. In the final version of Basel III, total risk-weighted assets (RWA) estimated by banks' IRB models cannot be lower than 72.5 percent of RWA as calculated using the Basel III standardized approach. The 72.5 percent restriction was termed an "aggregate output floor" by the BCBS. So, although banks could use IRB models, doing so would not necessarily result in significantly lower risk weights. In addition, given the limited infrastructure financing by banks in EMDEs, sufficient data might not be available to construct such IRB models.

57. The objective of the NSFR is to better match maturities of assets and liabilities on banks' balance sheets.

58. The objective of the LCR is for banks to hold sufficient liquid assets to sustain them for 30 days during times of stress.



Although Basel III is only one of several regulatory reforms over the past few years with possible impacts on infrastructure finance, it can influence the provision of bank funding for infrastructure through several channels. As described in more detail in Box 2, the higher risk weights and limitations on the use of internal risk models prescribed under Basel III can make infrastructure funding more expensive, and the large exposure rule limits the ability of smaller banks to fund infrastructure projects. In addition, the new liquidity requirements can have a dampening impact on maturity transformation, which is important for infrastructure projects that rely on long-term funding.

The limited availability of hedging instruments in EMDEs, critical for risk management in infrastructure finance, has been mentioned as an additional challenge that Basel III might exacerbate. Figure 7 shows that markets for over-the-counter (OTC) interest rate derivatives, an important means of hedging, have been historically much shallower in EMDEs than in advanced countries, and have even experienced a reduction in volume in recent years.

Already under Basel II, capital requirements took into account off-balance-sheet items, including derivative positions. The requirements have become more expensive under Basel III, and these items are now also subject to liquidity requirements. In addition, requirements for higher capital on non-centrally cleared derivatives, the posting of additional margins for OTC derivatives, and additional clearing fees to process transactions have made derivative transactions significantly more expensive for banks. These requirements might also apply to derivative transactions with large cross-border banks, which might attract a higher capital requirement on the counterparty side and thus make them more expensive for local banks in emerging markets. This higher cost might make banks more reluctant to engage in derivative markets, which ultimately might not only reduce the provision of hedging and risk management services for their clients but also impede the development of

local capital markets in EMDEs. This is especially the case because many EMDEs are heavily bank-centric; thus, banks have an important role to play in developing capital markets in these countries.

Surveys of market practitioners and EMDE regulators have indeed pointed to concerns about the effects of Basel III on infrastructure finance, although opinions on the importance of its impact vary widely. Specifically, banks have raised concerns about the effects of Basel III limitations on their use of IRB models on core business lines; this concern is reflected in recent surveys, such as the 2016 IIF survey and Ernst & Young's seventh annual global bank risk management survey.<sup>59</sup> Also, in a recent pilot survey conducted by the World Bank, which includes responses from 20 banks from EMDEs and 4 global banks, the large majority of banks stated that Basel III capital and liquidity requirements have had an adverse effect on foreign long-term funding, including for infrastructure finance.<sup>60</sup>

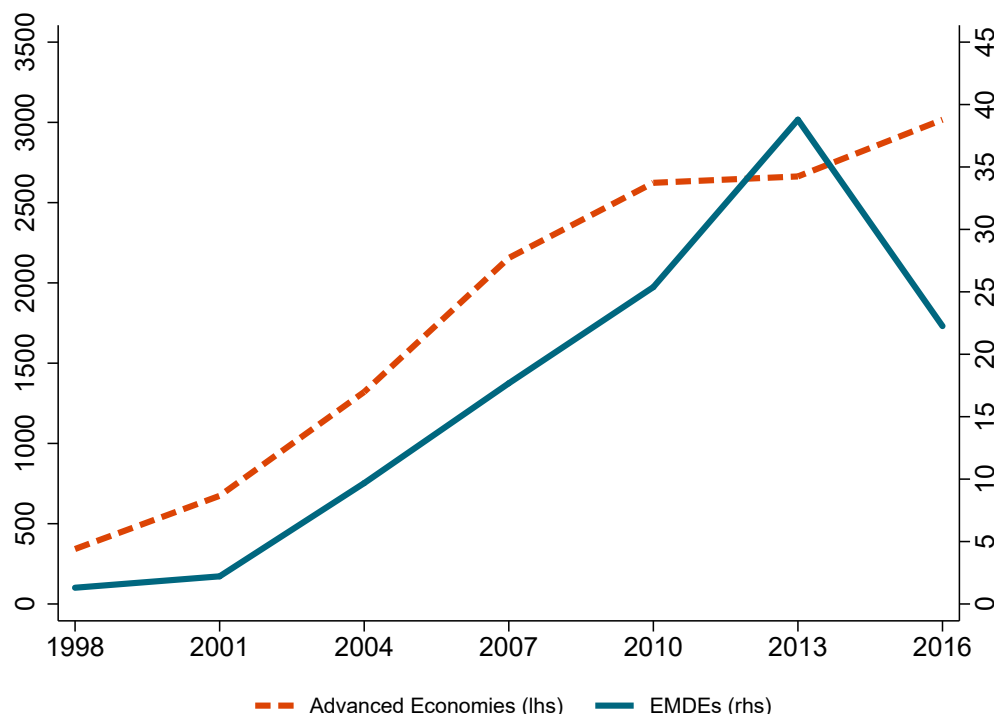
However, survey evidence reported in the FSB's evaluation of the effects of Basel III on infrastructure finance indicates that currency mismatches are seen as more relevant than regulatory barriers (FSB, 2018b).<sup>61</sup> The same FSB evaluation found limited quantitative evidence for an effect of Basel III reforms on infrastructure financing, although the findings are subject to several caveats. First and foremost, the impact on infrastructure finance is likely to be slower moving than that on other segments because infrastructure finance involves fewer larger transactions, typically with longer maturities. Further, the evaluation focused on differential effects across different countries and banks, to better control for demand-side factors, rather than on absolute effects. In doing so, the evaluation found that the different Basel III

59. The survey included responses from 67 banks in 29 countries, including 23 of 30 G-SIBs.

60. See Briault et al. (2017).

61. Some additional regulatory changes might also affect infrastructure finance in EMDEs, such as the new IFRS 9 accounting standards. Under IFRS 9, some credit facilities, such as longer-duration retail mortgages and longer-term uncollateralized facilities (including structured-finance and project-finance deals) will become costly. See Maggi et al. (2017).

**Figure 7.** Turnover of OTC Interest Rate Derivatives in Advanced Economies and EMDEs (net gross basis in US\$ billions)



Source: Authors' calculations based on BIS (2018). Derivatives Statistics.

regulations had only a limited effect on the aggregate availability of infrastructure finance. Furthermore, the analysis does not point to a more pronounced change in spreads for any of the groups of banks more strictly bound by the Basel III requirements; however, for banks with weaker liquidity profiles, there is some indication that regulation has contributed to reduced average maturities of their infrastructure loans. Finally, global systemically important banks (G-SIBs), which constitute the most important providers and are subject to additional capital requirements, have reduced the maturities of their loans more than other banks have. When comparing the effects of the reforms between EMDEs and advanced countries, the evidence does not point to any significant effect on infrastructure volume or pricing, although it does point to some substitution of bank financing with market-based financing. In summary, it is too early to reach definite conclusions in this area, and further research will be valuable.

## Recommendations

Our set of recommendations here is diverse and relates to both cross-border and domestic infrastructure lending. They are guided by four of the five EMDE characteristics we have identified as relevant—variable access to international capital markets, high volatility, shallow capital markets, and capacity and governance constraints—as well as our three principles. As before, our recommendations are targeted at different groups of policymakers and stakeholders.

### *For Home-Country Regulators and Supervisors of Global Banks*

- Because cross-border funding for EMDE infrastructure is mostly denominated in foreign currency and thus subject to additional risk, regulators in EMDEs should consider giving a more favorable treatment to lending for infrastructure in local currency (by, e.g., domestic banks

or domestic affiliates of international banks) than in foreign currency, to encourage use of the former. This difference in treatment might relate especially to liquidity requirements for special-purpose vehicles (SPVs), because these are often more binding than capital requirements. This issue is important in the context of consolidating foreign affiliates into global parent banks' balance sheets and will require cooperation between home- and host-country supervisors.<sup>62</sup>

### *For Multilateral Organizations and EMDE Regulators*

- We recommend the increased use of credit enhancements, whether provided by international players, such as MDBs, or by domestic players, to improve the risk profile of bank lending for infrastructure finance through risk sharing and risk mitigation. Such credit guarantees can be effective if fairly priced, especially in terms of lengthening tenors and thus achieving a better match of maturities between assets and liabilities for developers. Such guarantees should attract capital relief but only in line with the guarantor's credit rating or standing. However, they should be used with caution as they may exacerbate moral hazard. Idiosyncratic risks can be guaranteed at the domestic level, but systemic (country-level) risks are best guaranteed by global players, such as MDBs.
- The ability to hedge risks is of great value for banks providing funding for infrastructure. Therefore access to derivative markets is key, and regulatory reforms in this domain can have an important impact. While the possible effect of Basel III and other regulatory reforms on the role of banks in derivative markets has been widely discussed, no clear consensus has arisen. We

therefore encourage more research in this area and careful tracking of developments.

- Efforts to develop infrastructure as an asset class (or as a set of asset classes) and to seek standardization in various aspects of infrastructure project development (in terms of the analysis of cash flows and risks, the types of contracts that are used, and the terms of securities issued) should be pursued and intensified.<sup>63</sup> If projects can be developed in a more standardized fashion, and if there is agreement on the different dimensions of risk and how they should be quantified, it may become easier to issue securities backed by infrastructure projects. Moreover, financial regulators may be able to better assess the risks for banks lending to SPVs that finance such projects. Given sufficient evidence on risks, lower risk weights might be appropriate for projects that comply with an identified set of risk parameters. Ketterer and Powell (2018) discuss these issues and suggest the creation of aggregator SPVs that would acquire individual projects and issue bonds attractive to institutional investors. This kind of bond financing might allow the global banks that had initially financed the projects to move them off their balance sheets, so they can then use their expertise to finance new projects. It could also further the development of long-term capital markets in many EMDEs where they are now shallow.

A point related to this last recommendation is that the tighter capital and liquidity requirements for infrastructure finance should serve as an additional incentive to develop the nonbank segment of the financial system in EMDEs. If tighter regulatory requirements under Basel III reduce the bank funding available for infrastructure, this might be an intended consequence

62. The next section deals with additional home-host issues.

63. This relates to the discussion in BCBS (2017b, paragraph 48) on what constitutes a high-quality project finance exposure). There have been efforts by the **Argentine G20 presidency** and the **OECD** toward defining infrastructure as an asset class in the form of greater standardization.

of a stronger focus on global stability; it thus heightens the focus on contractual savings institutions, such as insurance companies and pension funds, as natural investors in long-term and low-risk assets such as infrastructure (Della Croce and Gatti, 2014). The policy agenda to develop long-term finance is a long one, comprising not only institutional reforms, adjustment of regulatory frameworks, and better incentive structures for financial institutions, but also initiatives to

meet broader socioeconomic challenges, such as pension reform. Among the various nonbank institutions, life insurers and pension funds are especially important from a regulatory perspective, given their long-term investment horizons. This policy agenda varies greatly from country to country, however, and it is critical to identify the bottlenecks to the development of long-term finance in each country and gauge how best to address them. We return to this topic in Section V.

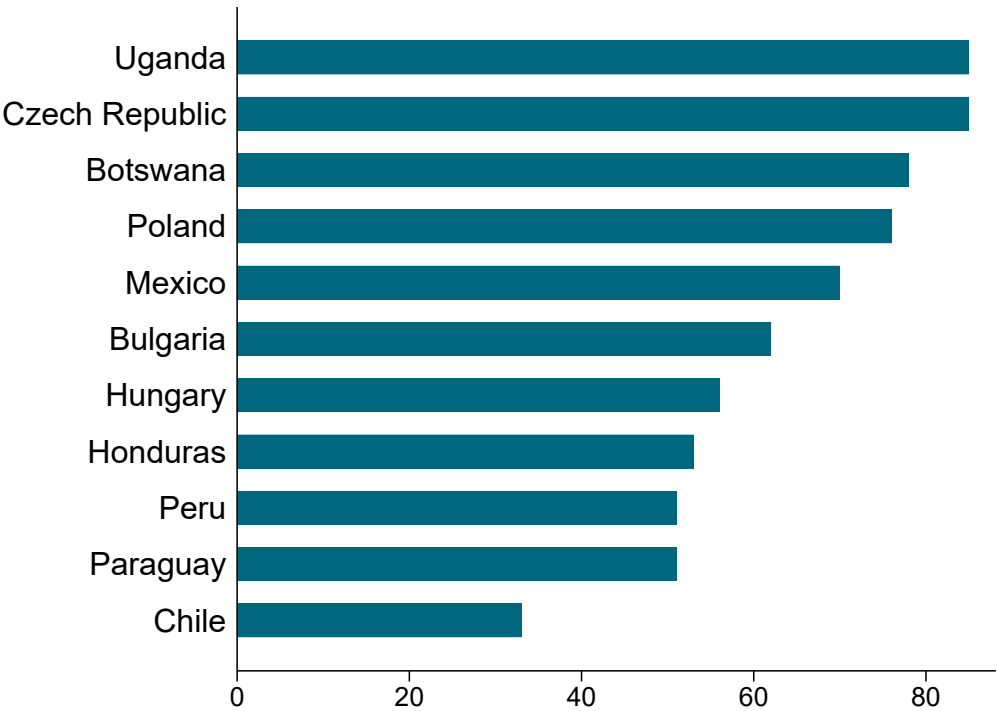
## Section IV.

# Issues Arising from the Basel Framework for the Operation of Global Bank Affiliates in EMDEs

Affiliates of foreign banks are important participants in the local financial systems of many EMDEs. In Botswana, the Czech Republic, Mexico, Poland, and Uganda, for example, the share of foreign banks in total local banking assets exceeds 70 percent (Figure 8). As reported in World Bank (2017), foreign banks, both global and regionally based, account for about 40–60 percent of all bank assets in Latin America and the Caribbean, sub-Saharan Africa, and emerging Europe and Central Asia.

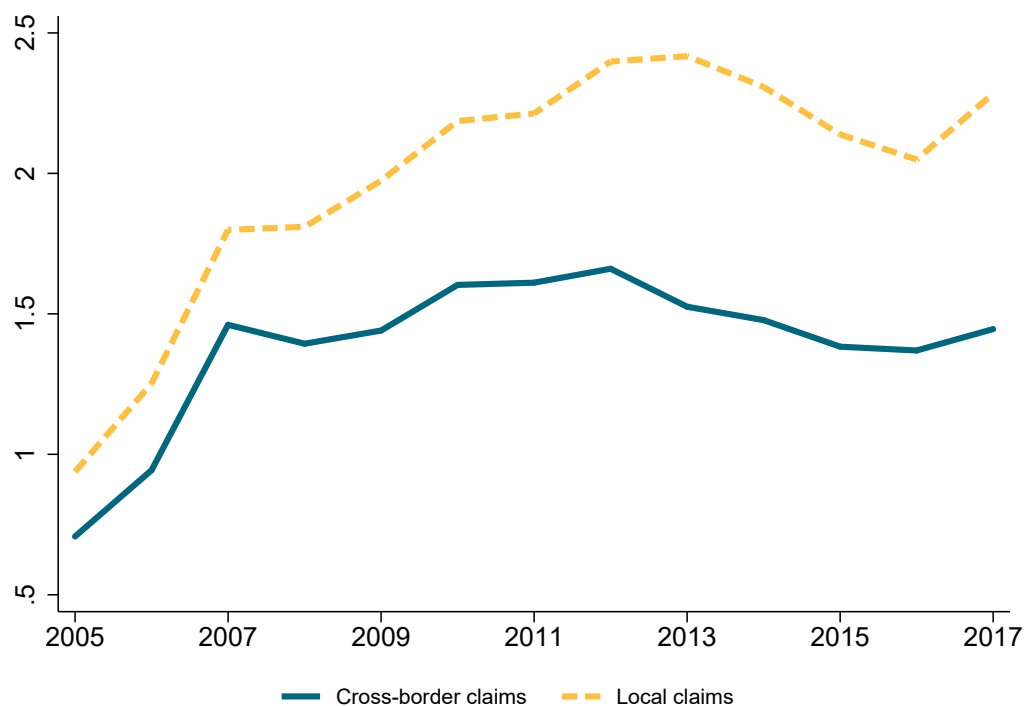
Section III showed a decline in international banks' cross-border bank lending to EMDEs (a flow measure), but *total claims* of international banks on EMDEs (a stock measure) tell a different story. Total claims of international banks are equal to their cross-border bank claims plus the local claims of their affiliates. Using BIS data, Figure 9 shows the behavior of both these two components of international banks' claims on EMDEs. Notably, whereas cross-border claims remained practically stagnant when comparing 2007 (the pre-global crisis year) with 2017

**Figure 8.** Percentage of Foreign Bank Assets in Total Bank Assets (selected EMDEs)



Source: Claessens and Van Horen (2015).

**Figure 9. Cross-Border and Local Claims by Foreign Banks on EMDEs (US\$ trillions)**



Source: Authors' calculations based on BIS (2018). Consolidated Banking Statistics (CBS) on an ultimate risk basis. Excludes China.

(almost a decade after the crisis), local claims increased significantly over that period (although there was an important reduction in 2013–16). That is, international banks' exposures to EMDEs are increasingly accounted for more by the activities of their affiliates (both branches and subsidiaries) than by cross-border positions.<sup>64</sup>

Another recent phenomenon is a decline in the relative importance of international bank affiliates from advanced countries operating in EMDEs. This is partly explained by the insistence of advanced-country supervisors, during and after the global financial crisis, that their banks focus on strategic core assets in their home countries. Affiliates of international banks based in the EMDEs have taken up some of the slack.

The participation of foreign banks in local financial systems offers well-documented benefits, which need not be examined here. The discussion that follows focuses on the important observation that there are significant differences in the overall regulatory and supervisory

frameworks between the countries that are home to international banks and the countries that host those banks' affiliates. Because of these differences, implementing the Basel framework in global and regional banks might bring about important challenges for bank supervisors in countries that host foreign banks.

## Differences in Basel Accord Compliance between Domestic and Foreign Banks

The foreign affiliates of global and regional banks are usually independent, locally incorporated financial institutions, subject to local regulation and supervision. But their strategic business decisions are invariably made in the bank's home country, and they are subject to home-country regulatory supervision as well. The supervisors of global banks based in advanced economies require that regulations be applied and enforced on a consolidated basis; that is, all obligations of compliance of a global bank with Basel III requirements apply to the entire banking group, including its

<sup>64</sup>. See World Bank (2017) for a more detailed discussion.



foreign affiliates. Since the recommendations under Basel III are primarily directed to internationally active banks, most home-country supervisors of global banks have moved promptly to comply.<sup>65</sup> In contrast, a large number of EMDEs are far from implementing Basel III, and many are still on Basel I.<sup>66</sup> These large differences in regulatory and supervisory frameworks might impose additional costs on the operations of foreign bank affiliates, which need to meet both home- and host-country requirements. These differences might also create an unlevel playing field between domestic and foreign banks in EMDEs,<sup>67</sup> which could add to the latter's costs of doing business there (discussed in Section II) and might reduce their incentives to maintain affiliates in EMDEs.

A second, and perhaps more important, issue relates to the quality of the regulatory and supervisory framework in some EMDEs that are themselves home countries of international banks. The move toward increased participation of South-South lending via affiliates (which complements their cross-border lending—see Section III) has been especially important in supporting the financing needs of some countries where the retrenchment of activity of banks based in advanced economies has been most pronounced, including some of the poorest countries in the world. However, this expansion can be effective only if the new lenders are strong institutions. If instead problems should arise in these lenders, the result can be severe contagion effects, and a sharp contraction in access to credit by several EMDEs might follow. As an example, Box 3 presents some regulatory concerns related to the rapid expansion of pan-African banks since the global financial crisis.<sup>68,69</sup>

65. Recent changes to Basel III have moved forward the deadline for full compliance with capital requirements to 2023–27.

66. In a May 2018 survey, the Financial Stability Institute found that out of 100 non-Basel Committee members, 60 had adopted some element of the Basel III capital requirements, 51 had adopted the LCR, and 14 the NSFR. (see Hohl et al., 2018).

67. In some EMDEs, some components of the regulatory and supervisory framework can actually be more stringent than called for in Basel III. This, however, does not eliminate the problem of an unlevel playing field between domestic and foreign banks.

68. Cross-border activities by African banks have expanded rapidly in recent years. For example, Ecobank, with headquarters in Togo, has a presence in more than 30 African countries (see IMF, 2017a).

69. Latin America is another region where there has been a large expansion of regional banks, including a large presence of Colombian banks in Central America and the activities of Brazilian banks in other Latin American countries.

### Box 3. Pan-African Banks: Regulatory Challenges

The recent expansion of pan-African banks has taken place mostly through subsidiaries, though there has also been a significant increase in their cross-border lending. This trend reflects increased economic integration within Africa and supports improved competition in the continent's banking industry. But the expansion also poses risks. As discussed in Enoch, Mathew, and Mecagni (2015), weaknesses in banking regulatory and supervisory frameworks in many African countries increase their vulnerability to severe financial difficulties. These weaknesses relate to failures to meet basic principles for effective banking supervision, such as those outlined in the Basel Core Principles (BCBS, 2012a), including guidelines for licensing and ownership structure, use of accounting standards, consolidated bank supervision, and cross-border coordination between supervisors (especially on frameworks for crisis management and resolution), among others. According to Enoch and coauthors, compliance with the Basel Core Principles on home-host relationships is particularly low in African countries compared with the rest of the world. Given the increased financial linkages between countries in Africa, deep problems in African banks with an important presence in the region could lead to serious contagion effects, threatening financial stability in the region and access to finance for large segments of the population.<sup>70</sup>

70. For an in-depth discussion, see Beck et al. (2014).

## Recommendations

### *For Regulators and Supervisors in EMDEs*

- In EMDEs where regulators can identify a set of local banks as systemically important, such that their problems could adversely affect the rest of

the financial system, they could consider subjecting these banks to regulations along the lines suggested by the BCBS for domestic systemically important banks (D-SIBs).<sup>71</sup> This recommendation, which is consistent with the principle of *proportionality*, not only would increase the safety of EMDEs' financial systems but also would help reduce the regulatory gap between peer institutions (large, systemically important local banks and foreign affiliates of global banks), thus mitigating the problems of an unlevel playing field.

- Consistent with the principle of *containing adverse spillover effects* from the home countries of multinational banks, we recommend strengthening, when necessary, the soundness and quality of the governance and operations of regional and global banks headquartered in EMDEs. To this end, high priority needs to be given to the following:

- Regulatory and supervisory improvements, including steps to ensure full regulation and supervision of bank holding companies; implementation of consolidated and risk-based supervision; alignment of key prudential norms with international standards, such as concentration limits; and enhancement of data availability on banks' cross-border exposures
- Improvements in cross-border collaboration between supervisors by introducing (when not already in place) regional supervisory colleges and ensuring that annual meetings between supervisors take place. Supervisory colleges should pay particular attention to the

quality of the capital held by a parent bank or holding company and its capacity to provide financial support to a distressed subsidiary in another EMDE.

- Increasing efforts to establish workable cross-border resolution mechanisms and early-action processes should severe problems arise in EMDE-headquartered regional or global banks. Indeed, this recommendation applies globally, to supervisory authorities in advanced economies as well as to those in EMDEs.<sup>72</sup> As the FSB Resolution Steering Group has recognized,<sup>73</sup> significant work remains to be done to establish effective resolution regimes for systemically important banks. Most important, serious challenges remain with regard to operationalizing these plans and testing their operational effectiveness.

These and other recommendations have been advanced by Enoch, Mathew, and Mecagni (2015) and Beck et al. (2014) for the case of pan-African banks. Enforcement and enhancement of Pillar 2 of the Basel framework,<sup>74</sup> as applied to regional banks headquartered in EMDEs, seems to be a priority.

In addition, given the wide spread of regional banks in EMDEs, we offer a recommendation for what we term regional systemically important banks (R-SIBs):

- Subject R-SIBs to a set of regulations that would combine elements from Basel III recommendations for D-SIBs with those for G-SIBs. Although this approach would retain discretion for home-country regulators (as in the case of regulations for D-SIBs), in cooperation with host-country

71. Criteria recommended by the Basel Committee to identify D-SIBs include the following: (1) size; (2) interconnectedness with the rest of the financial system; (3) substitutability/financial institution infrastructure, including considerations related to the concentrated nature of the banking sector; and (4) complexity of operations. The committee recommends imposing higher capital requirements on these banks, and that the additional capital be met fully by Common Equity Tier 1. In addition, the committee recommends that national authorities put in place any additional requirements and policy measures deemed necessary to contain the risks posed by domestic systemically important financial institutions (D-SIFIs). See BCBS (2012b).

72. Although China is not an advanced economy, it is home to four of the world's global systemically important financial institutions (G-SIFIs); it is therefore subject to regulatory treatment for the implementation and operationalization of cross-border resolution plans similar to that in advanced economies.

73. See FSB (2019a).

74. Pillar 2 of the Basel framework contains the key principles of supervisory review, risk management guidance, and supervisory transparency and accountability to deal with banks' risks.

regulators, it would also require the establishment of an agency or agencies that will be in charge of identifying, on an annual basis, those banks that can be characterized as R-SIBs. (This role is performed by the FSB in the case of the G-SIBs.)

### *For Multilateral Organizations*

- Underscore the urgency of support from multilateral organizations (IMF, World Bank, African Development Bank, etc.), in the form of technical assistance, to improve the quality of the regulatory and supervisory framework in some EMDEs that are home countries to international banks. The multilateral organizations already recognize this need,<sup>75</sup> but an important question remains as to the extent to which countries are taking full advantage of that support and whether adequate coordination and cooperation between multilaterals are taking place.
- Beyond the activities of EMDE regional banks, improved cross-border coordination between supervisors of advanced-economy *global* banks and host-country supervisors in EMDEs is also needed. In many cases, most of this coordination is limited to memorandums of understanding as a basis for the exchange of information and participation of EMDE supervisors in colleges of supervisors. However, given the practically non-existent capacity of host EMDEs to adequately assess the quality of large global banks, we recommend that the multilateral organizations help design and put in place clear agreements between countries on crisis resolution. Such agreements should specify the individual country's responsibilities in case of failure of either a global bank's subsidiary in that country or the parent bank.

75. See Lagarde (2017).

## Differences in Regulatory Treatment of Sovereign Exposures between Foreign and Domestic Banks

Regulatory treatment of sovereign exposures has not changed from Basel II to Basel III. However, a discussion of this topic, even if it raises no new issues, is still highly relevant. Under the standardized approach (the approach used by most banks in EMDEs that have incorporated Basel II or III into their regulatory framework), risk weights are assigned according to the ratings provided by credit rating agencies (or in some cases export credit agencies). However, national authorities have the discretion to apply lower risk weights to banks' exposures to their sovereign of incorporation when the exposures are denominated and funded in local currency. To date, most authorities from EMDEs have assigned a risk weight of zero to paper issued by their sovereigns and denominated in local currency.

In contrast, global banks that use their internal rating models to estimate capital requirements for other classes of exposure (such as corporate and specialized lending) are required to use these models for sovereign exposures as well. These banks are also required to apply a consolidated regulatory treatment to the risks taken by a parent bank and its subsidiaries; that is, global banks have to assess their risks with reference to the consolidated balance sheet of the parent bank and its domestic and foreign subsidiaries.<sup>76</sup> The implications for the treatment of sovereign paper by subsidiaries of global banks active in EMDEs are two-fold. First, because of consolidation, home-country supervisors disregard the location of assets and liabilities; this can result in differences in treatment of a given EMDE's local currency-denominated sovereign

76. Generally speaking, Basel III should apply on a consolidated basis to all internationally active banks to capture all risks undertaken by the whole banking group. However, as an alternative, the Basel III capital framework allows the application of capital requirements to internationally active banks on a stand-alone basis if the same objective is achieved, and provided that the entire book value of any investments in subsidiaries and significant minority-owned stakes is deducted from the bank's capital. In a number of EMDEs that apply Basel III capital requirements, this alternative approach to consolidation is followed and applied to all banks, whether internationally active or not.

paper, depending on whether the paper is held by a local subsidiary of a global bank or by a domestic bank of the EMDE. It is plausible that the same sovereign paper issued by an EMDE government could be treated as a foreign currency-denominated asset if held by a local subsidiary of a global bank and as a local currency-denominated asset if held by a domestic bank (see Carstens, 2015).

Second, in calculating risk weights (for estimating capital requirements) for sovereign exposures using the IRB approach, global banks need to estimate the probability of default of these exposures.<sup>77</sup> However, since cases of default of government securities denominated in local currency are rare, there is not sufficient historical data with which to estimate these probabilities. Facing these constraints, global banks tend to use the same types of variables used by credit rating agencies (e.g., GDP per capita, ratios of external debt to exports and of international reserves to GDP, fiscal balances, and the inflation rate) to estimate the default probability of local currency-denominated government debt. This method, however, does not differentiate between the default probability of sovereign paper denominated in local currency and that of sovereign paper denominated in foreign currency, even though a sovereign default crisis is much more likely when the sovereign debt is denominated in foreign currency.<sup>78,79</sup>

Thus, because of the combined effects of home-country consolidated supervision and the use of the IRB model by global banks, the risk weight attached to a given EMDE government security denominated in local currency might be larger for a subsidiary of a global bank than for a domestic bank. This, in turn, increases the relative costs for subsidiaries to hold EMDE government paper. Given the importance of these banks in the provision of liquidity for government securities,

the financing costs of EMDE governments would face upward pressure.<sup>80</sup> Mexico exemplifies the unlevel playing field between domestic and foreign banks that can result from the implementation of Basel III by global banks (see Box 4).

Beyond the issues regarding the differential regulatory treatment of sovereign exposures denominated in local currency between subsidiaries of global banks and domestic banks, there is an ongoing debate over the Basel III (and II) recommendation that countries' supervisors be granted national discretion in assigning risk weights to government securities denominated and funded in local currency. As mentioned above, the regular practice followed by most supervisors in EMDEs (and in advanced economies) is to assign zero risk weight to this type of government security. The issue, as considered in a discussion paper by the BCBS (2017c), is whether this preferential treatment for government securities could be a source of excessive risk taking by banks holding these securities.

Although assigning positive risk weights makes sense for foreign currency-denominated sovereign bonds issued by local governments (and for all government bonds issued in highly dollarized countries, including those with pegs and currency boards), the matter is quite different when it comes to government bonds issued in local currency. A positive risk weight on local-currency domestic sovereign bonds simply increases the cost of government borrowing without reducing the probability of bank failure, because a sovereign default is ultimately an event within the government's control. In the case of such a default, however, local banks are likely to be affected by these circumstances in many ways other than simply the losses sustained on their local currency-denominated government bond holdings: if a currency crisis or recession should accompany the default, local banks

77. Banks using the foundation IRB approach need to estimate the default probability; banks using the advanced IRB approach need to estimate both the default probability and the *loss-given-default*.

78. The Task Force is thankful to Pascual O'Dogherty, former executive of the Central Bank of Mexico, for discussions and clarifications on this point.

79. See Reinhart and Rogoff (2009).

80. This issue has been raised by Carstens (2015), who also argues that the equal treatment of banks' exposures to sovereigns and their central bank under Basel II and III does not make sense, since central banks can always repay their local currency-denominated liabilities. Assigning a positive risk weight to the deposits of foreign bank subsidiaries held at a host-country central bank would further unlevel the playing field between domestic and foreign banks operating in EMDEs.

#### Box 4. Foreign Banks versus Domestic Banks in Mexico: Implications from the Implementation of the Basel Framework by Global Banks

As shown earlier in Figure 8, Mexico is among those EMDEs that have a sizable participation of subsidiaries of global banks in the local financial system (about 70 percent of total assets in Mexico's case). In such circumstances, changes in international regulations can have far-reaching impacts. For example, using data and information from the Central Bank of Mexico, the Comisión Nacional Bancaria y de Valores, and the IBRN, Levin-Konigsberg et al. (2017) show that increased capital requirements in the United States had a negative and statistically significant impact on growth in bank lending by US foreign affiliates in Mexico. As discussed in CGFS (2018), the international implementation of Basel III had a different impact on bank lending by affiliates of foreign banks than on lending by domestic banks in Mexico; this difference was also statistically significant. Although both types of banks reduced their credit growth rate following the regulatory change, the reduction by the former was larger. Further research by economists from the Bank of Mexico (Bush, Lopez, and

Lopez, forthcoming) shows that foreign subsidiaries decreased their credit growth rate by almost 5 percentage points compared with the growth rate for domestic Mexican banks.

Also, in response to the latest BCBS assessment of Mexico's implementation of the Basel recommendations (BCBS, 2015), the Mexican authorities argued that the BCBS's Regulatory Consistency Assessment Program should help align regulations between countries with a large presence of foreign bank subsidiaries and the parent countries of those subsidiaries "in order to prevent distortions due to the asymmetric treatment of similar risk exposures by home and host jurisdictions." Such distortions could result in an unlevel playing field between foreign subsidiaries and domestic banks. In particular, the Mexican authorities cited home-country regulations and the criteria for treating Mexican sovereign exposures as taking precedence over host-country regulations, which could affect the local activities of global bank subsidiaries.

are almost certain to suffer losses from these events as well. An increase in risk weights for local-currency sovereign bond holdings by domestic banks seems, therefore, not necessarily in line with the underlying risk and has the disadvantage of making government funding costlier.

#### Recommendations

The issue of differential regulatory treatment of sovereign exposures between foreign and domestic banks is an extremely complex one, since it involves the willingness of home-country supervisors to trust the assessment of host-country supervisors for the treatment of

local currency-denominated sovereign exposures. The ideal solution would be to reach agreement at the global level on a uniform methodology for treatment of sovereign exposures that can be applied by both home- and host-country regulators. However, recognizing that this is not feasible in the short run, the first of the following two recommendations to the BCBS and other multilateral organizations represents a second-best solution:

- Start a process of analysis and intergovernmental discussions to identify additional conditions to be met by host countries that would encourage global banks and home-country supervisors to apply, at the consolidated level, host-country



treatment to local currency-denominated sovereign exposures. One possibility would be to agree on threshold values for a set of easily verifiable and widely available macrofinancial indicators (including, but not limited to, international credit ratings). For host countries whose indicators surpass the thresholds, home-country supervisors and global banks would accept, at the consolidated level, the host country's regulatory

treatment of local currency-denominated sovereign exposures.

- For the calculation of regulatory capital, keep in place the existing recommendation of granting national discretion to countries' supervisors for the assignment of risk weights to government securities denominated and funded in local currency.



## Section V.

# Financial Stability and Financial Development Issues Arising from the Implementation of Basel III in EMDEs Themselves

The previous sections focused on the impact of implementing Basel III in advanced countries on the volume, composition, and stability of external sources of finance for EMDEs. This section now turns to the implementation of Basel III in EMDEs themselves and its implications for financial stability and the development of local banking systems and capital markets in these countries. The discussion again draws on our identification of five key characteristics of most EMDEs and the challenges faced by their financial systems: variable access to international capital markets, high macroeconomic and financial volatility, less developed domestic banking systems and public capital markets, limited transparency in both the financial system and the real economy, and capacity and governance challenges. Also as before, our discussion and recommendations are based on the three principles discussed in Section II: proportionality, minimizing negative spillover effects from the adoption and implementation of Basel III in advanced economies, and minimizing the trade-off between financial stability and development.

Since many EMDEs have not yet implemented Basel III (but might be considering it) or are in the early stages of implementation, the following is based less on quantitative analysis and more on a consideration of the incentives that regulatory changes create, as well as on inferences from previous regulatory

changes.<sup>81</sup> As in previous sections, we stress that the question of whether to implement some or all of the Basel III recommendations is only one of several regulatory challenges facing banks and bank regulators in developing countries; others include “know your customer” and tax disclosure rules. In low-income countries, the impact of such transparency rules on bank activities might even be greater than that of changes in the regulatory framework, given the limited formality of many firms and households in many developing economies.

The following discussion is split into three parts. We first discuss to what extent Basel III satisfies the stability needs of EMDEs; we then focus on the potential effects of Basel III on lending in EMDEs; finally, we discuss alternative financial intermediation channels that can support growth in these countries.

## Stability of the Financial System

Although the primary objective of recent regulatory reforms is to strengthen the resilience of banking systems to both exogenous and endogenous

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81. See Rojas-Suarez (2015) for an example of issues related to the implementation of Basel III capital requirements in Chile. Fang et al. (2018) offer one of the first assessments of increasing capital requirements under Basel III in an emerging market; they find that higher capital requirements have a short-lived, negative impact on bank credit in Peru, although this effect becomes statistically insignificant in about half a year.

systemic shocks, they have been primarily designed with advanced financial markets and their crisis experience in mind. As already discussed in the introduction, stronger capital buffers can reduce the probability of bank failure and give regulators important tools for tackling financial distress in individual banks, not least because the higher a bank's capital adequacy, the more time there is for regulators to intervene before the bank becomes insolvent. The newly introduced liquidity requirements are considered to better gauge available liquidity during distress situations and have addressed maturity mismatches on banks' balance sheets. The introduction of countercyclical capital buffers has provided regulators with tools to address fragility risks arising from credit cycles. Without proper adjustment and calibration, however, these reforms might not have the same fragility-reducing effect in EMDEs as in advanced economies, as we discuss below.

On the one hand, the complexity of Basel III (and before that Basel II) makes it difficult to implement, and parts of it are less relevant to many EMDEs. Given limited supervisory capacity, this complexity can invite regulatory arbitrage and regulatory capture. Tightening regulatory requirements on regulated entities can also result in activities moving outside the regulatory perimeter, thus possibly increasing systemic risk (Box 5). On the other hand, the sources of systemic fragility might be different in emerging markets than in advanced countries and thus unforeseen under Basel III. We discuss each issue in turn.

### Complexity of Implementation

Many elements of the Basel III framework (as with the Basel II framework before it) rely on ready and ample availability of data. In many smaller and less financially developed economies, however, the needed data are often lacking, making the more data-intensive risk-weighting schemes, such as the IRB model, less applicable. This might create a bias toward the standardized model. Subsidiaries of many multinational banks, however, might insist on applying the same

risk-weighting models as their parent banks, which could result in certain conflict with host-country supervisors, as discussed in Section IV.

### Recommendations

- Given limited data availability and capacity constraints—two features we have identified as characteristics of EMDEs—the principle of proportionality suggests that in areas where risk modeling involves unavailable high data requirements, or where modeling is costly and subject to high uncertainty (e.g., for market and operational risk), it might be useful to consider using simple capital surcharges in lieu of these data-intensive models.
- The characteristics of small financial systems, together with the principle of proportionality, suggest that in implementing Basel III, EMDE regulators should prioritize key risks (including credit and liquidity risks) in their banking sectors, matching their efforts to the country's supervisory capacity. However, these key risks vary widely across EMDEs, as does supervisory capacity, so that one size does not fit all.
- In implementing these recommendations, however, regulators need to avoid an *excessive* reliance on the principle of proportionality. A significant danger is that if different countries adapt regulations in very different ways, the whole idea of a common standard may be lost. Such “multipolar” proportionality could erode the level playing field and render cross-country comparisons and assessments, such as the Financial Sector Assessment Program (FSAP) and rating agency analyses, more difficult. The problems are particularly relevant across groups of countries where there is growing financial integration. To mitigate this risk we recommend a regional approach, whereby groups of regulators across EMDE regions would agree on a set of proportional rules for their region. That is, the principle of proportionality would be maintained but

## Box 5. Shadow Banking<sup>82</sup>

As banks face more stringent capital and liquidity requirements, as well as tougher disclosure and supervision standards, there is a tendency for financial intermediation to move outside the regulatory perimeter into nonbank institutions, undertaking many bank-like activities but not subject to this regulation.<sup>83</sup> The emergence of this “shadow banking” is not in itself undesirable, as it can be the result of financial innovation and could increase competition in the financial system. However, if pursued purely for regulatory arbitrage, it points to important regulatory gaps. Given the interconnectedness of intermediation across the regulatory perimeter, and given the implicit financial safety net guarantee that shadow banking might enjoy, the emergence of these institutions poses new regulatory and supervisory challenges to properly determine the regulatory perimeter in order to avoid such arbitrage. Although shadow banking has been a challenge for financial policy independent of changes in the bank regulatory framework, the tightening of bank regulatory standards under Basel III can be expected to produce more movement of intermediation business into the shadow banking area.

The phenomenon of shadow banking has been discussed among regulators mostly in reference to advanced economies and its role in the global financial crisis. But attention has recently expanded to EMDEs as well (as discussed in FSB, 2018b), where the importance of shadow banks has also increased in recent years. Most notably, China has seen the emergence of so-called trust companies

in reaction to interest rate restrictions on lending and deposit interest rates; these institutions are often linked in some way with regulated commercial banks. In 2016 trust companies accounted for US\$2.9 trillion, or 6 percent of total domestic financial assets in China. And the role of shadow banks in EMDEs’ financial systems has been changing rapidly over the past few years, with a tendency toward more complex products and intermediation chains (FSB, 2018c). In India, housing finance companies and other nonbank financial institutions are key underwriters of mortgages and held 46.5 percent of the outstanding mortgage stock in March 2017 (FSB, 2019a). In Brazil, mapping of interconnections across different segments of the financial system has shown linkages to be strong, with implications for contagion effects in times of future systemic distress. Finally, crowdfunding and peer-to-peer lending platforms have arisen across the globe. To the extent these are stand-alone financial institutions, they do not constitute a risk to the financial system; however, the increasing linkages between these platforms and banks make them a possible source of fragility that for now goes unregulated.

Although many factors combine to explain the rise of shadow banks, including technological developments and the search for safe assets, regulatory arbitrage plays an important role. When the costs of lending increase because of tighter capital and liquidity requirements, as under Basel III, incentives emerge for intermediation to be shifted to nonregulated entities. Such expansion creates additional sources of fragility outside the regulatory perimeter and additional possible spillover effects; it thus requires a dynamic approach to defining and defending the regulatory perimeter. This very much constitutes an additional challenge for supervisors who are used to regulating and supervising clearly defined and identified institutions.

82. Although the FSB has decided to rename shadow banking as “non-bank financial intermediation,” we prefer to retain the name “shadow banks” to clearly distinguish these institutions from other, regulated nonbank financial institutions, including contractual savings institutions, which we discuss later. See FSB (2018a).

83. The FSB includes the following entities under nonbank financial intermediation, or shadow banking: money market funds, credit investment funds, exchange-traded funds, credit hedge funds, private-equity funds, securities broker-dealers, securitization entities, credit insurance providers or financial guarantors, finance companies, and trust companies. Although some of these entities might fall under nonbank regulatory frameworks, they are typically not subject to the same regulatory requirements as banks, even though they might undertake bank-like business or be part of an intermediation chain that includes banks.

applied in a coordinated fashion among regulators whose financial systems share similar characteristics. Such a set of rules might include agreement on which Basel III approaches to apply, as well as how to adapt specific regulations.<sup>84</sup> Moreover, we recommend that standard-setting bodies cooperate to develop a set of guiding principles for the development of proportional frameworks and work with these regional groups of regulators.

## Liquidity Requirements

The implementation of liquidity requirements might raise its own specific challenges. Liquidity in financial markets is lower in EMDEs than in most advanced economies because of the EMDEs' smaller scale and the limited depth and breadth of their capital markets. This issue is particularly relevant for interbank markets, which are often segmented, with some banks having little or no access, or all banks that do have access attempting to take similar positions (correlated demand/supply). EMDEs' lower overall liquidity also makes assets that in advanced economies are usually considered highly liquid (such as government paper) a less useful liquidity buffer, as some of these assets cannot be easily offered as collateral in markets at their original value or sold in time of crisis. Thus, the introduction in EMDEs of liquidity requirements based on Basel III's definition of *high-quality liquid assets* (HQLA) might give a false impression of secure liquidity, especially in periods of stress or crisis. Indeed, the limited availability of securities classified as HQLA might lead to their being hoarded, and thus might even undermine liquidity in volatile times, thus defeating the purpose of the regulations.

An additional constraint is many EMDEs' high reliance on foreign-currency funding and their propensity to want to switch to foreign-currency assets during times of stress. The gross asset and liability positions of individual banks and other sectors of the economy

(government, households, nonfinancial corporations) in local currency and in other, major currencies may be critical parameters for understanding how a liquidity crisis might develop; the net foreign asset position at the aggregate, country level is not a sufficient statistic. In sum, an inability to guarantee liquidity in critical markets and in the financial system as a whole is almost the definition of an EMDE (as discussed in Section II) and is exacerbated by the shallowness of interbank markets, the high correlation in liquidity positions across banks, and the possibility of currency substitution. A centralized liquidity management tool might therefore be necessary, as discussed in Box 6.

## Recommendations

The following recommendations relate to three of our key EMDE characteristics: variable access to international capital markets, high macroeconomic and financial volatility, and shallow capital markets; the recommendations are based on the principle of proportionality. We stress that these recommendations are complementary options intended to address the micro- and macro-liquidity management challenges facing many EMDEs.

- Simpler liquidity ratios might be called for in countries where the data requirements for the liquidity coverage ratio (LCR) and the net stable funding ratio (NSFR)<sup>85</sup> are not easily fulfilled. For example, Kenya has introduced the capital requirement components of Basel III but has opted to keep simpler liquidity requirements than Basel III calls for.<sup>86</sup> However, for countries where lack of availability and poor quality of data are binding constraints for the implementation of adequate liquidity requirements, improved data collection to remove these constraints should be given high priority.

84. One example of such close cooperation is the East African Community, whose Monetary Affairs Committee is coordinating the adoption and implementation of Basel III across member countries.

85. The LCR refers to the proportion of highly liquid assets held by financial institutions to ensure their ongoing ability to meet short-term obligations, whereas the NSFR aims to promote resilience over a longer time horizon by creating incentives for banks to fund their activities with more stable sources of funding on an ongoing basis. See also Annex I.

86. Specifically, banks are obliged to maintain a statutory minimum of 20 percent of all their deposit liabilities and matured and short-term liabilities in liquid assets (See guideline CBK/PG/05 in <https://www.centralbank.go.ke/wp-content/uploads/2016/08/PRUDENTIAL-GUIDELINES.pdf>.)

## Box 6. Suggestions for a Systemic Liquidity Tool

Borrowers in emerging economies can experience sharp variations in their terms of access to international markets and to the domestic capital market. Critically important markets such as the government bond market may also be subject to large shocks to liquidity. Although lender-of-last-resort facilities and international reserves can be used to support banks with local-currency shortages and to intervene in foreign exchange markets, respectively, a macroprudential systemic liquidity tool can also help financial institutions weather periods of foreign exchange illiquidity; it can also send a useful signal to markets that authorities are addressing the potential bank fragility risks stemming from volatile access to international capital markets. In addition, such a tool can help address a moral hazard problem arising from limited monitoring capacity by central banks, as commercial banks might try to reduce their own liquidity holdings, relying on central bank support.

A macroprudential systemic liquidity requirement can be established in any of several ways. One way is to require that a fraction of required liquidity be held with a centralized custodian—normally, but not necessarily, the central bank. For this liquidity to be considered a systemic macroprudential liquidity tool, these liquid holdings need to be remunerated, to strengthening their role as insurance and reduce the tax effect on the financial system that results from nonremunerated reserve requirements (the latter are used as a monetary policy instrument in a number of EMDEs). If the assets held by the custodian are denominated in US dollars (or another hard currency), they would normally be considered a component of international reserves. In some cases, commercial banks could hold remunerated deposits in the central bank, or, where this is not allowed, banks could conduct repurchase (repo) operations with

the central bank at an implied interest rate (the remuneration rate) or hold other assets in special accounts. For this policy to create a truly systemic reserve, only assets that will maintain their liquidity even in the face of a systemic liquidity shock should be used. This could mean possibly excluding local government bonds or other local assets, though other assets in hard currency could be considered, such as the bonds of other highly rated sovereigns.

Once the decision has been made to use liquidity requirements as a macroprudential systemic liquidity tool, their design should be carefully considered. Higher remuneration rates should be placed on those liabilities considered to have the greatest flight risk—typically these are larger time deposits, often from corporate treasuries that are managing the liquid assets of a large firm or group of firms and deposits from mutual funds and other larger investors. Sight deposits, whether from corporations or individuals, that are truly held for transactional purposes are typically the least flight-prone and thus may be assigned the lowest rates appropriate to lower liquidity risks.

A systemic liquidity policy may also extend beyond banks to nonbanks or other institutions that offer deposit-like contracts. In some countries, insurance companies are allowed to offer contracts that resemble deposits in all but name. In others, some institutions offer retail customers short-term repo contracts backed by longer-term government bonds. And in some cases, mutual funds may pose liquidity risks. Financial structures differ across countries, and the links between different types of financial institutions may also vary. A systemic liquidity policy may wish to take into account all such contracts and linkages where they may pose material risks.



- To complement Basel III's bank-specific liquidity requirements with a systemic liquidity tool (see Box 6), banks could be required to maintain a fraction of the liquid assets set aside to fulfill Basel III requirements with a centralized custodian such as the central bank. This would aid monitoring and would allow the relevant authorities to publicize the systemwide liquidity available. These remunerated liquidity requirements would thus simply be a centralized form of compliance.<sup>87</sup> Knowing that the liquidity is there may boost investor confidence and prevent a systemic problem from occurring. But if the assets thus set aside are in local currency, and demand for liquidity were at some point to switch to hard currency, this mechanism would be less helpful; it might be necessary to require that some of this centralized liquidity tool be held in hard currency.

## Capital Requirements

Although many EMDEs already have capital requirements in line with the increased standards under Basel III, their regulators may choose to maintain the distance between international and national standards. This could have negative repercussions for lending to the private sector, especially for riskier borrowers such as SMEs. Specifically, many emerging markets set their capital requirements a few percentage points above international standards (a practice known as gold-plating) to reflect the higher overall risks in their economies and financial systems; they might therefore, if international standards are tightened, be tempted to also increase local standards further (see Box 7), even though this might still not be binding for banks, at least not during normal times.<sup>88</sup>

87. To avoid misinterpretations of the centralized approach, it is important to emphasize the responsibilities of banks managing their own liquidity by implementing and enforcing sound liquidity risk management requirements. The centralized approach is complementary to bank-level liquidity management.

88. See, for example, a recent discussion of capital requirements in Andean countries (Galindo, Rojas-Suarez, and del Valle 2012). This issue is not limited to EMDEs. Swiss authorities imposed higher capital requirements on G-SIFIs, a practice known as the Swiss Finish, before the adoption of Basel III and its capital surcharges for SIFIs.

Gold-plating raises more fundamental issues, however. Under the standardized approach, it is relatively easy for a country to adopt a higher capital requirement than the 8 percent recommended minimum under Basel II (and III). Under the various IRB approaches, which employ internal ratings and formulas derived from a particular calibration of a credit risk model, it is not so obvious how to do this; any ad hoc adjustment would undermine the idea of attempting to use credit risk models to match capital requirements more accurately to risk. At the same time, some EMDEs have extensive databases, including public credit registries, that cover virtually every loan in their financial systems; these databases can be used to calibrate appropriate capital requirements and check whether the proposed Basel III IRB approaches are appropriate. These EMDEs may then wish to consider recalibrating the Basel III formulas if they have the data available. Some countries have already used these databases in this direction (see Majnoni and Powell [2005] for a discussion of and estimates for the cases of Argentina, Brazil, and Mexico).<sup>89</sup> This discussion and the following recommendations are important not just in the context of maximizing the stability impact of the Basel III reforms, but also for the possible impact of Basel III on lending to specific market segments—a topic to which we will return.

An additional challenge in EMDEs relates to credit cycles and the application of macroprudential tools, including the countercyclical capital buffer, to mitigate the impact of these cycles on stability.<sup>90</sup> Fully understanding the differences in credit cycles between advanced economies, emerging markets, and low-income countries, as well as country-specific differences, is essential for the appropriate design of the necessary capital buffers.<sup>91</sup>

89. Majnoni and Powell (2005) use credit registry data for Argentina, Brazil, and Mexico to model capital requirements that correspond to value at risk of 99.0 and 99.9 percent of cases; they find a need for significantly higher capital requirements than under the Basel II standardized approach.

90. The countercyclical capital buffer is intended to protect the banking sector against losses that could be caused by cyclical systemic risks. Banks are required to add capital during boom times, which can then be released in a downturn.

91. In this regard, see the work of Mendoza and Terrones (2008, 2012).



A second concern is whether the credit-to-GDP gap (the deviation of the credit-to-GDP ratio from its trend) is the most appropriate baseline for guiding decisions on the activation and release of the countercyclical buffer; this concern is especially important in countries, such as many EMDEs, where structural changes in the data are present (see Castro et.al (2016)). Furthermore, measures of the credit-to-GDP ratio are limited to the regulated sector and thus cannot capture

the development of debt bubbles in nonregulated segments of the financial system.

### *Recommendations*

- Regulators should aim at a proper calibration of credit risk weights rather than a generic gold-plating level of capital requirements. Ideally, determining risk weights should be a data-driven process, undertaken with the use of credit registry data to

## **Box 7. Gold-Plating versus Recalibrating for EMDEs**

Many countries have chosen to adopt higher capital requirements than the Basel II 8 percent recommended minimum. This practice has been referred to as gold-plating, although it is perhaps better understood as a way of ensuring that regulatory requirements match the true risks. The move to Basel III in the wake of the global financial crisis was a recognition that the 8 percent minimum was not sufficient. Basel III recommends a set of buffers on top of the 8 percent minimum, calls for stricter requirements on the quality of capital (higher recommended levels for Tier 1 capital), and includes a minimum leverage ratio. A pertinent question, then, is whether EMDEs should continue to gold-plate under Basel III's stricter rules.

Some countries have already said that they will do so. For example, the central banks of the East African Community (EAC), through their Monetary Affairs Committee (MAC), agreed to maintain a 4-percentage-point premium (as they did under Basel I) and apply it to the Basel III minimum capital adequacy requirements, thus imposing a minimum core capital-to-risk-weighted assets (RWA) ratio of 10 percent and a minimum total capital-to-RWA ratio of 12 percent to all banks across all partner states in the EAC. The MAC also agreed that partner states would impose a capital conservation buffer of 2.5 percent of

RWA and apply a capital surcharge for D-SIBs of 1.0–3.5 percent of RWA, in line with the Basel III recommendations. Jordan, on the other hand, already had higher capital requirements under Basel II but decided not to increase them further under Basel III, thus reducing its premium on balance.<sup>92</sup> Given the more complex structure of Basel III, with its suite of possible approaches and set of add-ons, countries may wish to evaluate which elements they should implement and how those elements should be calibrated given the nature of their own financial systems and their assessment of the risks. This is not to advocate a mix-and-match approach or to advocate lower requirements. Indeed, most EMDEs will likely wish to have requirements stricter than Basel III. But given the many different choices available, countries will need to decide how to implement the Basel III proposals and whether the Pillar 1 minimum recommendations are sufficient or should be strengthened.<sup>93</sup>

92. In another example, Botswana has maintained its capital adequacy ratio at 15 percent for many years since Basel I and through Basel II, with an emphasis on ensuring that about half of the ratio is met from Tier 1 capital (shareholder funds plus retained earnings).

93. As discussed in the introduction, members of the FSB and the BCBS have made a commitment to implement Basel III as recommended minimum standards.

calibrate the riskiness of different portfolios. In line with the proportionality principle, we distinguish between two groups of countries according to data availability. For the first group, those where loan-level data are not available, collection of such data needs to be improved; in the meantime, capital risk weights as recommended by the Basel Committee under the standardized approach might be the default option. For the second group, where loan-level data are available, risk weights for credit exposures can be calibrated to the country's circumstances, thus better reflecting actual risk than what the use of advanced-country profiles and characteristics would indicate.<sup>94</sup> Supervisors can then compare these country-specific calibrated risk weights with the capital risk weights that would apply under both the standardized and the IRB approaches of Basel III before deciding on the risk weight model (standardized, IRB or country-specific) to be prescribed by regulators. As already discussed, we do not advocate that every country develop its own risk weights, but rather that countries enter into regional agreements on such context-specific calibration.<sup>95</sup> We also stress that this approach requires strong supervisory skills and independence.

- Since the indicator recommended under Basel III to trigger the countercyclical capital buffer, namely, the credit-to-GDP gap, might not work effectively in many EMDEs (or indeed in some advanced countries),<sup>96</sup> other complementary gauges might need to be considered, as suggested by the Basel Committee, including real credit growth, credit conditions (e.g., as gleaned from loan officer surveys),

94. Majnoni and Powell (2005) propose a centralized rating-based approach for EMDEs, which would lie somewhere between the standardized and the IRB approaches of Basel II. The idea is that banks would rate loans according to a scale to be set by the regulator, who would also set default probabilities and capital requirements for different buckets of loans. Such an approach would allow for an enhancement of the monitoring and enforcement of capital requirements in EMDEs.

95. There is an argument that such country groups should be formed according to country characteristics rather than purely geographic criteria. However, geographically based cooperation among regulators might be easier to achieve.

96. That this might also be the case in some advanced economies is suggested by Repullo and Saurina (2011).

and corporate and household data.<sup>97</sup> We encourage more country-specific and global cooperation in research to design and test such alternative gauges.

- In highly volatile environments with hard-to-identify or nonidentifiable risks (“unknown unknowns”), limited data availability, or both, standardized capital and liquidity requirements, including a stronger focus on the *leverage ratio*, might be necessary. This ratio, defined as the ratio of capital to *unweighted* assets, has the advantage of not being subject to variation in risk weights across asset classes or over time; it thus constitutes a more consistent capital buffer.

## Looking beyond Basel III Capital and Liquidity Requirements

One of the characteristics of EMDEs that we have identified as typical is their higher macroeconomic volatility.<sup>98</sup> A high dependence on commodities trade (whether as an exporter or as an importer) and high sectoral concentration result in a higher concentration in certain assets on banks' balance sheets and thus a higher probability of fragility and greater potential losses when problems occur. Similarly, high price and exchange rate volatility can translate into volatility in measures of banks' liquidity and solvency, especially in financial systems that rely heavily on foreign-currency assets and funding. Changes in exchange rates can thus easily result in asset-liability mismatches or, even if foreign exchange assets and liabilities are matched, in increased liquidity or credit risk. This situation is exacerbated in countries with a high degree of financial dollarization, especially if foreign-currency debt is taken on by households and firms without

97. To a certain extent, this is also reflected in the “Frequently Asked Questions” on the Basel III Countercyclical Capital Buffer, which states that “authorities are expected to calculate the credit-to-GDP guide, which serves as a common reference point for taking buffer decisions . . . . [T]he credit-to-GDP guide does not necessarily need to play a dominant role, but at the same time it should not be disregarded” (p. 3). One example of the use of household overindebtedness data is Kukk (2016). For bank-level indicators, see Fahlenbrach, Prilmeier, and Stulz (2018).

98. For what follows, see, for example, the discussion in Kasakende, Bagyenda, and Brownbridge (2012).

foreign-currency earnings. High macroeconomic volatility poses even more of a challenge in small financial systems, as it increases banks' reliance on risk diversification and hedging tools offered by public capital markets, which may be in short supply. Another area of concern not properly addressed are the large common credit exposures across banks in economies that are not sectorally well diversified—that is, banks might all be heavily exposed to the same dominant sector or sectors of the economy. This lack of diversification calls for additional micro- and macroprudential tools.

In summary, the capital and liquidity requirements recommended by Basel III and the core regulatory toolbox used in advanced countries might not be sufficient to address critical stability concerns characteristic of many EMDEs: the former because they are often not binding, and the latter because of the limitations mentioned above.<sup>99</sup> Alternative tools, as recommended below, might therefore be needed to suit these characteristics of EMDEs, even if these tools are not used in advanced countries. Their usefulness varies with the specific characteristics of each EMDE and its financial system.

### *Recommendations*

- Given EMDEs' higher macroeconomic volatility and the fact that capital and liquidity requirements are often not binding, regulators in these countries might be better off using cruder instruments than proposed under Basel III, including lending and exposure restrictions like those already in place in some EMDEs. These restrictions would go beyond single-exposure limits and could refer to sectoral, geographic, or foreign-currency lending exposures. The need for these measures derives from the high sectoral concentration of many EMDEs, the geographic concentration of their economic activity

99. There are also additional risks, not fully addressed by Basel III, that affect both advanced economies and EMDEs. A prominent one is the surge in new forms of operational risks, such as cybersecurity, legal, and sanctions risks. It is quite unlikely that Pillar 2 (on banking supervision) would be sufficient to deal with these risks.

(and thus often of their bank lending), and, in some cases, the large shares of foreign currencies in their deposit taking and lending. Focusing on a zero net foreign exchange position (i.e., matching foreign assets with liabilities) is not sufficient.

- Macroprudential tools play a critical role in the regulatory toolbox, but knowledge about what works under which circumstances remains limited. We therefore encourage more country-specific research and global cooperation among regulatory authorities in this area. EMDEs are, on average, much more advanced than the advanced economies in the use of some macroprudential policy tools that address some of these fragility sources (see Cerutti et al., 2017), and their experience thus provides an important analytical learning opportunity across EMDEs for what has worked and what has not worked to address different sources of fragility.

## Development of the Local Banking System and Reallocation of Bank Credit

Although regulatory standards aim primarily at the stability of individual banks and of the banking system, they can have important repercussions for the development and efficiency of local banking markets in EMDEs. Tighter capital requirements, in terms of both higher levels and a higher quality of capital (including introduction of the leverage ratio), as well as the introduction of new liquidity requirements, can increase costs for banks, not only by making them to tap more expensive funding sources and increase their holdings of lower-return liquid assets, but also through higher compliance costs. These higher costs might induce banks to withdraw from certain product markets, which might reduce competition for lending. Although such effects can arise in both advanced economies and emerging markets, most EMDEs rely more heavily on the banking system than on local capital markets;

thus, any increases in costs and any reduced availability of bank lending will have much broader repercussions for these economies. These consequences are intentional and might increase stability (subject to the caveats discussed in the previous subsection), but it is important to keep in mind that financial stability is a precondition, though not the only one, for a thriving and efficient financial system.

In the following, we discuss different channels through which Basel III adoption can affect the development of local banking systems. We consider specific recommendations throughout the text before presenting more general recommendations for EMDE regulators, as well as for international institutions and fora regarding the regulatory reform process, to address these different costs and distortions.

### Complexity and Compliance Costs

The excessive complexity in Basel III relative to the human and technical infrastructural capacity of many low- and lower-middle-income countries makes the implementation of Basel III (and Basel II) and compliance with these standards, even under the standardized approach, very costly in these economies. The skill base in many EMDE supervisory agencies is limited, and they often must compete with commercial banks for the best staff, which increases costs. Critically, the limited scale of financial systems in many developing countries implies that these compliance costs—mostly of a fixed-cost nature—have to be distributed over fewer assets and across smaller and fewer transactions.<sup>100</sup> Compliance costs and appropriate calibration to the needs of each country are thus critical considerations for EMDEs when deciding whether and to what extent to adopt and implement Basel III recommendations.

On a more general level, a focus on implementing the complex Basel III rules could divert resources away from other priorities, such as financial inclusion

100. See, for example, Bossone, Honohan, and Long (2001).

or the development of nonbank financial institutions. This problem relates to the potential trade-off between financial development and stability, whereby an emphasis on implementing Basel III might pull resources away from initiatives to deepen and broaden the financial system.

### Recommendations

- Given the lower level of banking-sector development and capacity constraints in many EMDEs, and in line with the principles of proportionality and of reducing the trade-off between financial stability and efficiency, it is critical that EMDEs undertake a cost-benefit analysis before introducing new regulatory standards. Such an analysis should weigh the possible benefits of greater stability from new regulatory tools and policies against the costs for regulators, regulated entities, and the economy.
- To smooth the transition to new regulatory standards, it is important to announce any changes early and allow for long implementation periods, including a gradual introduction of tighter capital or liquidity requirements.<sup>101</sup>

### Effects on Cost, Volume, and Composition of Lending

Capital requirements are currently not binding for many emerging-market banks, and overall it seems unlikely that, in the short to medium term, tighter capital requirements will reduce aggregate lending by banks in most emerging markets;<sup>102</sup> however, the

101. The example of Peru, as discussed in Fang et al. (2018), has shown the advantage of a gradual and preannounced implementation process in limiting the impact on aggregate lending.

102. See, for example, the discussion in Galindo, Rojas-Suarez, and del Valle (2012) cited earlier. See also Fang et al. (2018) for the case of Peru. However, especially in many low-income countries, it is not capital or liquidity requirements that are constraining but rather institutional deficiencies and the lack of bankable projects and clients. Looking beyond banks to the macroeconomic picture (including the level of government debt), there is even a concern of rising overindebtedness in many low-income countries.

tightening of capital and liquidity requirements might have negative repercussions for the funding of specific sectors. One can expect changes in the composition of loan portfolios, and of balance sheets more generally, as lending becomes pricier and more limited in segments that are considered riskier as well as in segments that rely more on longer maturities.

Take, for example, SME finance. As shown in Figure 10 (and by an extensive literature), SMEs face substantially tighter financing constraints than do large corporations. SME lending makes up only a small part of banks' loan portfolios, but given that SMEs rely much more on bank finance than do larger corporations and have fewer alternative formal funding sources available (Beck, Demirguc-Kunt, and Maksimovic, 2008), the effect on the real economy of changes in bank regulations might be exacerbated.<sup>103</sup> This effect is stronger in EMDEs than in advanced countries, given the former's higher opacity of firms and the narrower array of assets available for collateral.<sup>104</sup>

There might be similar negative effects on securitization. Securitization—the origination of loans by banks and the subsequent bundling and sale of these loans on capital markets or their direct placement with investors—has been used by banks for many decades, but its use increased rapidly in the 2000s, in the run-up to the global financial crisis. Advantages of securitization are that it increases banks' lending capacity and allows risk to be transferred to other parties, thus benefiting both the banks themselves and investors with an appetite for these securities. Securitization has been most popular for homogeneous long-term

loans backed by good collateral, such as mortgage loans. More recently, securitization schemes for SME loans have also been attempted. As the global financial crisis made clear, however, there are serious risks to securitization: it creates incentives for banks to take aggressive risks and relax their screening of borrowers (because the risks can be passed on to the securities buyers); it encourages herd behavior, as banks pile into promising new securitization activities and then exit en masse when trouble arises; and it promotes stronger connectedness across financial institutions, including across borders, resulting in strong contagion effects during times of systemic distress.

Basel III has introduced tighter risk weights for securitized assets,<sup>105</sup> with these weights increasing not only with lower credit ratings but also with longer maturities, while at the same time it has tightened the assumptions to be used for IRB models. These tighter requirements might reduce the ability of banks to tap additional funding through securitization, with potentially negative repercussions for private-sector lending, including housing and SME lending.

In summary, tightening of regulatory requirements to increase financial stability can have repercussions for the composition of banks' loan portfolios, with riskier sectors seeing a reduction in lending. If (and only if) the resulting benefits for financial stability are clear, this is a price worth paying. However, given that many EMDEs have not, or not fully, adopted and implemented the Basel III recommendations, more analysis is called for. We stress that we do not advocate an easing of risk weights for specific lending segments, but rather the adoption of alternative tools and policies to foster access to funding by SMEs and other disadvantaged groups.

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103. Although an important part of the discussion in this area has focused on a tightening effect of Basel III on SME finance, there might also be countervailing effects favorable to SME lending, such as the tightening of large exposure rules. Similarly, the LCR liquidity requirement includes the assumption that credit to small firms is drawn down only by 5 percent in a 30-day period (the drawdown assumption for large firms is 100 percent), which might also favor SME lending.

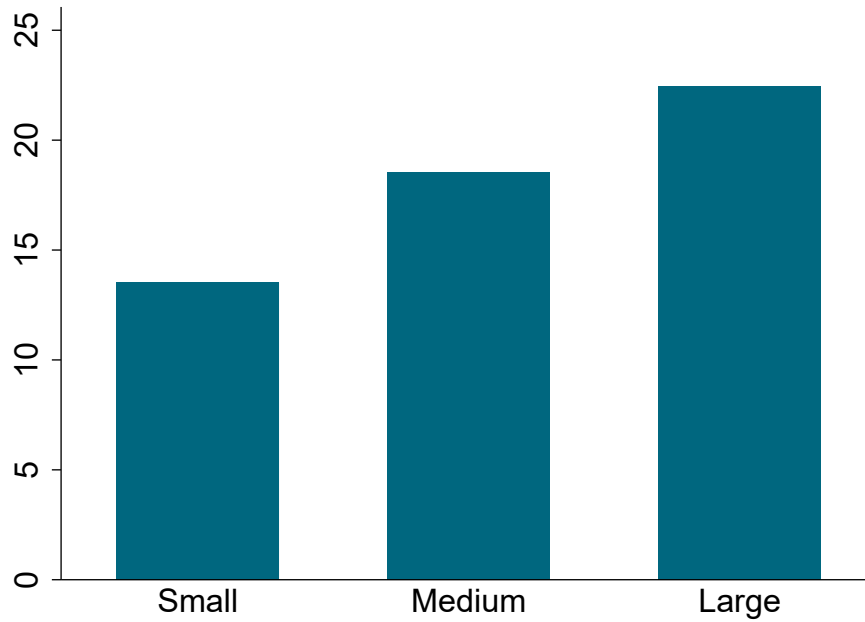
104. Analysts have also argued that the reduced eligibility of collateral for regulatory capital purposes under the new bank reforms might have adverse consequences on the pricing and availability of finance for SMEs (FSB (2019b)).

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105. See BCBS (2016).



**Figure 10.** Proportion of Investments Financed by Banks for Small, Medium-Sized, and Large Enterprises in EMDEs (average 2015–17 in percent)



Source: Authors' calculations based on Enterprise Surveys (2018).

### Recommendations

- To repeat an earlier recommendation: it would be helpful if regulators calibrated risk weights for specific lending segments to the circumstances of different EMDEs where such data are available (or if not, to develop such data sources when feasible). In other words, regulators should seek to fine-tune these risk weights to the stability needs of EMDEs. This effectively amounts to regulators undertaking a modified (country- or region-specific) approach to replace the risk weights that would apply under the standardized approach or the Basel III IRB approach (see the earlier discussion in the section on capital requirements).
- One example of this is SME lending; more generally, the risk profile of different lending segments might be different for assessment on a loan-by-loan basis than for assessment as a whole portfolio. However, such calibration might not necessarily result in lower risk weights for SME lending but could result in higher ones.
- Another loan category that could benefit from country- or region-specific calibration is portfolios of securitized loans. Informed by the transatlantic experience of the global financial crisis with debt claims based on securitized assets, regulators have raised the risk weights on these assets. However, there is wide variation in the development of securitization markets across the globe, and thus in the risk profile of securitized assets, which therefore again calls for country- or region-specific calibration.
- Policymakers often profess their support for lending to certain “marginalized” groups, such as SMEs, but they should avoid the temptation to use regulatory subsidies, such as risk weights



that do not reflect the true risk of SME loan portfolios, to tilt the trade-off between financial development and stability. In the best case, doing so might not have any impact (such as the SME support factor in the European Union<sup>106</sup>); in the worst case, however, it might result in greater fragility. In line with the Tinbergen rule—the number of policy instruments should match the number of policy objectives—rather than using stability-oriented regulatory tools, it would be better to use other, nonregulatory tools, such as partial-credit guarantee schemes. Beyond such market interventions, it is critical to focus on the institutional framework that enables SME lending, including the establishment and effective functioning of credit and collateral registries, contract enforcement, and reform of the legal system at large, and on creating a competitive environment that provides incentives for lenders to reach out to the SME market.

### *Some Broader Recommendations for the Regulatory Reform Process*

We also offer the following recommendations to help maximize the benefits and minimize the challenges of Basel III adoption and implementation for local banking system development. These recommendations concern regulators in EMDEs and in IFIs, including the FSB.

- Given the spillover effects on EMDEs of regulatory reform decisions in advanced countries, it is important to deepen mechanisms for learning from other EMDE regulators as a complement to consultations with international standard-setting bodies. Along the same lines, it might be helpful for EMDE regulators to coordinate with each other with respect to the adoption and implementation of Basel III, to jointly identify problems

106. Although Izquierdo et al. (2017) find some evidence for a positive effect in the case of Spain, an EU-wide study found no evidence (EBA, 2016). See also Mayordomo and Rodríguez-Moreno (2018) for findings similar to those of the EBA study.

and work on solutions. Regional associations of central banks, such as the African Association of Central Banks (AACB) and the Regional Association of Latin American and Caribbean Central Banks,<sup>107</sup> could provide an institutional setting for such coordination.

- More research needs to be conducted in EMDEs themselves to examine the repercussions of Basel III implementation for credit allocation in the real economy.<sup>108</sup> On the one hand, there is a ready availability of microlevel data in many EMDEs (e.g., in the form of credit registry data). On the other hand, any research agenda set in the FSB member countries will primarily inevitably focus primarily on global or advanced-country questions and challenges. An active research agenda on the Basel III challenges for EMDEs will be an important accompaniment to the adoption and implementation of Basel III in these countries and to allow for fine-tuning of this process. Research initiatives similar to the IBRN, but focused on EMDEs, perhaps coordinated by regional associations of central banks or regional development banks, could prove useful.<sup>109</sup>

Although most of the recommendations in this section are targeted at policymakers and regulators in EMDEs who are considering whether and how to adopt and implement Basel III, we recognize that the adoption of Basel III in advanced countries and large emerging markets might constitute an externality for EMDEs to the extent they see themselves under an obligation to adopt this framework to signal their regulatory and supervisory quality.

107. Known in Spanish as the Centro de Estudios Monetarios Latinoamericanos (CEMLA).

108. One such example is the recent Peru study mentioned above, which relied on data and information from the local authorities as part of the FSAP (Fang et al., 2018).

109. One example is the recent research project initiated by the Latin America office of the BIS on the effects of macroprudential policies across different Latin American countries. Another is a recent research initiative by the Inter-American Development Bank on the effect of competition, using microdata available from several Latin American central banks.

- Given that many EMDEs have been eager to adopt and implement at least parts of Basel III, even though its standards were developed primarily with large cross-border banks in advanced economies in mind, it would be good to open the standard-setting processes to more meaningful input from more EMDE representatives. The Basel Committee already includes some EMDE representatives, and the strengthened role of the G20 opens the process for significant input from the largest EMDEs, but more will be needed in order to take the interests of smaller and less developed EMDEs directly into account. This could be done by including non-G20 EMDEs in the standard-setting process on a rotating basis. Alternatively, one could consider creating additional chairs that represent certain groups of EMDEs, which countries within each group would fill on a rotating basis.<sup>110</sup>
- Compliance with the Basel Core Principles (BCP) is a prerequisite for effective implementation of Basel III recommendations. However, in many EMDEs there are significant deficiencies in meeting key provisions of the BCP. Thus, it is important that the IFIs (including the Basel Committee) make explicit efforts to favor adoption of the BCP as the *primary* signal of regulatory quality in EMDEs, thus helping to change the public perception that compliance with Basel III is the right metric for EMDEs to follow. One way to go about this would be to set a regular timetable for assessment of individual EMDEs' compliance with the BCPs, perhaps undertaken by the World Bank or the IMF. At the moment, BCP assessments are undertaken in the context of the FSAP, and not on a regular basis for many smaller developing economies, and the findings are published only with approval of the government. A more prominent role for BCP assessments would help strengthen the focus on the BCP as a metric for regulatory quality.

110. This would imitate the arrangement in the World Bank and IMF executive boards.

## Looking beyond Banks: Financial Development and the Real Economy

As discussed above, some EMDEs might experience a reduction in banks' long-term lending, as well as in their lending to riskier borrowers and riskier asset classes, upon their adoption of Basel III. These are intended consequences, as they aim to make the banking system more resilient and more stable, but they do leave a funding gap for certain segments of the economy. Put differently, the increasing focus on the stability of the banking system puts a premium on the development of nonbanking financial institutions. Concerns regarding the nonbank financial segments are two-fold. On the one hand, there might be a "knock-on effect" from the Basel process to the regulation of nonbank financial intermediaries, tightening their capital and reserve requirements and imposing on them more stringent maturity-mismatch and liquidity constraints (as happened in the case of Solvency II for the insurance industry in Europe). That is, the tendency to restrict aggressive risk taking in the banking system might inform and motivate similar regulatory reforms for other, nonbank financial segments, which in turn might reduce their risk appetite, to the detriment of long-term financing economywide. Such restrictions might include regulation of insurance companies and pension funds, as well as of cooperatives and microfinance institutions. Concern about this cross-segment effect of regulation is partly informed by the fact that financial systems in many EMDEs (especially in Latin America) are dominated by financial groups with activities across banking, insurance, and capital markets.

There is a need for these segments to play a stronger role in intermediation. As banks face new liquidity requirements that restrict their ability to transform maturities, they will come to play less of a role in long-term finance. The need thus arises for nonbank financial institutions to take a greater role in this activity. Contractual savings institutions, including life insurance companies, pension funds, and mutual funds, typically have long-term liabilities that should be matched with long-term assets. Developing and strengthening these

institutions in EMDEs, together with public and private capital markets, for both equity and debt, should therefore be a priority. Enhancing the availability of equity funding would also help address the debt-equity imbalance in many EMDEs, with second-tier capital markets an option in larger EMDEs. Where public capital markets do not exist or are very shallow (mostly because of their small scale), fostering the private equity industry is an important policy objective that requires a conducive regulatory and legal framework, as well as adjustments in the capital account regime in the case of foreign equity funds.

### Recommendations

One of the principles set out in this report is the need to minimize the tension between the objectives of financial development and of financial stability in EMDEs. This tension might arise especially in those EMDEs where supervision of different segments of the financial system is concentrated in a single institution, such as in the case of Mexico.<sup>111</sup> Together with the principle of proportionality, this prompts two recommendations:

- Although financial stability is the primary objective of regulation, it will be important to strengthen the developmental objective of regulation or supervision of nonbank segments of the financial system by setting it as a secondary objective to rebalance the trade-off between that objective and the stability objective.<sup>112</sup>
- The principle of proportionality demands a regulatory framework that ensures a level playing field for institutions offering similar financial products. This means similar regulatory requirements for similar financial services and products, as long as the overall risk of the financial institutions offering the products or service is also similar.

111. There might, however, also be an opposite trend, pushing intermediation business outside the bank regulatory perimeter to these more natural long-term investors.

112. This is similar to the case of Bank of England, which has competition as a secondary goal. Having a developmental objective as secondary goal means that such aspects must systematically be assessed ahead of regulatory/supervisory decisions.

This serves the purpose of avoiding both regulatory arbitrage and too stringent regulation and supervision where not needed (see Claessens and Rojas-Suarez [2016] for an in-depth discussion).

Reforms to support the development of contractual savings institutions are wide ranging and country specific but have the overall goal of increasing domestic saving and the provision of long-term funding. Here the focus should be on privately owned and managed, but regulated, institutions. Among the policies that have been proposed (and implemented in a number of countries) are such major reforms as shifting the pension system from a pay-as-you-go system toward a capital-based (or “funded”) system. Where this has been undertaken, it has entailed regulatory and governance reforms in the pension fund and insurance sectors and efforts to ensure a competitive environment (e.g., by allowing foreign players to use basic tools such as mortality tables). A related matter is the development of public capital markets and private equity and debt investment vehicles, to allow contractual savings institutions to channel their funding.

- It is important to avoid excessive political interference in this process. A call for the development of nonbank sources of funding does *not* imply a call for more government-owned and -managed development finance institutions. Although such institutions can, in theory, contribute to financial deepening and can help maintain private sector lending during downturns, the experience with direct lending by these institutions in most EMDEs has been very negative.<sup>113</sup> On the other hand, existing development finance institutions can take an important role in developing new market segments, as discussed by De la Torre, Gozzi, and Schmukler (2017).
- An additional option to foster the development of nonbank financial institutions would be for countries to create a “champion” for long-term finance in the regulatory and political landscape.

113. See World Bank (2012).

This would follow the example in some countries of financial inclusion champions, which focus specifically on vetting policies and regulations under the aspect of making the financial system more inclusive and launching policy initiatives.<sup>114</sup>

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114. Some very different institutions have taken the role of financial inclusion champion in different countries. In Kenya, it is primarily the central bank; in Colombia, a government-sponsored think tank called Banca de las Oportunidades; and in Indonesia, a Financial Inclusion Council with representation by the government, bank supervisors, and the central bank.

A long-term finance champion would similarly vet policies and regulations so as to promote the deepening of long-term finance in the country and would launch policy initiatives in this area. Such a champion would not necessarily have to be based on a formal legal authority or grounded in a law; it could instead be an informal arrangement or take the form of a council of different regulatory and political entities.

## Section VI.

# Concluding Remarks

A sound financial regulatory framework is critical for minimizing the risk imposed by financial system fragility while also allowing the system to support the real economy. The global financial crisis has led to an overhaul of the international regulatory framework known as Basel III. A number of countries have already adopted some of the Basel III recommendations, but a significant proportion of EMDEs are still considering whether to adopt this framework wholesale, partly, or at all. Even should they choose not to adopt Basel III, its adoption by the advanced countries (and others) will render them vulnerable to spillover effects from those countries through effects on cross-border bank flows and altered behavior of local affiliates of multinational banks.

This report has discussed how to make Basel III work for EMDEs, starting from the observation that developing and emerging economies and their financial systems have certain typical characteristics that require an adjustment to Basel III regulation in these jurisdictions. Specifically, their volatile access to international capital markets, their high macroeconomic and financial volatility, their shallow financial systems, their limited transparency and data availability, and their difficult governance and capacity challenges, taken together, require a different approach to regulatory reform than what might suit the typical advanced economy. We have also posited that *proportionality* as to risks and capacities, *minimization of negative spillover effects* from the adoption and implementation of Basel III in advanced economies and large emerging markets, and *minimization of the trade-off* between financial stability and development are important principles to be observed in determining how to make Basel III work in these economies. It is the interaction

of these principles with the above characteristics that has driven our analysis and recommendations.

The potential adverse effects of Basel III can come through three channels. The first is through the implementation of Basel III in the advanced countries for which it was primarily designed; indeed, their implementation may have played some role in explaining the recent reduction in cross-border lending to EMDEs, a trend that has been, however, partly countered by an increase in bond issuance by these countries and in increased South-South lending. The reduction in cross-border lending generally might also help explain the even-sharper reduction in infrastructure lending to EMDEs. As a second channel, in financial systems where international banks account for a large share of lending, Basel III can have important effects on competition between the affiliates of advanced-country multinational banks and domestic banks in EMDEs. In countries where these affiliates have had to adopt Basel III rapidly whereas domestic banks have not, the former find themselves at a disadvantage vis-à-vis the latter, with negative repercussions for their lending in the host country and for investment in host-country sovereign bonds (which under home-country regulation might carry a nonzero risk weight). The third channel consists of the potential unanticipated effects on financial stability and financial deepening in EMDEs from the implementation of Basel III in EMDEs themselves. The threat to financial stability arises because the new international standards might not address some of the key financial risks unique to EMDEs; the threat to deepening arises because of the effects on capital market development due to banks facing higher costs for their participation, including their possible market-making role. In addition, the implementation

of the highly complex Basel III framework in EMDEs involves compliance costs that might drive some financial intermediation outside the regulatory perimeter, thus endangering financial stability.

Our recommendations are directed both at EMDE policymakers considering how to adjust Basel III to their economies' needs and at home-country supervisors of global banks whose lending to EMDEs, whether direct or through local affiliates, is influenced by Basel III. We have also offered a series of recommendations for multilateral organizations, including the BCBS and the FSB, as well as the IMF, the World Bank, and the regional development banks. One important recurring theme has been the need for more evaluation of the impact of new regulatory tools on EMDEs. Although the FSB has been undertaking evaluations of the impact of Basel III on infrastructure and SME finance, these evaluations are limited to the member countries and thus exclude the vast majority of EMDEs. Another important theme

has been the need to improve data availability in EMDEs (e.g., in the form of credit registries) to better calibrate capital and liquidity requirements to the risks in these economies. Finally, we acknowledge the need for better cooperation between regulators and supervisors in advanced countries and emerging markets and the important role of multilateral organizations in this process.

Although more research beyond this Task Force Report is needed to answer crucial questions on the realized and anticipated effects of Basel III on EMDEs, it is now clear that the new regulatory standard is transforming the global financial landscape and will do so for years to come. It is our hope that policymakers from both advanced economies and EMDEs, as well as from multilateral organizations and the private sector, can work together effectively to ensure that Basel III truly becomes a global public good—promoting financial stability and supporting economic growth for all.



# Annex I.

## Capital and Liquidity Requirements under Basel III

In December 2017 the BCBS issued the finalized version of Basel III, the new regulatory framework aimed at strengthening the quality of risk management, regulation, and supervision of the banking industry globally. After a first version was issued in 2010, the Basel III framework underwent a number of revisions beginning in 2013, as a response to regulatory deficiencies that contributed to the global financial crisis.

A central modification of Basel III from its precrisis predecessor Basel II is that financial institutions are now required to hold more capital, and capital of better quality. In addition, new liquidity requirements, absent in Basel II, were incorporated. These capital and liquidity requirements, the focus of this Annex, constitute the so-called Pillar 1 of Basel III. Two other pillars—on the supervisory review process (Pillar 2) and the enhanced disclosure and discipline of markets (Pillar 3)—were also augmented relative to their Basel II versions.

### Capital Requirements

Although the minimum capital requirement for banks was left unchanged at 8 percent, Basel III requires that common equity constitute the majority of capital, so as to improve overall quality of bank capital. Thus, the ratio of common equity to risk-weighted assets (RWA) was raised from 2 percent under Basel II to 4.5 percent under Basel III. Basel III also introduced two additional capital buffers:

- A capital conservation buffer, for the purpose of absorbing losses during periods of financial stress. Capital for this purpose, set at 2.5 percent of assets, must be composed exclusively of common equity.
- A countercyclical capital buffer, which should be built up in good economic times and can be drawn down in times of stress. This buffer can fluctuate within a range of 0 to 2.5 percent according to national circumstances. Capital under this buffer must come from common equity Tier 1 capital.

The major components in the calculation of RWA are credit risk, market risk, and operational risk. Since different assets have different risk characteristics, a risk weight is assigned to each type of asset. There are two alternative ways for banks to estimate credit risk and therefore RWA. The first is the standardized approach, where it is country supervisors who set the risk weights that banks have to assign to their exposures in determining RWA. The second is the IRB approach, where banks meeting certain conditions are allowed to use their own internal models to estimate credit risk and RWA. The IRB approach has two levels: (1) the foundation method (F-IRB), where banks estimate the probability of default for each asset class, and the supervisors supply other inputs necessary to calculate RWA and thus capital charges; and (2) the advanced method (A-IRB), where banks with sufficiently developed internal capital allocation processes can supply other inputs as well.

The finalized Basel III Accord of 2017 introduced important changes in the calculation of RWA, and therefore in capital requirements, from the 2010 version. According to the BCBS, the purpose of the modifications was to address two issues. The first was a loss in credibility of the Basel regulatory framework due to an observed wide variation in RWA across banks with similar risk exposures, which made it difficult to compare capital ratios across banks. The second was a recognition that IRB models, rather than reflecting a better risk assessment of bank exposures than the standardized

approach, can be used by banks to reduce capital requirements. Moreover, assets with low default exposures are difficult to model. Based on these considerations, Basel III introduced constraints on banks' use of IRB models. The most important changes are as follows:

- For the standardized approach to credit risk, banks must provide a more detailed risk-weighting structure for credit risk and reduce reliance on external credit ratings.
- For the IRB approach to credit risk,
  - banks may no longer use the A-IRB approach for exposures to financial institutions and large corporates;
  - no IRB approach may be used for equity exposures; and
  - where the IRB approach is retained, minimum levels are applied to the probability of default and to other inputs.
- Banks' calculation of RWA generated by IRB models cannot, in the aggregate, be smaller than 72.5 percent of the RWA estimated using the standardized approach. This is called the *output floor*.

These requirements are supplemented by a non-risk-based leverage ratio, which is constructed as the ratio of the bank's Tier I capital (common equity plus other high-absorbing capital) to its total consolidated assets (on- and off-balance-sheet exposures). The required ratio is 3 percent for all internationally active banks. In addition, the 2017 revision of Basel III made G-SIBs subject to higher leverage ratio requirements.

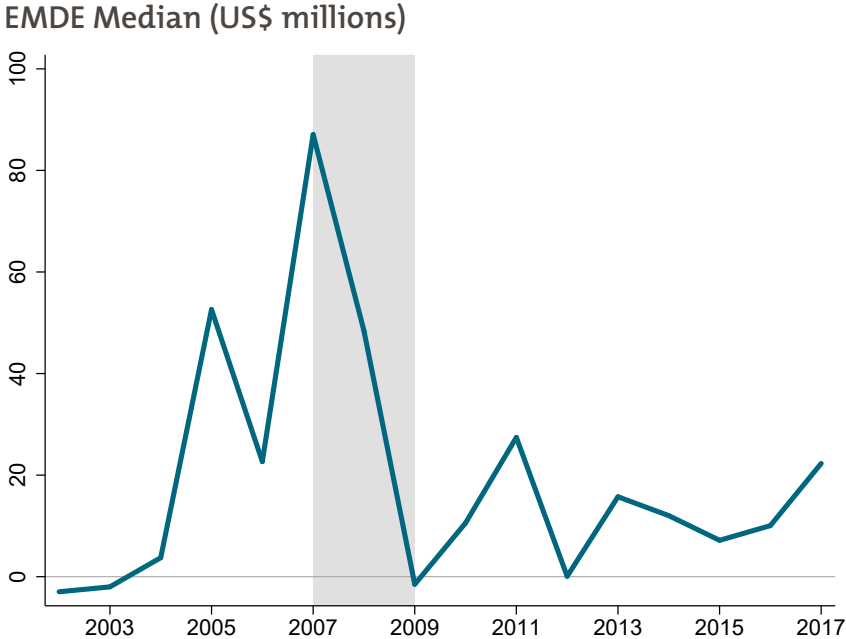
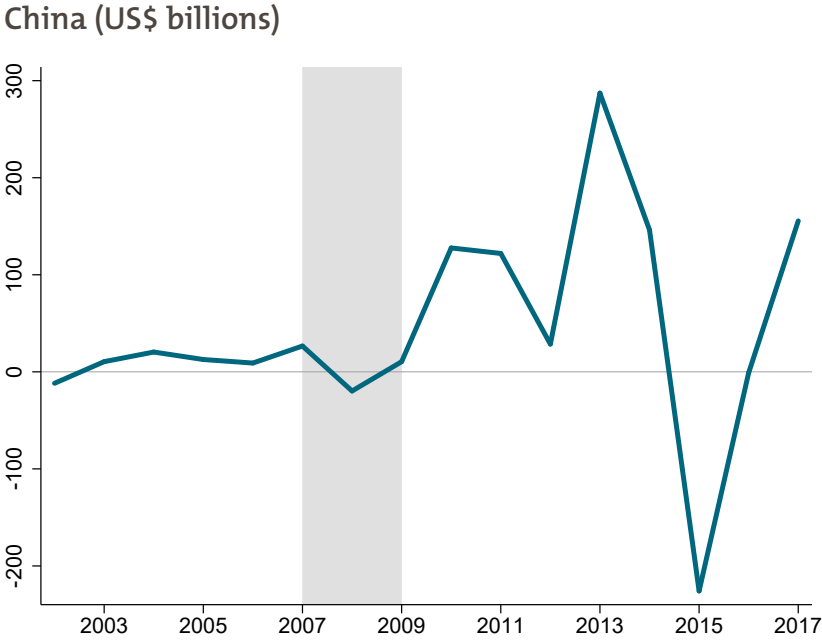
## Liquidity Requirements

Basel III has introduced two liquidity ratios:

- The liquidity coverage ratio, intended to ensure that banks have the necessary amount of HQLA to face short-term liquidity disruptions. This ratio requires that HQLA be sufficient to fund cash outflows for 30 days under a severe-stress scenario.
- The net stable funding ratio, aimed at inducing banks to increase their reliance on stable sources of funding so as to avoid erosions to their liquidity due to disruptions in more volatile short-term sources of funding. Thus, this ratio limits overreliance on short-term wholesale funding.

# Annex II.

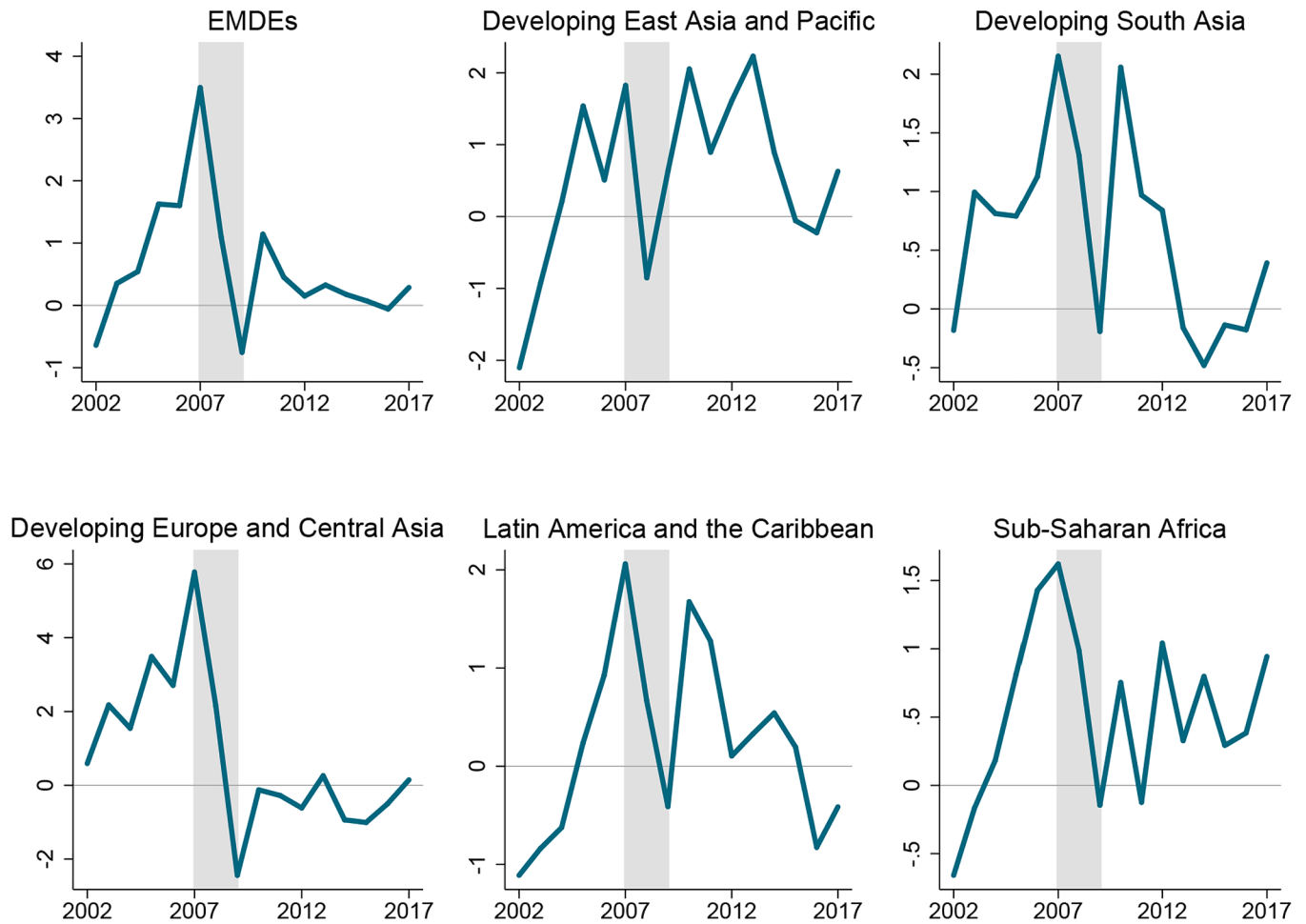
## Cross-Border Bank Lending to EMDEs: China and EMDE Median



Source: BIS LBS.  
Note: The charts portray exchange rate and break-adjusted flows.

# Annex III.

## Cross-Border Bank Lending to EMDEs by Region in Percentages of GDP



Source: BIS LBS.

Note: The charts portray exchange rate and break-adjusted flows. Negative flow numbers imply that repayment of loans was larger than new disbursement.

## Annex IV.

### Anti–Money Laundering Regulations and Cross-Border Transactions

As mentioned in the text, in addition to stricter prudential requirements under Basel III and other requirements such as stress tests and IFRS 9 accounting standards, the high cost of compliance with new anti–money laundering (AML) regulations has exacerbated the process of de-risking, as reflected in a significant decrease of correspondent banking relationships between global banks and banks from EMDEs. Although the effects of these and other regulatory burdens reinforce each other, the recent (but still scant) literature on the subject seems to conclude that the effects of AML regulation and regulation aimed at countering the financing of terrorism (CFT) on cross-border bank flows, while profound, are concentrated in two types of countries: the poorest, and the small island countries that can be considered offshore centers.<sup>115</sup>

Collin, Cook, and Soramaki (2016) use actual bank-to-bank payment data to examine the quantitative relationship between AML regulations and cross-border transactions. They find that those countries that the Financial Action Task Force, the international group with a mandate for setting AML standards worldwide, has added to an internationally recognized list of high-risk countries—also known as the “graylisted” countries—experienced up to a 10 percent reduction in the number of payments received.<sup>116</sup> However, these authors also find no consistent effect of graylisting on cross-border trade flows or other flows. The study further reports that the large majority of graylisted countries are among the poorest in the world. Thus,

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115. In a number of EMDEs, to avoid being de-risked, banks have significantly reduced or fully terminated relationships with customers perceived as “high risk” by correspondent banks; in cases where these relationships were maintained, the cost of services increased to cover the increased risk and costs to the banks. These customers include SMEs, charitable organizations, and others.

116. For a broader review of the unintended consequences of AML policies for poor countries, see Lowery and Ramachandran (2015).

the observed sharp decline in cross-border bank lending to EMDEs, which in terms of magnitude is mostly attributable to middle-income countries (emerging markets), cannot be explained by AML concerns but instead must be due to other cyclical and structural factors, possibly including Basel III effects.

As shown in the table, the withdrawal of global banks from correspondent banking relationships, which can adversely affect cross-border flows including trade finance and remittances, has been concentrated in the Caribbean and in other small countries with small volumes of transactions, especially in Africa, Europe, Central Asia, and the Pacific islands.<sup>117</sup>

Based on IMF appraisals on the effects of the withdrawal from correspondent banking relationships, most countries’ financial systems have not been affected severely. In a few countries, such as Belize, however, the adverse impact has been reported to be systemic.

Although further research is needed to obtain definitive results, to the extent that Basel III regulations on global banks affect cross-border flows from them to low-income economies, some of the latter might find themselves doubly impacted. An unintended consequence is that the combination of international regulations designed to protect system stability (Basel III) with those aimed at ensuring system integrity (AML/CFT) could affect the poorest countries most, and those with a higher probability of being graylisted the most of all.

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117. Exceptions in terms of country (GDP) size are Saudi Arabia and the United Arab Emirates.

## The Withdrawal of Global Banks from Correspondent Banking Relationships (CBRs)—Assessment in IMF Staff Reports

The Impact of the Withdrawal of CBRs	
No significant impact/ moderate impact	The Bahamas, Barbados, Costa Rica, Cyprus, Grenada, Guatemala, St. Lucia, Tonga, El Salvador, Guyana, Jamaica, Kiribati, Kuwait, Lebanon, Morocco, Panama, Samoa, Saudi Arabia, Solomon Islands, Sri Lanka, St. Kitts and Nevis, St. Vincent and the Grenadines, and the United Arab Emirates.
Adverse impact	Belize, Iran, Liberia, and Sudan.
The Quantification of the Loss of Business in Respondent Banks	
The Bahamas	Six institutions, representing a small share of total about 19 percent of banking system assets, have recently lost CBRs.
Belize	Only 2 of the 10 domestic and international banks have CBRs with full banking services. The Central Bank of Belize lost three CBRs.
Liberia	All commercial banks have lost at least one CBR in the last 3 years, with the most affected losing about 78 percent of their CBR accounts (SIP).
Panama	The total number of CBRs remained stable at 463–464 between March 2015 and End-February 2016 (62 relationships were lost, but Panamanian banks managed to establish 63 new relationships).
Sudan	Sudan lost almost half of its CBRs between 2012 and 2015.

Source. Taken from IMF (2017b, 15). Reprinted with permission.



# Annex V.

## Basel III and Trade Finance

A variety of trade finance products offered by banks, both international and domestic, support the export and import activities of countries worldwide.<sup>118</sup> As the Committee on the Global Financial System (CGFS, 2014) has reported, however, there is no single comprehensive source of data on trade finance; indicators of this market's evolution must be collected from national sources and bank-level surveys and databases. For example, using data from 21 global banks collected by the International Chamber of Commerce trade register, the CGFS estimated that global banks provided about one-third of bank-intermediated global trade finance in 2011. Among emerging markets, Asian countries account for the largest share of usage of trade finance products.

The figure below, based on data from the US Federal Financial Institutions Examination Council, shows recent developments in US banks' cross-border trade finance exposure to EMDEs. As with US banks' total cross-border lending to EMDEs (see Figure 3 in the text), there has been a declining trend in cross-border trade finance in recent years. Although this decline started only in 2013 (following a recovery in the immediate postcrisis period), it came at a time when exports and imports in EMDEs were increasing, which makes it unlikely that the trend can be purely demand-side driven.<sup>119</sup> The decline affected both middle- and low-income EMDEs (see figure). According to the IIF (2017), European banks have also reduced their funding of trade finance to emerging markets, or at least their direct funding—they may still be playing an important role by taking on the risk of other financial intermediaries engaged in this activity.<sup>120</sup> Although

some emerging-market domestic banks have taken up at least some of the slack left by the global banks' withdrawal, the capacity of the former is less than that of the latter.<sup>121</sup>

Other evidence supports the hypothesis that supply-side factors might have played a role in the decline in trade finance: a 2017 survey by the Asian Development Bank, in which 515 banks from 100 countries and 1,336 firms from 103 countries participated, reports that recent years have seen a large and sustained level of unmet demand for trade finance. The report estimates that the global gap between supply and demand for trade finance was relatively stable in 2017, at about US\$1.5 trillion (compared with US\$1.6 trillion in 2016), with emerging markets, especially in Asia and the Pacific, facing the greatest shortfalls.<sup>122</sup>

Available data suggest that cross-border trade finance has not significantly recovered since 2017, despite an improvement in global trade volume (although the recent trade restrictions imposed by the United States and retaliation by its trading partners might reduce trade potential in the years to come). Indeed, based on IMF (2018b) data, the rate of growth of world trade volume (goods and services) increased from 2.3 percent in 2016 to 5.9 percent in 2017 and was forecast to reach 4.0 percent in 2018. For EMDEs, the rate of growth of export volumes more than doubled in the 2016–17 period, from 2.6 percent in 2016 to 7 percent in 2017, with a forecast of 6.0 percent for 2018. Expectations for a recovery of cross-border trade finance rest on further improvements in global trade and completion of the resolution of banking problems in the advanced economies, especially Europe. However, new regulatory

118. Interfirm credit between exporters and importers is an alternative means of funding trade activities.

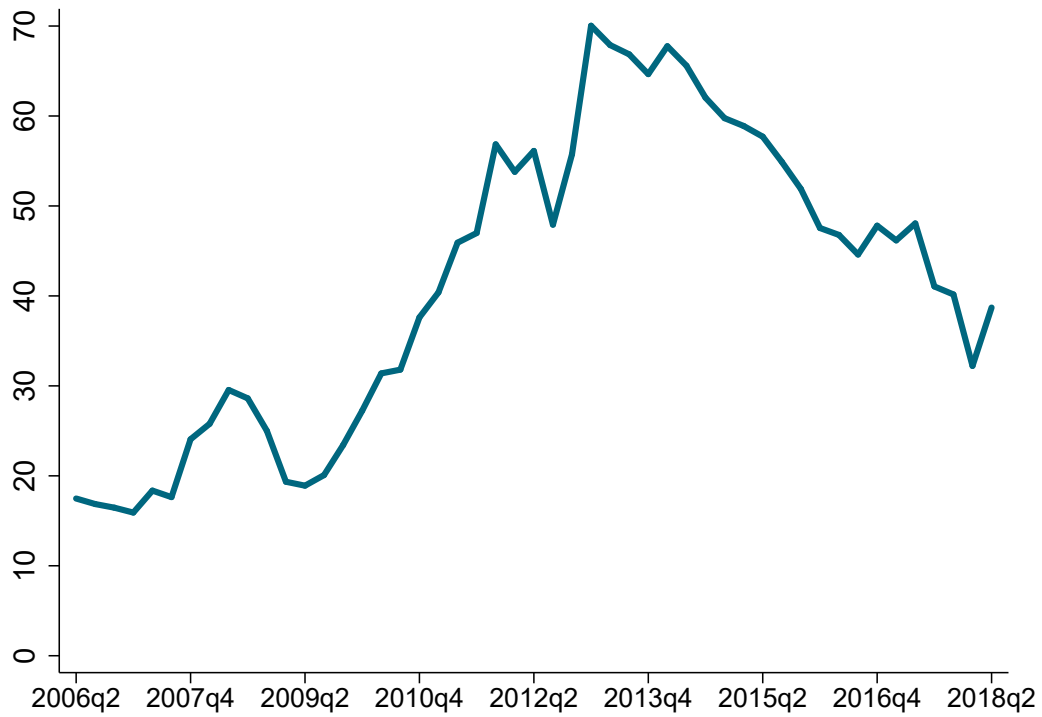
119. See WTO (2018).

120. As an example, European banks may have been taking on the risk of the African Export-Import Bank in financing trade.

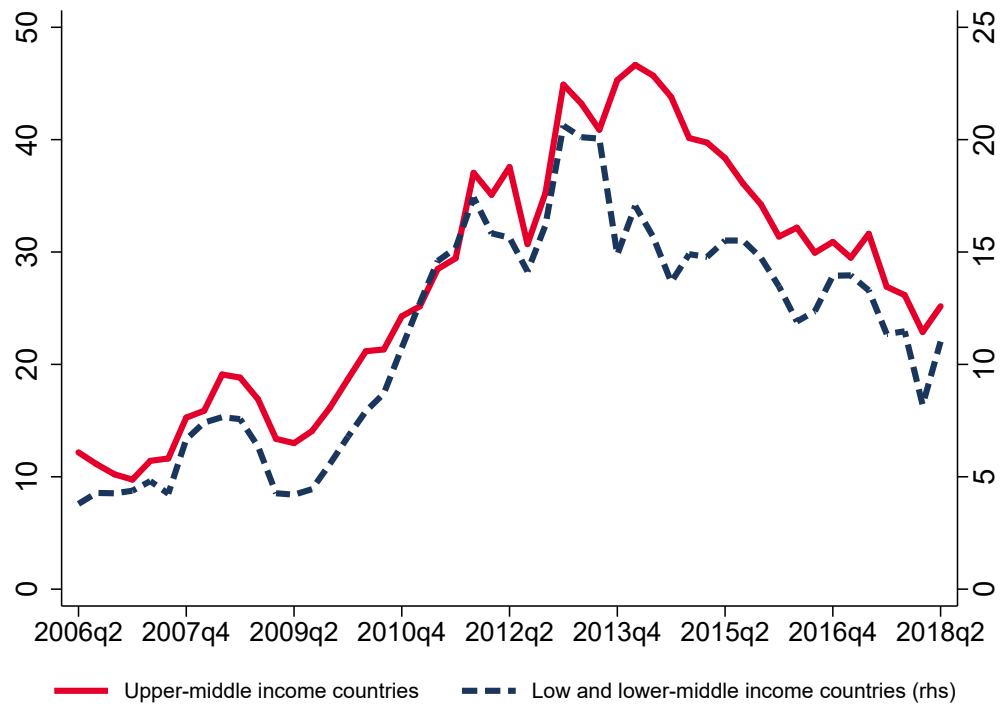
121. See IIF (2017).

122. See Di Caprio, Kim, and Beck (2017).

Total US Cross-Border Trade Finance to EMDEs (US\$ billions)



US Cross-Border Trade Finance to EMDEs by Income Category (US\$ billions)



Source: Authors' calculations based on FFIEC (2018).

restrictions, coming especially from “know your customer” requirements and from the recent finalization of the Basel III recommendations, might stand in the way of this recovery.<sup>123</sup>

To an important extent, based on consultations with multilateral organizations such as the World Trade Organization and industry participants, the Basel Committee has acknowledged the specific risk characteristics of the instruments used for trade finance and has recognized the importance of these instruments for low-income countries. Short-term letters of credit are one of the instruments most often used, accounting for about half of the total (CGFS, 2014). This instrument is highly collateralized and self-liquidating and shows a low default ratio.<sup>124</sup> For this reason, the BCBS (2011) report on the treatment of trade finance under the Basel III framework establishes lower capital requirements for trade finance instruments for banks using the standardized credit-risk assessment approach. For example, for purposes of calculating capital requirements for interbank exposures, Basel III waives the so-called *sovereign floor* for confirmed letters of credit, which are particularly important for low-income countries.<sup>125</sup> The sovereign floor mandates that a risk weight cannot be lower than that applicable to exposures to the sovereign of the country where the bank counterparty is incorporated. This requirement, which is applied to all other interbank exposures under the standardized approach, was waived in this case in recognition that it would imply a risk weight of 100 percent for confirming banks’ claims on counterparty banks located in low-income countries, which

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123. The ICC trade register (ICC Banking Commission, 2017) reports that around 70–80 percent of its survey respondents (25 trade finance and export finance banks) agreed or strongly agreed that AML and know-your-customer requirements and Basel III regulations are barriers to the provision of trade finance.

124. As recent examples in India have shown, however, there is a substantial risk of fraud, but this is mainly a tail risk that should be addressed with governance reforms rather than through prudential means.

125. As stated in BCBS (2011), “Confirmed letters of credit provide exporters with additional protection against any losses incurred from importers’ and issuing banks’ failure to meet their obligations of payments. A typical example is the export of goods to a low-income country which in almost all cases requires a confirmed letter of credit since the exporter generally will not rely only on the creditworthiness of the importer and its bank” (p. 4).

would adversely affect the trade financing capabilities of this group of countries.<sup>126</sup>

Despite progress in the regulatory treatment of trade finance under the standardized approach in the revised version of Basel III (and relative to Basel II), global banks caution about a potential adverse effect on trade credit arising from the newly introduced *aggregate output floor* in the finalized version of Basel III. As discussed in Section II, this floor limits the use of banks’ IRB models in the calculation of RWA. Specifically, total RWA estimated by banks’ internal models may not be lower than 72.5 percent of RWA calculated using the standardized approach. Moreover, under the revised Basel Accord, banks are no longer allowed to use the advanced IRB approach for interbank exposures. Currently, global banks do use their IRB models, rather than the standardized approach, to calculate capital requirements for trade finance. Thus, facing constraints in the use of their internal risk-sensitivity methodologies, global banks might face higher overall capital requirements derived from those activities, such as trade finance, where the standardized approach calls for more capital than what is needed under their internal models. This might reduce banks’ profitability from trade finance and discourage their activities in that business line. Regulators from Asian countries, the emerging-market region that uses trade finance the most, have also raised concerns about the impact of Basel III on trade finance. See, for example, the speech by Shirakawa (2018), vice commissioner for international affairs of the Japan Financial Services Agency.<sup>127</sup>

Regulators from EMDEs consider trade finance essential for development. Increased regulatory costs for

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126. Specifically, for interbank claims under the standardized approach, “the sovereign floor will not apply for short-term (maturity less than a year), self-liquidating, trade related contingent items that arise from the movement of goods” (BCBS, 2017a, p. 10).

127. In his statement, Shirakawa (2018) argued that “Basel III may also affect trade finance which supports Asian economies by facilitating international trade. Under Basel III, capital requirements for bank exposures will be increased by removal of both the A-IRB approach and a certain standardized approach based on the creditworthiness of sovereign of its incorporation. Since trade finance usually relies on other banks’ guarantee, these measures could in turn negatively affect trade finance in the Asian region.”

trade finance could actually decrease the resilience of EMDEs to external shocks, especially in the lowest-income countries. Because of its importance, EMDE authorities and their countries' private sectors are the most interested in helping to maintain the extremely low default rates observed for trade letters of credit. We therefore recommend that the BCBS keep open the discussion regarding capital requirements for

short-term, self-liquidating trade letters of credit. Moreover, in their evaluation of the impact of G20 regulatory reforms, it is important that the FSB and the BCBS take into consideration the combined impact of Basel III regulations and the new IFRS 9 accounting rules on trade finance. There is a danger that the combined effect of the reforms could be to discourage the supply of much-needed trade finance to EMDEs.

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# Biographies of Task Force Members

## Co-Chairs:

**Thorsten Beck** is professor of banking and finance at Cass Business School in London. He is also a research fellow of the Centre for Economic Policy Research and the CESifo. He was professor of economics from 2008 to 2014 at Tilburg University in the Netherlands and the founding chair of the European Banking Center from 2008 to 2013. Previously he worked in the research department of the World Bank and as a consultant for, among others, the European Central Bank, the Bank of England, the BIS, the IMF, the European Commission, and the German Development Corporation. His research, academic publications, and operational work have focused on the relationship between finance and economic development and the policies needed to build a sound and effective financial system. Recently, he has concentrated on access to financial services, including SME finance, as well as on the design of regulatory and bank resolution frameworks. Mr. Beck holds a Ph.D. in Economics from the University of Virginia and an M.A. from the University of Tübingen in Germany.

**Liliana Rojas-Suarez** is the director of the Latin America Initiative and a senior fellow at the Center for Global Development. She is also an adjunct faculty member and senior research scholar at the School of International and Public Affairs at Columbia University and the chair of the Latin American Committee on Macroeconomic and Financial Issues (CLAAF). From 1998 to 2000 she served as managing director and chief economist for Latin America at Deutsche Bank. Before that she was the principal advisor in the Office of the Chief Economist at the Inter-American Development Bank. Between 1984 and 1994 she held various positions at the IMF, most recently as deputy chief of the Capital Markets and Financial Studies Division. She has been a visiting advisor at the Bank for International

Settlements in Switzerland and the Bank of Spain, a nonresident fellow at the Organization for Economic Cooperation and Development in Paris, and a visiting fellow at the Peterson Institute for International Economics. She has also served as a professor at Anahuac University in Mexico and an advisor to PEMEX, Mexico's national petroleum company. In 2012 she was named Economist of the Year by the Lima Chamber of Commerce. Ms. Rojas-Suarez holds a Ph.D. in economics from the University of Western Ontario.

## Task Force Members:

**José De Gregorio** is the dean of the School of Economics and Business at the University of Chile. He was governor of the Central Bank of Chile (CBC) between 2007 and 2011 and before that served as vice governor and member of the CBC's Board. From March 2000 until June 2001, he served as a "tri-minister," acting as the minister of the combined portfolios of the Ministries of Economy, Mining, and Energy. Between 1997 and 2000 he was professor and head of postgraduate programs at the Center for Applied Economics at the University of Chile. He has also been a professor at the Pontificia Universidad Católica de Chile and a visiting professor at the Anderson School of Management, University of California, Los Angeles, and has taught at the Massachusetts Institute of Technology. He was an economist in the Research Department of the IMF in 1990 and 1994, and he has worked as a consultant and as a visiting researcher at various international organizations, including the IMF, the World Bank, the Inter-American Development Bank, and the United Nations, and to foreign companies. From 1983 to 1986 he was a researcher at the Corporación de Investigaciones Económicas para Latinoamérica. Mr. De Gregorio holds a Ph.D. in economics from the Massachusetts Institute of Technology.

**Maher Sheikh Hasan** is deputy governor of the Central Bank of Jordan and vice chairman of its Board of Directors. He is the chairman of the Jordan Loan Guarantee Corporation, vice chairman of the Jordan National Payment Council, vice chair of the National Committee of the Anti-Money Laundering and Counter Terrorist Financing Unit, board member of the Social Security Corporation, member of the Technical Committee for the Management of the General Public Debt at the Ministry of Finance, council member of the Ministry of Awqaf and Islamic Affairs, and member of the FSB Regional Consultative Group for the Middle East and North Africa, in addition to his board membership in the Jordan Payments and Clearing Company. Mr. Hasan holds a Ph.D. in economics and an M.S. in statistics from Washington State University.

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**Linah Kelebogile Mohohlo** was governor of the Bank of Botswana. Linah Kelebogile Mohohlo was governor of the Bank of Botswana for a period of 17 years to 2016, following a 23-year career with the bank during which she served in a number of operational and policy areas, including secretarial, human resource management, economic research, and reserves management. She has also worked for the IMF under the Special Appointee program and, in her capacity as governor of the IMF for Botswana, she has been a member of the International Monetary and Financial Committee, representing the Africa Group I Constituency. She also served on the Commission for Africa and the Lan- cet Commission on Investing in Health, and she has chaired the UN High-Level Panel on Recosting as well as the World Economic Forum on Africa. She is a member of the Africa Progress Panel and the Investment Committee of the UN Joint Staff Pension Fund. She is a recipient of a number of professional awards, among which is Botswana's highest public service award for

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**Andrew Powell** is the principal advisor in the Research Department of the Inter-American Development Bank. Through 1994 he dedicated himself to academic work in the United Kingdom as prize research fellow at Nuffield College, University of Oxford, and associate professor (lecturer) at the University of London and the University of Warwick. In 1995 he joined the Central Bank of Argentina, where he was named chief economist in 1996. He represented Argentina as a G20/G22 deputy and as member of three G22 working

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