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Should National Development Banks be Subject to Basel III?

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ABSTRACT

We address the question: What are the potential impacts of Basel III capital framework for National Development Banks (NDBs) upon their ability to fulfil their developmental mandate? We compare three large NDBs' experiences with Basel III implementation: Brazilian Development Bank, China Development Bank and Germany's KfW. We find that the biggest constraint from Basel III comes less from its levels of comprehensiveness and complexity and more from tightening the levels of capital requirements and demanding better capital quality. The disincentive to the use of internal models and changes in the method for the calculation of operational risks may result in a substantial increase in required capital. Meanwhile, the new large exposure rule may dilute the banks' focus on large, infrastructure projects; the high-risk weights for exposures to project finance and equity may hinder NDBs from using these financing modalities extensively to support large and complex projects and activities that involve innovation financing.

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1. Introduction

The literature and policy analysis have addressed the possible impacts of the Basel Capital Accords on banks and their ability to provide development finance, especially in developing countries. However, limited systematic work has been undertaken on the potential impacts of Basel standards on National Development Banks (NDBs). This paper aims to fill in this research gap.

NDBs are different from commercial banks, in terms of funding, mandates and operational modalities. Given that, this paper focuses on the potential impacts of Basel III capital framework for large non-retail-deposit taking NDBs regarding their ability to fulfil their developmental mandates. Typically, large NDBs seeking to meet developmental mandates undertake concerted action that includes financing of large and complex projects, which are often long term, and supporting innovation, which, by its nature, involves above-average risks but also potentially very large developmental payoffs. These characteristics place them in a strong position to support the Sustainable Development Goals (SDGs) and provide climate finance — while setting them clearly apart from

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other profit-driven private banks and financial institutions. In addition, they undertake countercyclical actions during downturns and crises to protect incomes, jobs and the productive capacity for the next phase of economic expansion. Thus, Under Basel III, key standards to be considered for analysis are those that may constrain banks' ability to provide long-term finance, promote sustainability and operate countercyclically.

If compliance with certain Basel III standards can have an adverse impact on NDBs, the questions then are: Do these banks deserve special treatment? What can national regulators do to adapt Basel standards in order to reduce possible impacts? There is a substantial strand of the Basel literature that focuses on the political economy of the implementation of Basel standards, both in developed and developing countries.¹ This literature takes as a backdrop the fact that Basel standards have been designed by the Basel Committee on Banking Supervision, whose membership is dominated by developed countries and therefore with a focus on the characteristics of their own financial sectors. With this in mind, it argues that the decision-making process concerning their adoption across countries is both complex and political, with outcomes that can be quite varied. Indeed, recent empirical research covering over a hundred developing countries provides evidence that there is wide variation in how these countries are adopting Basel standards. That is, both regulatory convergence and divergence are found among these countries (Hohl et al. 2018). Several factors are driving countries towards regulatory convergence. These include desire to attract foreign capital, reputational concerns and peer pressure. Meanwhile, many other factors drive countries towards divergence instead. These latter include complexity of standards, constrained resources for effective implementation, desirability to develop a domestic financial sector that supports rapid development and domestic interest-group resistance to convergence (Jones 2020; Walter 2008).

NDBs are a particular sub-set category of banks. For them, the discussion that is relevant is not regulatory convergence or divergence in relation to standards designed internationally. Rather, what matters for these banks is compliance, or not, with the set of rules adopted by country regulators at the national level. That is, once international standards are incorporated in one form or another into a national financial regulatory framework, national regulators enjoy discretion to decide whether, or not, NDBs should comply with Basel standards and to what extent.

In related research, we conducted a survey among 50 NDBs to assess compliance with Basel III. For the purpose of NDB selection, the survey took into consideration the income level of their countries, asset sizes, and mandate representation. Of all the banks included in the survey, nearly 50 per cent have answered the questions. Among 24 banks, 16 banks explicitly acknowledge that they are subject to the same regulatory rules as commercial banks are in their jurisdictions and that these rules are very closely aligned with the Basel Accord. This means that, in that sample, about two-thirds of the NDBs are subject to Basel Accord. In addition, the three case studies undertaken in this paper shows that the NDBs analysed are subject to Basel standards. These results indicate that the concern raised by this paper, on possible Basel III impacts on NDBs, is not hypothetical but real instead. Although it is beyond the scope of this paper to examine why most national regulators decide to demand their NDBs to comply with Basel III, this issue is briefly discussed in the case study section of the paper and in conclusions. It will be

¹See, inter alia, Jones (2020), Jones and Zatz (2017), Knaack (2017), Mosley (2010), Walter (2008).

argued that, in the process of adopting Basel standards for NDBs, little consultation between national regulators and NDBs has taken place.

The paper's focus is on mapping possible Basel III impacts. This topic choice is not necessarily a position against financial regulation for this category of banks. Like commercial and investment banks, large NDBs have the potential to create systemic risks (directly if they collect cash deposits and indirectly, if they do not) and generate credit crises, with significant economic and social impacts. The point is under what conditions NDBs deserve special treatment and how to grant such special treatment — through ad hoc waivers, or a tailored regulatory framework? Mapping possible impacts is important to inform regulators on how best to tailor regulation for this category of banks. Although Basel is not compulsory and national decision-makers have ample discretion, a wholesale Basel adoption could have sizeable real social and economic costs. These costs could take the form of less rapid growth and structural transformation, in case NDBs do not invest as much as they potentially could in transformative-inducing projects. The social impacts would be particularly large if the result is less investments in social infrastructures, which are so much needed to address the many SDGs and targets. In addition, there are the environmental and sustainability costs, if NDBs are deterred in their expected role in the coming years as major financing vehicles for innovation and the fostering of the green economy.

The remainder of this paper has five sections, besides this introduction. Section Two traces the theoretical underpinnings of banking regulation, which culminated in Basel III standards. Section Three examines what key characteristics make NDBs different, warranting regulatory divergence. Section Four provides an analytical discussion on how specific Basel III standards affect the ability of NDBs to fulfil their missions. Section Five explores the variation of Basel adoption across selected NDBs, drawing on indepth case studies. Three case studies are conducted for the following NDBs: the Brazilian Development Bank- BNDES, China Development Bank (CDB) and Germany's KfW.² This selection implies that the paper focuses on large non-retail-deposit taking general purpose NDBs. Section Six concludes.

2. The Need for Regulating Financial Institutions

From the 1930s to the 1970s, having the US as a pioneer, prudential financial regulation focused on banks aimed at avoiding crises, with national supervision rules and special attention to liquidity risk (Carvalho 2003; Komai and Richardson 2011). This framework began to gradually change in the 1970s, a process that gained momentum from the 1980s onwards. It was in this context that the so-called Basel Capital Accords emerged and whose first milestone dates from 1988.³ The main argument for justifying a change from national to international regulation was that, due to the lack of harmonized financial regulation across national jurisdictions, many internationally active banks were practicing regulatory arbitrage to gain a competitive advantage over other banks. The Basel framework aimed at creating a level playing field for these banks.⁴

²BNDES stands for *Banco Nacional de Desenvolvimento Econômico e Social* (The Brazilian Development Bank); CDB for 国家开发银行 (China Development Bank); and KfW for *Kreditanstalt für Wiederaufbau* (Credit Institute for Reconstruction) ³BCBS (1988).

⁴See, inter alia, King and Tarbert (2011).

Basel I proposed capital requirement standards to deal with credit risk and was supposed to apply only to internationally active banks. Like the previous regulatory framework, Basel I, therefore, focused on banks and maintained the prudential and tutelary nature of traditional financial regulation. Unlike the previous framework, however, liquidity risk controls, that were at the core of the 1930s reforms, were considered less important, since the view was that best risk management practices could avoid it (Kobrak and Troege 2015).

The development of the Basel standards since then reflects the incorporation of both external and internal criticisms.⁵ As a result, the regulatory framework added capital requirements to face other risks: market risk and operational risk. In addition to the minimum capital requirement for these three risks (Pillar I), Basel II also established supervisory principles (Pillar II, whereby monetary national authorities can ask for complementary capital requirements) and market discipline (Pillar III).

Since Basel III, in addition to micro-prudential requirements, elements of macroprudential regulation have been incorporated into the regulatory framework. The attention to liquidity risk returned to the core of regulation and there was a recognition of the procyclical nature of credit markets. To address this type of procyclicality, additional capital cushions have been incorporated. Higher capital requirements for internationally active banks were also introduced. Finally, greater control over derivatives, back-testing, greater robustness in stress tests, as well as new capital requirements for counterpart risk and incremental risk have been proposed in response to the crisis.

From a theoretical perspective, prudential financial regulation is justified, ultimately, to address systemic risk⁶ In its traditional form, systemic risk is related to three characteristics of the banking system: (a) the existence of fractional reserves, (b) the existence of interconnections between banks, leading to the problem of contagion and (c) the fact that banks are part of the national system of payments, which causes the financial crisis to spread throughout the economy. However, the concept of systemic risk, as well as financial regulation itself, has also evolved over time. Any event whose magnitude is significant is now considered 'systemic' — for example, if defaulted loans reach at least 10 per cent of total assets, or the cost of saving institutions reaches at least 2 per cent of GDP (Barth et al. 2006, p. 213; cited in Carvalho 2003, p. 10).

There are two main lines of justification for financial regulation: the approach to market failures and the Keynes-Schumpeter-Minsky approach.⁷

According to the market failure approach,⁸ information on the solvency of financial institutions is a 'public good'. As such, the government must ensure its provision, imposing the disclosure of information by financial institutions. Stiglitz (1993) argues that financial markets are especially susceptible to sub-optimal outcomes as a result of

⁵External criticisms include tendency for standards to reinforce the pro-cyclical character of the financial system (especially before Basel III); risk of regulatory arbitrage between banks and other financial institutions; tendency to reinforce the portfolio bias towards government bonds (instead of loans); and tendency to reinforce bank concentration (e.g., Gottschalk 2010). Internal criticisms refer to model improvements, and improvements especially on the treatment of derivatives and market risk.

⁶For a discussion of the potential costs of financial regulation see, for example, Elliott, Salloy, and Santos (2012), who provide empirical estimates of Basel III costs.

⁷There are, in addition, the concerns with moral hazard as well as the emergence of too-big-to-fail dilemmas, as reasons for financial regulation.

⁸For a discussion of market failures in financial markets, see Stiglitz (1993, 1998).

information asymmetry. By monitoring banks, and requiring transparency on the data of financial institutions, governments can reduce the probability of insolvency of these institutions. But monitoring is not enough. Besides transparency, the government can contribute by imposing more efficient management of risks (risk-bearing) by banks, limiting opportunistic behaviour.⁹

A very different alternative for giving support to financial regulation is the one that emerges from a Keyenesian/Schumpeterian/Minskyan approach, KSM hereafter. According to this theoretical perspective, 'market failures' may exist, but they are not the most important problem to address. Unlike the market failure approach, public intervention in financial markets is called for as a rule and not as an exception. The concept of allocative efficiency, adopted in addressing market failures, is seen as poorly suited to address the problem of development finance and financial fragility. According to the KSM approach,¹⁰ government intervention in financial markets is crucial, because they recognize financial markets' structural problems — and not only 'failures'. In short, the objectives of the intervention are: (1) to contain systemic risk; (2) to act in a counter-cyclical manner; and (3) to foster growth/development.

The first objective demands prudential regulation of the banking system, although the systemic risk is not necessarily entirely addressed by regulation of banks, due to the channels that link these institutions to others in the financial system. The second, counter-cyclical related, objective corresponds to the traditional defense of Keynesian intervention, which should be pursued in times of crises, not only through monetary and fiscal policies by governments and central banks but also by regulation. The third objective is to incentivize banks to provide long-term financing for development purposes. For that purpose, they may create public financial institutions (or, alternatively, foster the development of capital markets) since often long-term finance is not offered spontaneously by the markets due to greater risk. Development finance also involves the promotion of projects that reduce disparities (on income, among industries, or between different regions in the same country) and that support social inclusion, innovation and sustainable development. In these respects, development banks are seen as key financial institutions to meet such developmental objectives and that can contribute to the reduction of the fragility of the financial system.

At the same time, there might be a conflict between the first and the third objectives of the KSM approach. This is because prudential regulation (first objective) is general, thereby covering both commercial and development banks and thus potentially inhibiting the role the latter is expected to play (third objective). In practice, however, the adoption of financial regulation for NDBs implies not just possible costs but may also have its own reasoning as well — a main one being that it may guard NDBs against political intervention. Thus, the point is not just to exclude NDBs from the financial regulatory framework, given that the latter may help them be more sharply focused on their core mandates. Rather, it is to acknowledge that NDBs are different and may therefore require differentiated treatment.¹¹

⁹In the literature of market failures, however, there is always a concern with the possibility of 'government failures', resulting from the costs of intervention surpassing those of the market.

¹⁰This approach combines many ideas presented in the seminal books of Keynes (1936 [1964]), Schumpeter (1912/1934 [1982]) and Minsky (1982).

¹¹There might be the question as to whether differentiated treatment for NDBs could create the problem of uneven regulatory playing field among them. In fact, sometimes NDBs co-finance large and development-oriented projects. If it is the case that NDBs from different countries do compete for the same project, it is more likely that exchange rate risks and interest rate risk or interest rate levels will be more important than regulatory differences.

3. Key NDB Characteristics that Make Them Different from Other Banks

The key characteristics that set a typical NDB apart from other banks are as follows: First, instead of maximizing profits, NDBs are mandated to pursue public policy objectives. Second, rather than taking household deposits, typical NDBs generally are state-backed with more secure, long-term funding. Third, these banks are holders of accumulated technical expertise, especially in large, complex projects, and in assessing and monitoring risks that private banks do not. For large, general-purpose NDBs, these characteristics give them the capacity to lend at scale, provide long-term finance, and support a large variety of projects and activities. Examples include infrastructure projects in the areas of health, education, water and sanitation, logistics, urban mobility and energy; and activities to promote more and better jobs, to reduce regional inequalities and poverty, and for preparedness and adaptation to climate-related hazards, which are greatly needed for the achievement of the SDGs.

In addition, NDBs can be the financing arm of national governments taking strategic developmental choices that may include investments in innovation that, while implying risks, can yield formidable pay-offs in the very long term. In the macroeconomic area, they can act countercyclically protecting the economy from shocks and downturns, therefore reducing harmful deviations from the road towards sustainable development.

Besides these key characteristics and functions, NDBs do not play a major role in national payments systems, do not take profit-driven excessive risks, leverage less, do not engage in more complex forms of securitization that can imply financial and reputational risks, use derivatives not to speculate but to hedge their operations, and operate markedly less pro-cyclically than other banks. NDBs, therefore, do not engage in the sorts of activities or create the many risks Basel III seeks to address. The result is that an indiscriminate adoption of Basel III may have unnecessary and yet detrimental impacts on NDBs, especially the small ones due to the increased capital quality and new quantitative requirements.

Indeed, Basel III, through its wide-ranging measures, can affect significantly NDBs and the tasks they normally undertake to fulfil their missions. Summarizing the above, these tasks include: (a) lending at scale and long term; (b) lending counter-cyclically; (c) financing complex infrastructure projects; (d) supporting innovation, and (e) providing climate finance.

It is worth noting that NDBs may support projects and activities that embed all these tasks simultaneously and that involve sizeable risks. Long-term finance by NDBs is, in many instances, geared towards large-scale projects; large projects typically are infrastructure related and in most cases capital intensive, requiring substantial sums of frontloaded finance. Financing infrastructure and large projects can often require accepting temporarily the concentration of exposures: on economic groups, economic sectors and concentration on guarantors. Also, infrastructure projects are closely interdependent. If a national government goes for a big push, this may imply simultaneous execution of projects, which requires the availability of financial resources on a large scale. Moreover, some modalities of financing (e.g., project finance) can have higher risks in the pre-operational phase with high uncertainty and involve different types of risks. In the area of climate finance, many projects involve new technologies with little or no track records, making the task of risk assessment by banks harder. Thus, long-term finance may be provided for a development project that, at once, embeds all the traits and risks just mentioned.

4. How Can Basel III Affect the Ability of NDBs to Fulfil Their Missions? An Analytical Discussion¹²

This section examines how Basel III standards may affect NDBs. However, it does not discuss or highlight Basel III standards that, although important, are not central or pertinent to NDBs, such as the ones arising from banks' trading books or the use of derivatives.

4.1. Solvency and Liquidity Problems

(1) Capital requirements: Basel III demands banks to hold higher minimum capital requirements to reduce the risk of insolvency in situations of stress.¹³ It has maintained the Basel II minimum capital requirements at 8 per cent of risk-weighted assets, but, to that, it has added the requirement of capital conservation buffers at 2.5 per cent of riskweighted assets, to help banks withstand financial distress. When capital is drawn down, banks are expected to rebuild buffers by reducing the discretionary distribution of earnings. It has also created counter-cyclical capital buffers (see below). In addition, domestic systemically important banks (D-SIBs) and global systemically important banks (G-SIBs) are required to build additional capital buffers.¹⁴ These are usually large institutions that can create systemic risk, not just due to their size but also because of high levels of interconnectedness with other financial institutions. Moreover, capital under Basel III should be of higher quality, with emphasis on Common Equity Tier 1 capital.¹⁵ Finally, Basel III has adopted a 3 per cent leverage ratio — that is, a minimum level of capital against banks' unweighted assets. This is a non-risk backstop measure to reduce excessive leverage by banks - a problem that occurred during the 2007/2008 financial crisis, when capital proved to be not only insufficient but of low quality as well.

For NDBs under Basel III, such standards could also affect disproportionately the availability of credit to those exposures that require more capital (i.e., large and long-term projects, equity expositions and others). If permission is granted by the national regulator, NDBs with more technical resources and data availability may try to mitigate the quest by adopting internal models for risk assessment. These models permit banks to assign their own risk weights to their portfolio of assets and thereby potentially save capital. However, to avoid banks issuing too little capital due to the use of their own risk-assessment models, the Basel Committee has adopted measures that inhibit banks saving capital in this way. The first is the leverage ratio itself, the second is the

¹²This section starts from the analysis carried out in Castro (2018) and expands on it.

¹³For Basel standards discussed in this section, see BCBS (2011, 2017a, 2017b), unless otherwise indicated.

¹⁴D-SIBs are identified as such by national jurisdictions while G-SIBs are so by the Financial Stability Board (FSB) in consultation with the Basel Committee on Banking Supervision (BCBS 2012; BIS 2018a).

¹⁵Common shares and retained earnings should be the predominant forms of Tier 1 capital. In addition, common equity Tier 1 was raised from 2 per cent in Basel II to 4.5 per cent of risk-weighted assets. Moreover, the 2.5 per cent conservation buffers should be in the form of common equity Tier 1 capital.

prohibition of the use of internal models for certain exposures (see below) and the third is the adoption of an output floor. The purpose of the output floor is to ensure that banks using internal models have at least 72.5 per cent of capital compared with what the bank would if it used instead the standardized approach for capital determination. These measures are important to prevent major commercial banks from gaming the system. However, they removed, at least for several types of operations, the advantage of NDBs to use their own probability of default (PD), more suited to their own portfolio idiosyncrasies, and usually lower than the market.

(2) Liquidity (and funding) requirements: These are the Liquidity Coverage Ratio (LCR) and the Net Stable Funding Ratio (NSFR). The purpose of the LCR is to ensure that banks have enough high-quality liquid assets to cover net cash outflows over a 30-day time horizon in a stress scenario. It aims to avoid severe liquidity shortages as those that banks experienced during the global financial crisis. The NSFR intends to ensure that banks have enough funding with maturities that match those of their balance sheet assets and off-balance sheet commitments over a one-year horizon, avoiding significant maturity mismatches.

The introduction of internal models for credit risk by Basel II, and maintained (although discouraged), under Basel III, has in-built features that already require higher levels of capital for longer-term credit. The main concern is that the LCR and the NSFR may further inhibit long-term lending. The extent to which NDBs may be affected by these ratios depends on the structure of their liabilities — whether these are mainly short- or long term. These requirements are less binding for the NDBs under analysis in this paper, since these are non-household deposit taking institutions that rely predominantly on sources of funding such as national treasury resources, compulsory saving funds, the return of their own assets and capital markets.

4.2. Systemic Risks

(3) The large exposures framework: The large exposure risk was already addressed by the Basel Core Principles, and what the framework does is to clarify definition and measurement — and set upper limits. The limit set by Basel III is that banks' single exposures should not surpass 25 per cent of Tier 1 capital. If the exposure is from a G-SIB to another G-SIB, the upper limit is 15 per cent. A single large exposure is the sum of exposures to counterparties that are inter-connected, implying that the failure of one counterparty can lead to the failure of the other counterparties. Inter-connected counterparties can be both in terms of ownership and economic relations.

According to BCBS (2019, p. 15), all national supervisors adopt some sort of large exposure limit; and, in case such limits are breached, some of them suggest corrective measures or require additional capital. For NDBs, this rule restrains their ability to finance large projects, which usually are of infrastructure nature, but also some industrial projects. This new rule could be especially inapropriate for the smaller NDBs. The extent to which a bank is truly affected depends on how much national regulation is further tightened by adjusting to this new Basel standard. It is important to note that a few exposures, relevant to NDBs that are active internationally, as well NDBs operating

domestically, are exempted from the single large exposure rule. These are exposures to sovereigns and their central banks, and public sector entities (in the latter case, according to the same rules that apply to them under credit risk for capital requirements) (BCBS 2014; BIS 2018b). The fact is that large exposures by NDBs, to public entities or, specifically to single large projects, should be guaranteed by their governments if such exposures are in the national interest — say, the undertaking of a large energy power project needed to eliminate bottlenecks to economic growth.

The large exposure rule addresses one type of concentration risk; other types of concentration risk such as those of sectoral and geographical nature, are addressed next.

(4) Other concentration risks: Concentration risk is dealt with under Pillar 2 of the Basel framework. Unlike Pillar 1, which is prescriptive, Pillar 2 is based on a set of principles that guide supervisors. This qualitative-based approach gives more leeway for national jurisdictions to decide what strategies and procedures to adopt to the successful fulfilment of Pillar 2 objectives (BCBS 2019). Consequently, the impacts of Basel III on NDBs depend, to an important extent, on what specific treatment NDBs' jurisdictions give to concentration risks. NDBs have, by design, a propensity to have concentrated portfolios in sectoral terms, since their activities target growth-related sectors, such as construction, infrastructure and manufacturing; and in geographical terms as well. It is important, then, that national regulators do take this reality into account, if they decide to target such risks, so that such banks do not face major restrictions on their developmental role.

4.3. The Pro-Cyclical Nature of Bank Credit

(5) Lending countercyclically: Basel acknowledges that bank credit operates procyclically. To remedy this, the Basel Committee has introduced more rigorous stress tests, as these may help reduce excessive risk taking in the upside of the cycle; and, above all, capital buffers that should vary between 0 and 2.5 per cent of risk weighted assets. These buffers are expected to go up in good times and down in economic slowdowns (BCBS 2011).

Whilst these counter-cyclical buffers are welcome as they apply to commercial and investment banks, for NDBs their usefulness might be debatable. This is because NDB behaviour as regards cyclical lending is less clear. If their lending operations are mainly long term, this makes loan disbursements less variable over the business cycle, at least compared with other banks. In the downturn, such buffers may help, as NDBs do seem to scale up finance to help fight recession and unemployment. During phases of economic expansion, however, it is unlikely NDBs will slow down credit.

4.4. Market and Operational Risks (Some Also Systemic), and Those in Connection with Innovation

(6) Market risks: Basel addresses market risks with a focus on risks in trading books, which are treated under Pillar I. However, the most important sorts of market

risks NDBs face are interest rate and currency risks they have in their banking books. As regards interest rate risks in the banking books (IRRBB), Basel treats them all under Pillar II. If a bank IRRBB exposure reveals excessive risk, additional regulatory capital may apply (BCBS 2016). As regards currency risks, Basel addresses these under Pillar I, including trading and banking book exposures. Currency risks can be quite relevant for NDBs that borrow from abroad in foreign currency, which may cause a currency mismatch if their loans are extended to national borrowers in domestic currency — or an expensive hedge (if available) to be undertaken, due to the long term horizon of the loans. Also, some internationally active NDBs act as the financial arms of their countries' development agencies, and their operations may involve loans in currencies other than those in which they are funded. Moreover, a few other NDBs also engage in international operations, and lend in foreign currency to support the expansion of national corporates and other interests abroad.¹⁶

(7) Operational risks: Under Basel III, the use of internal models for operational risk the advanced measurement approach (AMA) — has been removed. The Basel Committee recognized the inherent complexity of the AMA and the lack of comparability of methodologies among banks. NDBs that intended to use such models to save capital will no longer be able to do so, although they can use their information to meet new Pillar III information requirements.

Operational risks are hard to measure and may lead to double counting with other types of risks, such as credit and market risks. Moreover, NDBs often are more exposed to large, complex projects, which may involve legal risks, included in the operational risk concept, which, if materialized, can be quite severe. Project finance, which is a finance modality NDBs often deploy in large, complex projects, and which Basel already penalizes due to various risks, has the additional regulatory/ legal risk to contend with. Guarantees may be offered by government agencies but, in general, these are to reduce losses related to credit risk, not legal and regulatory risks. This is an area in which the regulatory framework for NDBs may devote more attention.

(8) Risks in connection with innovation, including in climate finance: NDBs are keen to support innovation and do so with different instruments and practices. In this regard, two Basel III standards are discussed here: those that impinge on equity finance, an instrument NDBs use to support innovation, and climate finance, which, in many instances, involves betting on yet untested clean technologies.

Equity exposures (shares) classified in the trading book are submitted to market risk capital requirements; and the ones where there is no intention to frequently negotiate them (classified in the banking book) should be considered into credit risk capital requirements. The reason is that, if the stock price drops too much, it is like a default event, without guarantees to offset the losses.

For equity exposures not held in the trading book, investments are risk weighted at 100 per cent in the standardized approach for credit risk. In the IRB framework, depending on the method, the weights can vary from a minimum of 100 per cent to a

¹⁶BNDES is an example of a NDB providing foreign currency lending, but the bank has a source of funding in foreign currency (FAT Cambial) and hedges all its foreign currency exposures.

maximum of 1250 per cent. These risk weights penalize NDBs with a large share of equities in their total portfolio of assets.¹⁷ Above all, the very high-risk weights disincentivizes NDB exposures to blue sky projects, which may fall under the category of speculative unlisted equity. Also, when shares are classified in the banking book, their counterparty is necessarily done on net equity, so total capital can go down or up significantly, according to market movements and the Basel capital ratio can be severely impacted, sometimes without any substantial credit event.

On climate finance, as economies transition to a low- or at least neutral-carbon growth model, NDBs will become increasingly engaged in climate finance to support such a transition. In terms of risks, this engagement can be beneficial to the extent that it will shift their portfolios away from high-emission sectors and thereby reduce their vulnerability to them. At the same time, supervisors are incorporating climate-related risks in their supervisory work, as they are concerned with banks' vulnerability to such sectors and with the ever more frequent weather events, which can cause losses to banks. Accordingly, they are asking banks to report their risk assessment and management practices in this area. According to BCBS (2019), climate risk assessment by supervisors has not translated yet into additional capital requirements. What needs further discussion is the overlooked fact that NDBs becoming increasingly engaged in low-carbon growth projects may be penalized if such projects are deemed as of higher risk by their supervisors, due to the fact that they often incorporate new — and thus hard to assess — green technologies. This is a problem that all banks face, but many NDBs have the promotion of sustainable investment as part of their mandates. Furthermore, in trying to find ways to support low-carbon growth, NDBs may feel impelled to create new lending practices and tools that supervisors may judge as idiosyncratic and thus require additional capital.

It is difficult to single out which of these standards are, in practice, the most important or binding for NDBs. It depends which NDB one might have in mind, since these banks are quite different amongst themselves. The next section highlights which ones are of greatest concern for the three NDBs it discusses.

5. The Challenges Basel III Poses for NDBs: An Empirical Discussion

This section compares three large non-retail-deposit-taking NDBs: BNDES of Brazil, CDB of China and KfW of Germany, by (1) identifying through secondary information key common and specific characteristics these banks hold; and (2) discussing Basel III adoption by the banks, drawing both on secondary information and interviews. The interviews were conducted with senior bank managers from BNDES and KfW departments of regulation and compliance and CDB's operational departments, and a senior regulator from China's national financial regulatory body in their personal capacity.¹⁸

¹⁷Of the three NDBs analysed in the next section, equity stakes for BNDES and KfW are quite important.

¹⁸Indeed, it should be noted that the views expressed do not necessarily represent the institutional views of the banks or China's regulatory body. The same applies for BNDES and KfW.

5.1. Banks' Key Characteristics

Both BNDES and KfW are NDBs created in the post-war II period. KfW was created in 1948 as part of the Marshall plan to help in the reconstruction of the German economy, following the destruction it suffered during the war. BNDES was established in 1952 to support Brazil's drive towards industrialization and to reduce infrastructure bottlenecks. CDB was established later, in 1994, but also as a policy bank to support the then ongoing process of economic transformation in China. All three are the largest NDBs in their respective countries and are fully owned by the state. None of them seeks profit maximization but all of them aim at reasonable levels of profitability, so that they can channel their profits to expand their capital base to be able to accomplish their developmental roles. All three banks have changed their main focus and expanded their roles over time.

KfW and CDB are fully backed by the State, in terms of guarantees. BNDES receives State guarantees in few operations. In terms of funding structure, all banks tap into long-term funding sources. This is what they need to be able to support large-scale infrastructure projects. BNDES's main source of funding is FAT,¹⁹ a workers' compulsory savings fund; and, also, loans from the national treasury. In addition, BNDES has a small part of its funding coming from multilateral financial institutions, and national and international capital markets. For KfW, capital markets represent the near totality of its sources of funding. The bank taps such a source at low costs since it benefits from full German government guarantees. In addition, the bank counts on federal government transfers for DEG, the bank's arm specialized in development activities overseas.²⁰ CDB, in turn, raises resources by issuing long-term bonds, mainly in China's capital markets. The bank's bonds have large acceptance by local financial institutions, as the Chinese bank regulator grants CDB bonds as free-risk assets carrying zero-risk weight for capital allocation purposes. KfW bonds share the same privilege, but not BNDES.

In terms of the modality of operation and financing instruments, BNDES acts both directly and as a second-tier bank. Support to different projects and activities is given through direct loans and on-lending operations, equity, securities underwriting, and, in a small proportion, by private equity funds and provision of seed capital. KfW operates mainly through on-lending operations, equity participation, supporting venture capital, providing subsidized loans and engaging in equity acquisition abroad. CDB operates mainly through loans, extended both domestically and abroad, and acquisition and underwriting of corporate-issued bonds.

All three banks have comfortable levels of capital, which is reflected in their high total capital ratios (see Table 1).

5.2. Basel III Adoption and Challenges Going Forward

In a recent paper, Torres Filho and Xu (2020) propose four possible categories under which NDBs may fall, regarding bank standards. These are: (a) self-regulation, which means that NDBs are not subject to the supervision of national banks; (b) full compliance with Basel standards; (c) compliance with Basel standards, but with waivers and exemptions; and (d) the bank has a special and tailored regulatory framework.

¹⁹FAT stands for *Fundo de Amparo ao Trabalhador*.

²⁰DEG stands for Deutsche Investitions — und Entwicklungsgesellschaft, a subsidiary of KfW.

Years	2014	2015	2016	2017	2018	2019
BNDES	15.9	14.7	21.7	27.5	29.0	36.8
CDB	11.9	10.1	11.6	11.6	11.8	
KfW ^a	14.1	18.3	22.3	20.6	20.1	21.3

Table 1. Banks' capital adequacy ratios (CARs).

Sources: BNDES website; KfW Financial Reports, various years; CDB Financial Reports, various years. ^aKfW: Tier 1 Capital over risk-weighted assets.

All three NDBs are under the purview of national regulators,²¹ so this excludes category (a). Both BNDES and KfW comply with Basel III standards, but with waivers and exemptions, thus falling under category (c). BNDES is exempted from Basel III compliance only with liquidity ratios, although it uses them for internal risk management and reports them to the Board. KfW is exempted from Basel III liquidity ratios as well. In addition, the bank is exempted from disclosure requirements (Pillar 3) and recovery resolution.²² Unlike BNDES and KfW, CDB has been subject to a tailored regulatory framework.²³ In practice, however, the level of alignment with the Basel III framework seems high, at least regarding capital requirements. CDB's regulator requires the bank to establish financial discipline mechanisms with capital adequacy ratio (CAR) at its core. China's regulator has shown a more flexible approach to liquidity risk, as it recognizes that CDB is a bond-based bank and does not take household deposits.

5.2.1. What Are the Pros and Cons Regarding the Basel Framework and Basel III Adoption?

These banks do not directly create systemic risks — they are not household deposittaking institutions and are not a major part of their country's payments system. Adherence to Basel, therefore, is perceived as a framework with excessive control systems (although this vision is not unanimous within some of them), given their specific characteristics and modus operandi. Moreover, the framework can affect their ability to play their developmental role, especially in fostering the SDGs.

Within BNDES, there has been also a view that Basel could provide an opportunity for the development of a culture of risk control, improve the quality of risk data and facilitate the adoption of integrated risk systems. A further potential advantage is that Basel compliance could help as BNDES turns to the capital markets. Moreover, as the Bank embarked on a continuous growth trajectory and portfolio diversification, new types of risk, such as market and operational risks, would gain a new dimension, requiring more sophisticated forms of risk management.

KfW, in turn, acknowledges that adherence to a supervisory authority and being subject to external audits help the bank become safer. The generation of data and data flows is also noted as positive. As a policy bank acting on behalf of the German State

²¹BNDES is under the purview of Brazil's Central Bank, the National Monetary Commission and the Securities Commission, and under the Basel framework since 1994. For the KfW, until 2013, the Basel capital framework applied for certain bank standards on a voluntary basis. From 2013, the bank became officially subject to supervision by the German Federal Financial Supervisory Authority (BaFin) in collaboration with the Bundesbank.

²²Interview material.

²³CDB is regulated by China Banking and Insurance Regulatory Commission (CBIRC), which is the same regulator for commercial banks. However, CBIRC has a so-called Policy Bank Supervision Department, which is responsible for the financial regulation of CDB.

to implement government policies, KfW can use the Basel compliance to have some degree of autonomy and shield itself from government pressure (see Moslener, Thiemann, and Volberding 2018). However, as KfW cautions, compliance efforts require more human resources, which is a cost to the bank, and which may drive critical resources away from their primary role, which is that of a promotional bank.

KfW reticence has also to do with the more strategic position the bank holds within the German banking system. This is the case particularly regarding the historical pivoting role it has played over the years by channelling resources to the country's SMEs, a mainstay of the economy, through Germany's commercial and regional banks. Thus, back in 2001, the bank was already expressing, in its Annual Report, concerns that the then under discussion Basel II could be a contributory factor to a deterioration in finance to SMEs. Since then, KfW has maintained its reticence in relation to the Basel framework, both in general terms and in what the framework affects it directly. For the bank, under Basel III, its type of business model — of a promotional bank — is not represented. Two areas have been particularly highlighted as of concern for the bank.

The first concerns KfW on-lending business model. KfW is a large bank — the third largest bank in Germany — with a big portfolio, but in most cases it can no longer (or will not be able to) use the A-IRB approach for credit risk, which could help mitigate the need for capital. Under the alternative approach, which is the foundation IRB approach, loss given default (LGD) is determined by the regulator. For KfW, calculating its own LGD was good as it could be of low value due to collateral.²⁴ The second concerns bank's equity exposures. Basel penalizes KfW significantly, as equity business (which includes venture capital) is a very important financing instrument for the bank. The DEG Unit of the bank, moreover, uses equity a great deal to support businesses in transition economies.

BNDES expresses similar concerns regarding the disincentive, or even outright prohibition, of the use of internal models for capital determination, although the use of internal models will not necessarily always save capital. In practice, internal models for credit risk under Basel III have their use restricted to a small number of operations, such as project finance. In the case of market risks, banks authorized to use internal models should also report the results from the use of the standard model, with the stipulation that capital gains with the use of the former should be limited to 20 per cent. Yet, despite these disincentives, BNDES does and will continue to use internal models, in order to provide the information requested by the national regulatory authorities and for managerial purposes.

Basel III's higher and stricter capital requirements with an emphasis on tier 1 capital, and additional backstops, such as the 2.5 per cent conservation cushion and the new leverage ratio, also affect all three banks. However, to date, these banks are doing well in terms of capital adequacy ratios (see above) and leverage ratio. The concern is that, when need arises for a counter-cyclical action or to expand investment in SDG investments, capital positions may erode quickly. Even without a crisis, Basel III new capital requirements may constrain their role in stepping up their development plans.

²⁴According to (Lob, Schneider-May, and Kauffmann 2016, p. 8), KfW will be a disadvantage if the IRB approach is replaced by the standardized approach as the latter 'does not allow for any recognition of collaterals', despite the fact the latter is an inherent feature of the bank's on-lending business.

In terms of concentration risks, BNDES responded to the new large-scale exposures rule by selling shares. Other concentration issues for the bank include guarantor concentration and sectoral expositions, such as infrastructure sectors, State Governments and municipalities. Unlike BNDES, KfW does not have large exposures. In the case of CDB, given that the total assets are as large as \$2 trillion, the concentration risks are less of a concern for the bank.

As discussed earlier, market risks in the trading books are not relevant for NDBs. IRRBB, treated under Pillar II, is considered a significant drawback for BNDES since it has a substantial banking portfolio. The method used is the standard model and may be subjected to new parameters by the Central Bank and thereby imply higher capital requirements. On operational risks, the proposed change, to be adopted from the year 2022, and which is based on banks' operational risk losses over the past ten years, may result in a substantial increase in required capital. However, both BNDES and KfW do not consider capital requirements for operational risk a major concern.

5.2.2. Going Forward: What Are Challenging Areas?

In the banks' views, development banks are expected to play a counter-cyclical role in times of recession/crises. This role implies a step change in their amount of lending and speed of disbursements, as other banks retreat in such times. Although all three banks are doing well in terms of total capital ratios, this is the case in normal times. In crisis times, when banks are expected to expand lending very rapidly, capital ratios can be eroded quickly.²⁵ Moreover, development banks are expected to play not just a countercyclical but a strategic role as well. A regulatory framework can be limiting and thus should allow for more flexibility, including in order to enable them to support investments for a green future.

Concentration exposures remain a concern for BNDES, due to Brazil's needs for infrastructure investments, although it has declined in the last years due to divestment strategies (sale of shares). Another significant challenge is how to treat environmental and climate risks. The bank has made progress in the creation of a policy for the management of socio-environmental responsibility and for an implementation plan that highlights the importance of managing associated risks. This is under an implementation phase. The quantitative assessment of environmental risk and, above all, climate risk, is still a challenging task for the bank. Important progress has been made with the definition of risk appetite of the institution and its limits. In contrast, little progress has been achieved on reputational risks, although a lot more on the treatment of strategic risk has been accomplished. All these risks fall under Pillar II.

For CDB, the key challenge is that the regulator and supervisor increasingly use the benchmark indicators similar to commercial banks to regulate and evaluate CDB. This tendency culminated in the adaptation of the Regulation of China Development Bank by China Banking Regulatory Commission (CBRC) — the predecessor of CBIRC formally unveiled in April 2018 — in 2017. Previously, CDB enjoyed much discretion and leeway in setting up the internal risk management system, which had enabled it to play a pivotal role in speeding up the industrialization and urbanization process in China.

²⁵In the case of BNDES, during 2020, the capital adequacy ratio did not decline because the majority of the bank's response to the crisis came in the form of government operations, in which it was only the intermediary.

6. Conclusions

Our paper explores the potential impact of Basel III standards on the fulfilment of development functionalities of large NDBs. The empirical section, based on a combination of secondary information and interviews, brings together important elements and insights that support the view that Basel III may further constrain the ability of NDBs to fulfil their developmental missions, especially concerning the role they are expected to play in supporting the SDGs. The biggest constraint seems to come less from the levels of comprehensiveness and complexity of the framework, and more from the rather simple change towards tightening the levels of capital requirements and demanding better quality of capital. This is a concern shared not by small NDBs starved of capital, but by three large and well capitalized banks. Although the capital has not been a binding constraint for them in normal times, it can become so in times of crises. The counter-cyclical buffers the new framework has created do not seem to sufficiently address the problem.

A second area of contention for these big banks is the disincentive to the use of internal models, best suited to their own characteristics and which, again, may imply more capital requirements. A third area is the new large exposure rule, which is problematic for all three banks, given their focus on large, infrastructure projects. A fourth area refers to the high-risk weights required for exposures to project finance and equity. These are financing modality and tools NDBs use extensively, again, to support large and complex projects, and activities that involve innovation and risks. Essentially, these projects and activities require long-term finance. A final area which may have some impacts concerns changes in the method used for the calculation of operational risks. Liquidity and market risks, which are two areas Basel III targeted strongly in the aftermath of the global crisis, seem less relevant for the NDBs under analysis, given their funding structure based on longer-term liabilities, and the fact that they seldom engage in speculative activities.

Under Basel III, both BNDES and KfW benefit from some exemptions, whereas CDB has a tailored and separate regulatory framework. The adoption of such standards, designed having commercial and investment banks in mind, are not exactly suited to their own risk characteristics and can potentially have an impact on their future roles. What might be a better alternative is the possible adoption of separate standards, to be designed taking due account of their special forms of ownership, funding structure, business model and the strategic role they play on behalf of their national governments. Thus, what this paper suggests is that, in the case of BNDES and KfW, regulators move from the wavers'/exemptions approach adopted at present, towards a more tailored regulation for these banks, in order to ensure they are not constrained in their role to support rapid and transformative growth, especially concerning SDG goals. Ultimately, this is a political decision, of whether their governments really want these institutions to be key financing tools for supporting change and are prepared to underwrite their actions. As for CDB, although tailored regulation already exists, what it seems is that this is the case in formal terms but less so in practice.

Considering that having an international regulation can act as a protection or insurance against bad policies and decisions from administrations and governments, an alternative approach to tailored regulation for each NDB would be to have *a concerted regulatory framework at the international level for NDBs*, as the counterpart of Basel for commercial banks. A possible advantage of this latter approach might be that it would mitigate the downside or pitfall of a tailored approach, in terms of not sufficiently protecting NDBs against undue political intervention, if there are no hard regulatory rules to follow. This approach, of course, would still face the question of to what extent the diversity of NDBs would pose challenges for these concerted efforts.

Compliance with the Basel framework may also bring other palpable benefits, including better and integrated risk management systems, higher levels of bank safety, and the ability to tap capital markets at lower costs, although in the case of both CDB and KfW, low borrowing cost in capital markets has little to do with Basel compliance and more with government support. Despite possible benefits alongside costs, what transpires is that Basel adoption by these three banks was not the result of a dialogue or compromise between national regulators and banks. Rather, in each case decision on adoption was undertaken by national regulators, and only little consultation by regulators took place, though this has not been the case of CDB, which has a tailored regulatory framework. For all these banks, therefore, if an international alternative approach for development banks will not be possible, what seems needed is that more structured dialogue takes place between national policy makers, regulators and banks' senior management on how to build a regulatory framework that is more suitable to them and in line with national development priorities. To understand why this has not been the case to date, further research could throw light into decision-making process of Basel adoption for NDBs. This research could explore not only why Basel III was adopted in Brazil, China and Germany for their NDBs in the way it was, but also why, according to our own survey assessment, Basel standards were adopted by NDBs in other countries as well.

An area of clear concern relates to climate risks and climate finance. Despite the climate crisis, Basel III, a framework for capital determination based on a risk-based approach, still needs to appropriately factor in climate risks, remove the indirect forms in which it currently disincentivizes climate finance and go further by creating clear incentives instead, necessary both for bank stability and for the future of the world.

Finally, notwithstanding the insights the paper might provide by focusing on three large NDBs, the fact is that NDBs form a quite diverse group of banks. Many NDBs are just too small, are capital starved, lend too little, and lack the political support that banks such as BNDES, CDB and KfW have had over the years. In addition, many NDBs lack reliable funding sources and may be facing serious liquidity problems in their day-to-day operations. Therefore, future research is needed for an assessment of how the Basel framework affects these various other NDBs, as the policy recommendations might differ, possibly quite significantly, about what might be needed from the regulatory side to make these banks more effective tools to support the SDGs and the fight against climate change.

Disclosure Statement

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