

SEVEN

Aligning International Banking Regulation with the SDGs

LILIANA ROJAS-SUAREZ

Banks play a central role in both the payments system and the provision of funding for firms and corporations. This role is particularly important in emerging markets and developing economies (EMDEs), where alternative sources of financing are scarce owing to underdeveloped local capital markets. Furthermore, an extensive literature emphasizes the pivotal role of a well-functioning financial system in development and poverty reduction. In essence, sound banking systems are imperative for achieving the UN's Sustainable Development Goals (SDGs).

To ensure financial stability, banking regulation addresses sources of fragility in the banking system. These sources include moral hazard issues stemming from deposit insurance, which could incentivize banks to take excessive risks, and the potential for panics (i.e., bank runs) to emerge, leading to liquidity problems and ultimately solvency crises. While regulations may differ across countries, there are global standards established by the Basel Committee on Banking Supervision (BCBS), the international

body responsible for recommending best practices in banking regulations. Basel III, the current set of standards for banking regulation, was finalized in 2017, with full implementation set for 2028.¹

Basel III represents the BCBS's response to the severe banking crises that originated in advanced economies and manifested in the global financial crisis of 2007–2008.² The new accord recommends that large, internationally active banks adhere to its standards. Only countries that are members of the BCBS are bound to adopt the accord. This group of countries is largely formed by advanced economies, but it also includes some large emerging markets, such as Brazil, China, and Turkey.

Although not mandatory, a large number of EMDEs are either implementing or considering implementing the recommendations of Basel III because of the perceived benefits with respect to ensuring financial stability. Past banking crises in EMDEs have had devastating consequences on development, motivating countries to follow the standards.³ But countries also implement Basel III because adhering to these standards is considered a signal of good behavior, expected to positively influence the perception of creditworthiness by international investors and international credit rating agencies. Moreover, where implemented, the standards apply to all banks and not solely to the largest banks within the systems.

Assessments of the effectiveness of the Basel III regulatory framework recognize that it has contributed to the stability of banking systems worldwide. It is notable that despite the confluence of global shocks since the onset of the COVID-19 pandemic, EMDEs' banking systems have, with few exceptions, remained stable.⁴ However, the regulatory framework is not free of unintended consequences, some of which may adversely affect progress toward achieving the SDGs.⁵ This chapter deals with that issue but does not pretend to be exhaustive. While Basel III affects several SDGs, the chapter focuses on two: SDG 10 and SDG 8. Specifically, it argues that Basel III may (1) create incentives for banks to reduce financing

1. BIS (2022a).

2. Basel III was first introduced in 2010 and finalized in December 2017. See BIS (2011); BCBS (2010, 2017).

3. Beck and Rojas-Suarez (2019).

4. It is noteworthy that lack of compliance with the recommendations of Basel III was one of the major factors explaining the collapse of Silicon Valley Bank in the United States in 2023. See Gruenberg (2023).

5. See Beck and Rojas-Suarez (2019) for a comprehensive analysis of the unintended consequences of Basel III in EMDEs.

to small and medium-size enterprises (SMEs), thereby challenging the goal of SDG 10 to reduce inequality within countries, and (2) reduce the attractiveness of large international banks in financing infrastructure, thereby contravening SDG 8, on economic growth.

The rest of the chapter is organized as follows. The next section discusses how Basel III affects SMEs in EMDEs and offers recommendations to address identified issues. This is followed by a similar analysis of the impact of Basel III on infrastructure finance. The final section concludes.

Basel III and SDG 10: Dealing with the Financial Inclusion Issues of SMEs

The Problem

Capital requirements, aimed at helping banks absorb losses to reduce the likelihood of a bank failure, constitute a central component of Basel III. Specifically, the accord establishes that banks need to hold a minimum risk-based capital ratio of 8 percent:⁶

$$\text{Minimum capital requirement: } \frac{\text{Capital}}{\text{Risk-weighted assets}} = 8\%,$$

where every type of asset held by banks is assigned a weight according to its riskiness. To calculate minimum capital requirements, the value of the asset is multiplied by the relevant risk weight. The riskier the asset, the more capital banks need to hold.

Who sets the risk weights? Under certain stringent conditions, banks can use their internal models to estimate risk-weighted assets—the internal ratings-based (IRB) approach.⁷ However, the simplest method, the standardized approach, in which banks' risk weights are specified by Basel III, is the one followed by most EMDEs.⁸

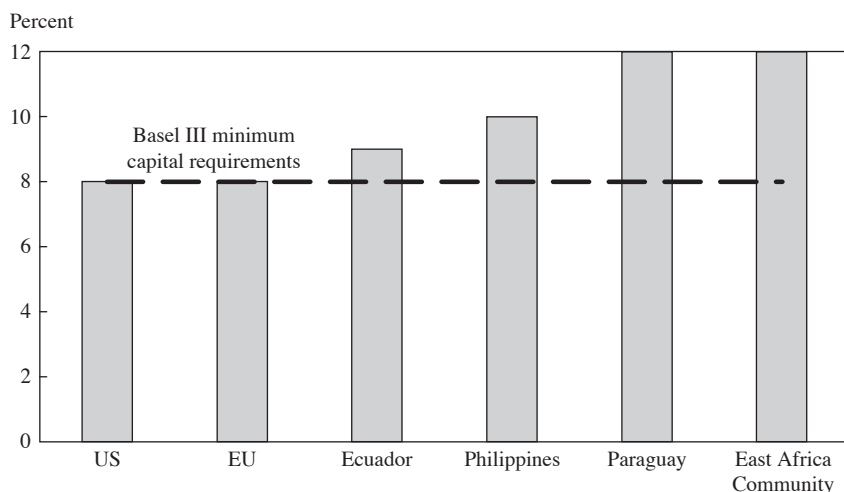
The implementation of Basel III in EMDEs has strongly supported banking sector stability in these countries. Nonetheless, there are some unintended consequences, one of which relates to the effects on credit to SMEs. There are two issues.

6. BCBS (2017).

7. Ibid.

8. Beck and Rojas-Suarez (2019).

FIGURE 7.1. Minimum Capital Requirements Adopted in Selected Countries



Source: Author review of National Reports.

First, in contrast to advanced economies, many regulators in EMDEs have established minimum capital requirements several percentage points above those recommended by Basel III, a practice known as gold-plating (figure 7.1). This is done to reflect the higher overall risk in their economies. The idea is that showing higher capital ratios will provide assurances to local and international investors as to the strength of their financial systems. The problem is that although gold-plating doesn't differentiate between specific risks, it might affect the composition of banks' lending, potentially leading banks to concentrate their exposure in the sectors considered less risky by the standards, to the detriment of SMEs. Insofar as bank lending is the most important external source of SME financing in EMDEs, gold-plating could exacerbate these firms' significant funding constraints, especially in the current international financial environment where interest rates are expected to remain high for a prolonged period.⁹

9. According to the World Bank's Enterprise Surveys, almost 50 percent of small firms report being fully or partially credit constrained, twice the ratio of large firms that report facing credit constraints. See the results of "Biggest Obstacle" survey at <https://www.enterprisesurveys.org/en/data/exploretopics/biggest-obstacle>.

A second concern pertains to the credit risk weights attached to banks' exposures to SMEs. In the standardized approach, Basel III assigns a credit risk weight of 85 percent to SMEs (75 percent if considered retail). This weight can be lower only if the SME has a rating of A– or above; but, of course, the vast majority of SMEs in EMDEs are not rated. Thus there is little differentiation between SMEs when attaching risk weights, with insufficient consideration of firms' history of repayments or as potential subjects of credit. In contrast, the large corporations that are usually rated can potentially benefit from lower risk weights. For example, a corporate bond rated A– would enjoy a risk weight of 50 percent and a corporate bond rated AA– would benefit from a 20 percent risk weight.¹⁰

An important concern in this context is that the implementation of Basel III in EMDEs could generate a trade-off between financial stability and financial inclusion. While more empirical analysis is needed, evidence suggests that SMEs on the fringes of financial inclusion were the most affected by the introduction of Basel III in EMDEs.¹¹ That is, Basel III may have a negative effect on financial inclusion, a major challenge in many EMDEs.¹²

What to Do?

The heart of the problems outlined above lies in the fact that the Basel standards (Basel III and its predecessor, Basel II) do not calibrate risks appropriately for EMDEs, as these risk weights have mostly been calibrated for advanced economies. Appropriate risk calibration may reduce the trade-off between financial stability and financial inclusion significantly. In this regard, there are some feasible actions for policymakers, both at the country level and within the BCBS.

RECOMMENDATION FOR POLICYMAKERS. The determination of risk weights should be a process driven by data. Rather than gold-plating, banking regulators in EMDEs should maximize the use of available data in their countries to improve the calibration of risk weights. Credit registries provide a

10. BCBS (2017).

11. Based on firm-level data for a sample of EMDEs, the analysis by Fisera, Horvath, and Melecki (2019) shows that SMEs that had a bank account but not a credit loan before the implementation of Basel III could have been the ones most adversely affected by the introduction of the accord.

12. There is also the issue that different versions of the Basel standards have changed the risk weights attached to SMEs, creating regulatory uncertainty.

wealth of information, including loan-level data covering practically every loan in the financial system. Utilizing these databases could allow regulators to determine risk weights for credit exposures that better reflect the particular risk characteristics in their economies than Basel III risk weights. Credit registries and/or credit bureaus operate in many EMDEs, making this a viable alternative for a large number of countries.¹³

In countries where loan-level data are not available, improving data collection and implementing reforms to promote the establishment of credit registries should be pursued as a medium-term goal. However, country-specific calibration of credit risk weights may not be necessary. Establishing regional or subregional agreements among countries with similar financial structures and risk characteristics could be sufficient. This approach would not only help improve credit risk weights in countries without adequate mechanisms for data collection, it would also allow for relevant country comparisons.

An important clarification is that utilizing data from credit registries does not imply that risk weights will decrease for SMEs or any other risk category. Rather, if the distortions created by gold-plating were eliminated and credit risk weights were better aligned with the risk structure of the economy, the implementation of (adjusted) Basel III recommendations would be more effective in containing excessive risk-taking behavior and ensuring financial stability without unduly penalizing critical sectors such as SMEs.

What if, under the alternative calibration, risk weights for SMEs should increase? That would imply that additional government policies, such as credit guarantees or other risk-mitigating schemes, were needed to support SMEs and other socially desirable sectors. Appropriate calibration of risk weights combined with additional policies would minimize the trade-off between financial stability and financial inclusion.

RECOMMENDATIONS FOR THE BCBS. The committee should support country/regional calibration of credit risk weights based on information from public credit registries and credit bureaus with extensive loan-level databases. It would be important for the committee to recognize that there is large variation in SMEs' track records on loan repayments. Having just a couple

13. See World Bank, *Public Credit Registry Coverage (% of Adults)—World* (database, n.d.), at <https://data.worldbank.org/indicator/IC.CRD.PUBL.ZS?locations=1W>.

of buckets for attaching risk weights for SMEs does not contribute to financial stability and hurts financial inclusion. Since the vast majority of SMEs lack ratings from external credit rating agencies, credit registries can provide more granularity for assessing SMEs' credit risk.

Being able to count on support from the BCBS is essential for EMDEs. To improve their integration into the international financial system, these countries are making efforts to comply with international standards and regulations. Thus it is hard for EMDEs, especially the least developed, to be perceived as unilaterally diverging from the standards. The seal of approval from the BCBS is therefore a must.

The recommendations in this chapter are consistent with the principle of proportionality advocated by the BCBS, whereby countries should adopt and adapt Basel III according to their circumstances. For example, the committee recommends that countries should delay implementation of Basel III until they have an adequate supervisory capacity in place. Likewise, the committee is flexible with the risk weight of some instruments, such as government paper. Notwithstanding, it remains silent regarding calibration of credit risk weights in the standardized approach using alternative methods like the one advanced here. A plausible reason is that an alternative method could give rise to a plethora of credit risk weights schemes that could defy the concept of standardization advocated by the committee. This issue, however, could be resolved by calibrating risk weights on a regional or subregional basis, as proposed above.

Basel III and SDG 8: Supporting Infrastructure Finance in EMDEs

The Problem

Infrastructure is widely acknowledged as a cornerstone of economic growth, yet EMDEs suffer from a large infrastructure deficit.¹⁴ Moreover, data from the Global Infrastructure Hub (2023b) reveal a concerning trend: while private investment in infrastructure has been increasing in advanced economies, it has mostly stagnated in EMDEs in recent years.

The landscape of infrastructure funding has also evolved. Although loans, particularly from international banks, remain the primary funding

14. The global infrastructure investment cumulative gap was estimated to reach \$15 trillion between 2021 and 2040 (G20, 2021).

source, their importance has decreased globally as banks have shown less dynamism in this area. In advanced economies, bond finance, through the issuance of long-maturity instruments, has compensated for the sluggishness in bank funding. This, however, has not been the case in EMDEs, resulting in an overall significant decline in funding for infrastructure projects.

While not the only factors, some Basel III recommendations have implications for bank funding of infrastructure, notably liquidity requirements and the so-called output floor limiting banks' use of their internal risk assessment models in the computation of capital requirements.

THE NEW LIQUIDITY REQUIREMENTS. Liquidity requirements were incorporated into the Basel III framework in acknowledgment of the inadequacy of existing regulation during the global financial crisis to prevent the substantial liquidity problems faced by banks in advanced economies. A key issue was the large proportion of banks' long-term assets financed with short-term funding (wholesale funding), which proved highly volatile during periods of severe bank stress. In response, the BCBS introduced the Net Stable Funding Ratio (NSFR) as part of Basel III's liquidity recommendations.¹⁵ The NSFR aims to enhance the alignment between the maturities of banks' assets and liabilities.¹⁶ Thus, assets with a maturity of more than a year need to be matched with funding with a maturity of more than a year.

While not requiring exact matching, the regulation induces banks to align longer-term assets, such as infrastructure finance, with correspondingly longer-term funding, which tends to be more expensive. Thus, by increasing the cost of infrastructure finance, the NSFR creates incentives for banks to reduce their exposure to such loans, or even abandon them, in favor of shorter-term assets or to shorten the maturity of their infrastructure loans. Moreover, the regulation could have a disproportionate impact on those domestic banks in EMDEs that lack easy access to medium- and long-term funding, thus further constraining the availability of infrastructure finance sources.¹⁷

15. In addition to the NSFR, Basel III includes the liquidity coverage ratio (LCR) requiring banks to hold sufficient liquid assets to sustain them for thirty days during times of stress.

16. BIS (2014).

17. See Garcia-Kilroy and Rudolph (2017) for additional discussion of these issues.

THE OUTPUT FLOOR. A second regulatory addition in Basel III that affects banks' decisions to finance infrastructure projects is the imposition of constraints on the use of IRB models.¹⁸ The BCBS introduced the output floor in Basel III in response to evidence of significant disparities in the estimation of risk-weighted assets among banks holding similar portfolios and operating in comparable financial settings. This regulatory addition limits banks' use of internal models by stipulating that their calculation of risk-weighted assets using IRB models cannot, in the aggregate, be less than 72.5 percent of the estimate using the standardized approach.¹⁹

Increased use of the standardized approach poses challenges for infrastructure finance. Most important, the Basel framework does not recognize infrastructure finance as a distinct asset class. Therefore the standardized approach does not provide specific risk weights for calculating capital requirements pertaining to infrastructure finance. Instead, the risk weights typically used for infrastructure loans reflect the credit risk of the borrowing entity. The problem is that in EMDEs, the project finance entity involved is often a new entity especially created for a particular infrastructure project, lacking a credit history and therefore not rated by credit rating agencies.²⁰ In such cases, the standardized approach assigns very high risk weights to banks' exposures to project finance: 130 percent during the construction phase and 100 percent during the operational phase. The higher weights during the construction phase are intended to account for the greater risk associated with the early stages of the project (e.g., because of lack of collateralizable assets).²¹

However, data from Moody's analyzed by the Global Infrastructure Hub (2023b) show that the actual default rates for infrastructure debt have been consistently lower than for noninfrastructure debt. Also, default rates for infrastructure debt converge over time to those of investment-grade corporate debt (although with differences across geographic regions).²² Because of the nature of their operations and the diversification

18. In those jurisdictions where use of the IRB approach is allowed (most advanced economies and some emerging markets), large banks are the usual users of the approach.

19. BCBS (2017).

20. These project finance entities are created to facilitate the collaboration of the public and private sector to develop infrastructure projects.

21. BCBS (2017). In the infrequent cases (at least in EMDEs) in which the project finance entity uses external ratings that are allowed for the computation of regulatory capital, project finance can have the same weights as corporate finance.

22. Global Infrastructure Hub (2023b).

FIGURE 7.2. Infrastructure and Other Project Finance Debt Performance by Region, 1983–2018: Ultimate Recovery Rate (Percent)

Region	Infrastructure Loans (83%)	All Projects Finance (78%)
Africa	100	67
Middle East	100	82
Eastern Europe	96	98
Asia	87	78
Western Europe	82	77
North America	82	79
Oceania	80	79
Latin America	76	77

Source: Kelhoffer (2020).

of their portfolios, banks can assume the higher risk at the beginning of the infrastructure projects—a feat that is not possible for most other financial institutions. Without banks’ participation, it is hard to envision significant reductions in EMDEs’ large infrastructure gap.

Moreover, data from Moody’s, presented in figure 7.2, show that ultimate recovery rates—namely, funds recovered from an outstanding loan following a default—are higher for infrastructure debt than for noninfrastructure debt in most regions.²³

In a nutshell, the existing Basel III framework of risk weights is not suitable for infrastructure finance owing to its unique characteristics. The risk profile of corporate and general project finance does not align with the actual risks associated with infrastructure financing. Facing higher

23. Kelhoffer (2020).

capital requirements, banks have an incentive to shift away from infrastructure finance and toward less expensive assets, such as projects by large, highly rated corporates.²⁴

What to Do?

The effect of Basel III on bank-based infrastructure finance is a significant concern for many EMDEs because of the limited availability of alternative market-based funding sources and the substantial infrastructure gap. Recommendations for addressing this issue align with those advanced for improving SMEs' finance, focusing on better reflecting banks' risks in countries' regulatory framework. Each recommendation relates to specific concerns.

ADJUST THE NSFR. Ideally, the NSFR could be adjusted. Rather than concentrating on maturity mismatches that penalize long-term bank assets, the NSFR could directly constrain banks' reliance on volatile short-term sources of funding; after all, the problem identified by the BCBS was the rapid loss of liquidity in wholesale funding. Similarly, the output floor could be modified to allow banks to leverage their expertise in assessing the risk characteristics of infrastructure lending. Enhanced supervision of banks' use of internal models could also mitigate the problem of inconsistent use of these models.

However, amending Basel III regulations on liquidity requirements and the output floor would prove exceedingly challenging. There is no appetite for further modifications to Basel III. Reaching agreement on the latest accord took years of negotiations and numerous rounds of deliberations. Undoubtedly, on an overall basis, Basel III represents a significant improvement in regulatory standards compared to its predecessors, but it is important to recognize that it required the upheaval of a global financial crisis to galvanize consensus for reform.

What about improving and enhancing the utilization of credit-risk mitigation instruments, such as guarantees offered by the World Bank and multilateral development banks (MDBs)? While Basel III allows for the

24. Banks especially move toward corporate assets with shorter-term maturities to reduce the liquidity constraint imposed by the NSFR ratio, as discussed above.

Although the BCBS has set January 1, 2028, as the deadline for compliance with the output floor (BCBS, n.d.), banks do react to expected changes in regulation by adjusting their portfolio in anticipation of the changes.

reduction of capital charges through the use of such instruments,²⁵ it requires compliance with the *legal certainty* condition to qualify for these reductions. This condition demands that all legal documentation be binding for all parties involved, legally enforceable in all relevant jurisdictions, and continuously upheld. However, these requirements are extremely hard to meet in infrastructure finance owing to the intricate nature of contracts, where legal obligations are defined for various categories of performance outcomes and risk categories.²⁶ For instance, although governments and multilateral development banks are willing to provide guarantees for political risks, these risk-specific guarantees often fail to meet Basel III's legal certainty conditions, thereby not resulting in lower capital requirements. Efforts by the private sector to develop market solutions compliant with regulatory requirements have begun but are still in early stages and require substantial cooperation between governments and the private sector. This collaboration is necessary but will likely take considerable time to fully materialize.

ESTABLISH INFRASTRUCTURE AS AN ASSET CLASS. In this context, intensifying efforts to establish infrastructure as an asset class is the correct approach for at least two important reasons. First, it would facilitate the participation of institutional investors in the financing of infrastructure projects since these investors typically prefer standardized assets. The mobilization of private savings managed by institutional investors for infrastructure financing has been a goal of the G20 since 2017, when the Argentinian presidency proposed a "Roadmap to Infrastructure as an Asset Class"²⁷; after all, by 2023, total assets under management by institutional investors had reached close to \$100 trillion. However, as discussed above, because of the complex nature of infrastructure projects, institutional investors can complement but not substitute for the role of banks, which are pivotal in structuring and in financing the initial stages of such projects.

Second, establishing infrastructure as an asset class would facilitate an amendment to Basel III without significantly affecting the overall

25. BCBS (2023), paragraph 22.3, even states: "No transaction in which credit-risk mitigation (CRM) techniques are used shall receive a higher capital requirement than an otherwise identical transaction where such techniques are not used."

26. See Global Infrastructure Hub (2023a).

27. G20 (2018).

framework, thereby minimizing controversy. Designating infrastructure as a clearly distinguishable asset class would naturally warrant the inclusion of an additional risk category in Basel III's capital requirements, without necessitating a reopening of discussions on the entire framework.

What is needed to establish infrastructure as an asset class? The most important requirements are standardization of key project characteristics and collection of comprehensive data on the characteristics and performance of infrastructure projects globally.

Standardization is needed in various aspects of infrastructure development, including greater standardization of contracts and required documents in the bidding and procurement phases of projects, as well as standardization of financial funding contracts involving similar analyses of cash flows and risks. This would enhance comparability between projects and facilitate the issuance of securities backed by infrastructure projects. Unfortunately, progress in this area has been slow, and a major push is needed. The G20 has established an annual G20 Infrastructure Working Group to propose recommendations. An important recommendation put forth in 2023 is the establishment of consistent and comparable taxonomies that include infrastructure definitions and classifications.²⁸ Although explicitly defining the type of assets considered to be infrastructure may seem basic and straightforward, challenges arise because of the evolving infrastructure landscape with the emergence of new forms of infrastructure over time. Examples include nontraditional types of infrastructure such as digital infrastructure or circular infrastructure (e.g., fuel derived from waste).

Detailed data are indispensable for investors' assessments of the expected risk-return profiles of projects. Significant strides in data collection have been made since the establishment of the G20 Global Infrastructure Hub, but more efforts are needed to fill large information gaps in many countries. Importantly, the lack of a clear taxonomy of infrastructure impedes adequate collection of data by national authorities. Moreover, enhancing transparency by publicly sharing country-level and project-level data on defaults and recovery rates from loans provided by multilateral development banks for infrastructure projects could significantly contribute to supporting investors' risk assessments. Presently, these data are housed in

28. G20 (2024).

the Global Emerging Markets (GEMs) Risk Database,²⁹ but only a report with summary statistics is available, despite repeated calls for open access to this information.³⁰ Promptly resolving standardization issues and closing data gaps requires a clear timeline for actions and procedures to achieve well-specified goals and the involvement of multilateral organizations to support necessary countries' reforms in these areas. It would be advisable to consider empowering an institution like the World Bank to lead this task.

Concluding Remarks

Basel III has undeniably improved banking regulation and contributed to financial stability worldwide. However, implementation of the framework has not been free of unintended consequences, some of which may potentially constrain progress toward achieving several SDGs. This chapter has highlighted how Basel III may discourage bank lending to SMEs (impacting SDG 10) and hinder banks' pivotal role in infrastructure finance (impacting SDG 8). While reopening discussions on the accord would be challenging, a significant part of addressing these issues lies in implementing initiatives that focus precisely on Basel III's core objective: accurate risk assessment.³¹

For SMEs, calibrating risk weights for the calculation of capital requirements using the large databases on loan performance collected by local credit registries offers a data-driven approach. This would allow EMDE regulators to tailor risk assessments to their economy's specific characteristics rather than relying solely on Basel III risk weights, which have largely been calibrated for advanced economies. Support from the BCBS is essential in realizing this recommendation.

Similarly, maximizing data usage is vital for assessing the unique risk profiles of infrastructure projects, which differ significantly from those of

29. Initially established in 2009 by the European Investment Bank (EIB) and the International Finance Corporation (IFC), GEMs has since grown to encompass twenty-five MDBs and finance institutions. See the website at <https://www.gemsriskdatabase.org/>.

30. See Mathiasen (2023) for a review of the issues involved in the publication of GEMs databases.

31. The optimal solution would imply changes in the regulatory framework. But there is reform fatigue. Although the Basel III framework was first published in 2010, more than seven years elapsed before it was finalized, after protracted and difficult negotiations among regulators from major advanced economies.

corporate and other project finance endeavors. This underscores the importance of establishing infrastructure as an asset class with its own specific risk categories for calculating capital requirements. Additionally, it necessitates the development of market solutions that allow credit risk mitigation instruments, such as guarantees from MDBs, to result in reductions of capital requirements.

The path to implementing these recommendations might be long and challenging, but it is achievable. Greater involvement from key multilateral organizations, with the World Bank taking a larger role in spearheading pivotal initiatives, such as the establishment of infrastructure as an asset class, could help accelerate progress. It is crucial to emphasize that these solutions hold the potential to ensure financial stability while fostering inclusive growth.

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