

# Research papers

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## Matching risks with instruments in development banks



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- Business Models
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- Financial regulation
- Global Development Finance Architecture

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## Matching risks with instruments in development banks

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### Abstract

This paper explores how development banks should deploy appropriate financial instruments to encourage real economic risk-taking while minimizing financial engineering risks. We distinguish real economic risks from financial engineering or intermediary risks and argue that using complex financial instruments to leverage additional private financing may undermine policy steer and lead to too much risk being taken by development banks. We then explore comparative advantages of different financial instruments such as loans, guarantees, equity, and insurance in tackling risks in normal times. Then we synthesize common features of development banks' responses to the COVID-19 crisis. Finally, we propose future research directions.

### Keywords

Development Banks; risk;  
financial instruments; COVID-19

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### Résumé

Cet article explore comment les banques de développement devraient déployer des instruments financiers appropriés pour encourager une réelle prise de risque économique tout en minimisant les risques liés à l'ingénierie financière. Nous distinguons les risques économiques réels de l'ingénierie financière ou des risques intermédiaires et soutenons que l'utilisation d'instruments financiers complexes pour obtenir des financements privés supplémentaires peut saper l'orientation politique et conduire à une prise de risque trop importante par les banques de développement. Nous explorons ensuite les avantages comparatifs de différents instruments financiers tels que

les prêts, les garanties, les fonds propres et l'assurance pour lutter contre les risques en temps normal. Ensuite, nous synthétisons les caractéristiques communes des réponses des banques de développement à la crise du COVID-19. Enfin, nous proposons des orientations de recherche futures.

### Mots-clés

Banques de développement;  
risques; instruments financiers;  
COVID-19

## **Introduction**

This paper aims to explore appropriate financial instruments for mitigating different types of risks to maximize development impacts. It first provides an analytical framework for studying development banks' (DBs) risks and development impact, including theoretical considerations, for evaluating appropriate instruments that development banks do and should use, to maximize development impact. The second part builds on this framework to examine analytically the instruments DBs use in

normal times, looking at their advantages and challenges; it draws on extensive data collection, which INSE at Beijing University is carrying out. The third part details the response of DBs to the COVID-19 crisis; especially this section, but also the previous one, draws on extended interviews carried out with senior officials of sub-national, national, regional and bilateral DBs, which provided very valuable insights and information.

# **I – Analytical framework for studying development banks' risks and development impact**

A key difference between development banks (DBs) and purely commercial banks is that the main (and usually only) aim of commercial banks and other private investors is to maximize risk adjusted expected returns, often short-term ones. Thus, they generally do not aim to pursue development goals. Their focus is on minimizing risks that may lead to financial losses or reduce profits. While commercial banks need to manage the full range of economic, environmental, and social risks, they generally only do so to the extent that these risks impact financial returns.

In contrast, DBs have a double mandate. They mainly aim to maximize sustainable and inclusive development impact (including economic, environmental and social impacts), while maintaining some financial profits or avoiding financial losses.

In simple terms, the development bank aims to maximize a:

$$\text{Dual Ratio} = (\text{sustainable developmental impact}) / (\text{risks to that impact or developmental risks}), \text{ evaluated subject to a minimum or positive risk adjusted financial return (RAFR)}$$

A key point to make here is that for DBs the main goal is to achieve a high level of development impact, – making a major contribution to meeting the SDGs. Though important, achieving a good financial return is somewhat secondary to the dominant aim of development impact. In addition, DBs should evaluate investments over a longer period as their liability structure and projects are long- term, and because sustainable development results need to be evaluated over a longer time horizon to be sustained.

Measuring this dual ratio can be difficult. There is literature and experience on how to evaluate financial returns -- though financial crises and other shocks show this literature and experience do not at all guarantee precision or even approximation to future evolution. At present it may be even more difficult to measure development impact and risk. Though there is a lot of valuable research being done in this area, consensus on measurements of sustainable development impact is still being developed.

While some risks can be managed through financial instruments and/or through strengthened public policies, others are unavoidable. In addition, some risks (especially those linked to financial engineering, or insufficient development impact) are strongly influenced by the financial instruments that development banks may use. Identifying and categorizing different types of risks can thus help DBs determine the when and how best to use different financial instruments.

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## 1.1. Identify risks

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### A. Uncertainty vs. risk; distinction coming from Frank Knight

Before studying different categories of risk, we will first make a fundamental distinction between uncertainty and risk, building on the pioneering work of Frank Knight (1921).

**Uncertainty** cannot be valued, as Knight (1921) argued, as it is not susceptible to measurement. More uncertainty makes it harder to measure and manage risks. Events that are difficult to predict are characterized by uncertainty, such as questions surrounding the impact of digitalization on employment, unpredictable exogenous shocks, or difficult to predict political risks. COVID-19 can be seen as an example of extreme uncertainty, both with regards to it happening in the first case, as well as its evolution in different countries and its resulting overall negative economic effects.

The more uncertain the risk, the more difficult it is to raise private financing, and the more finely it needs to be distributed. In principle, this is one reason for public action (Arrow and Lind, 1970), including the use of instruments such as guarantees granted by development banks, as well as other public interventions.

**Risk** can be valued, based on the probability of an event and the potential losses/gains (or their expected values). However, as the financial crisis of 2008/9 reminded us, and COVID-19 is reminding us again, it is difficult to measure risk precisely, even using complex modeling techniques. In particular, markets tend to underestimate or neglect to incorporate “tail risk” -- the risk of low probability events with severe outcomes – in part due to short-term investment horizons, uncertainty and relative difficulty of predicting such events.

Certain types of risk are positive; indeed, such risks may stimulate innovation and are at the core of investment decision-making, as investors seek return for taking risks. There are clear development impacts/benefits of taking certain types of investment risks, such as lending/investing in projects that spur technological and other innovations, often with important positive externalities, which are beneficial for development. We call risk that generates investment, which creates value and development impact “**real economy**” risk.

These real economy risks, as we discuss below, need to be clearly distinguished from other risks, such as **financial engineering** risks, originating mainly from the type of financial instruments used. Financial engineering aims to attract and leverage additional private financial flows. In theory, financial engineering should help distribute risks to those best able to manage them. For example, financial engineering can create tranches that meet different investors’ risk appetites (such as an investment grade, mezzanine, and equity – or high risk – tranches). A positive example is attracting institutional investors to invest in projects with long-term maturities, which match their long-term liabilities. However, the use of such instruments risk extracting value, by for example redistributing such value from development banks (and ultimately governments and taxpayers) to private financial institutions, as we discuss below (Mazzucato, 2019).

A key question is how development banks should deploy appropriate financial instruments to encourage real economic risk-taking, while minimizing financial engineering risks, as illustrated in Figure 1. Quadrant 4 (bottom right) shows **the ideal outcome that DBs pursue (in general and in individual transactions)** – i.e. to maximize development impact, whilst at the same time minimizing financial engineering risk.

The key insight we hope to convey is that, say with \$1 million of capital a DB has the option of using a simple instrument, such as a direct loan or direct equity vs. a more complex option-based financial instrument, such as a guarantee or first loss tranche of an SPV. A direct loan or direct equity would likely maximize the development bank's policy steer to try to ensure maximum development impact of the transaction, though it would use more of a bank's capital. Equity could be particularly well suited for ambitious projects, e.g. development of a new technology, which may have difficulty attracting private finance due to high levels of risk and uncertainty; here an equity instrument could be particularly valuable, as it would allow the DB to capture the upside if the project is very successful.

The DB can, alternatively, use a financial instrument or derivative product that is engineered or created to attract additional financing and add leverage. The aim, from the DB angle, is often to maximize development impact by increasing volume and value of activity. The use of such instruments, however, poses several challenges. First, it may lead to too much risk being taken by the DB, including through contingent liabilities. Indeed, there may be too much risk transfer from the private financial intermediary to the DB, and therefore potential losses to the DB (ultimately to governments). Second, there may be a reduction of policy steer aimed at maximizing development impact, particularly when contracts are opaque.

The potential of long-term losses to DBs and governments is particularly high when the additional risk to the DB is not accurately compensated (e.g. through sharing in potential upside in a project) or priced (e.g. due to uncertainty, tail risk, and/or complexity of structured products which can obscure risks). When the risk is not provisioned against (Griffith-Jones and Naqvi, 2020) there is a likely trade-off between needing less fiscal resources in the short term, and potentially more in the long term.

It is important to stress that DBs can involve private finance in different ways, some of which will be more desirable in terms of maximizing development impact, and minimizing future contingency risk (see Figure 1). For example, when DBs borrow on private capital markets and give direct loans or grants, or co-finance with commercial banks or private investors, DBs can keep their policy steer, and thus aim to maximize development impact, whilst increasing leverage of scarce public resources. Another useful mechanism of DB/private financial sector collaboration can be DBs on-lending via commercial banks, if the programs have clear aims (e.g. loans for green transformation), and effective monitoring to ensure such development targets are met.



These mechanisms potentially give DBs greater policy steer than complex instruments, especially when such instruments are opaque,(as described below) and for which the developmental impact may be more difficult to ascertain. It could thus be argued that **there is a loose hierarchy of involving private finance in development funding in terms of impact**, with most impactful mechanisms being DBs borrowing on private capital markets to offer direct loans; private lenders and investors co-lending or co-investing with DBs; on-lending to commercial institutions; and complex opaque financial engineering products least attractive in terms of development impact, while also creating contingent liabilities. However, the precise impact will depend on the specifics of the projects, risks and instruments.

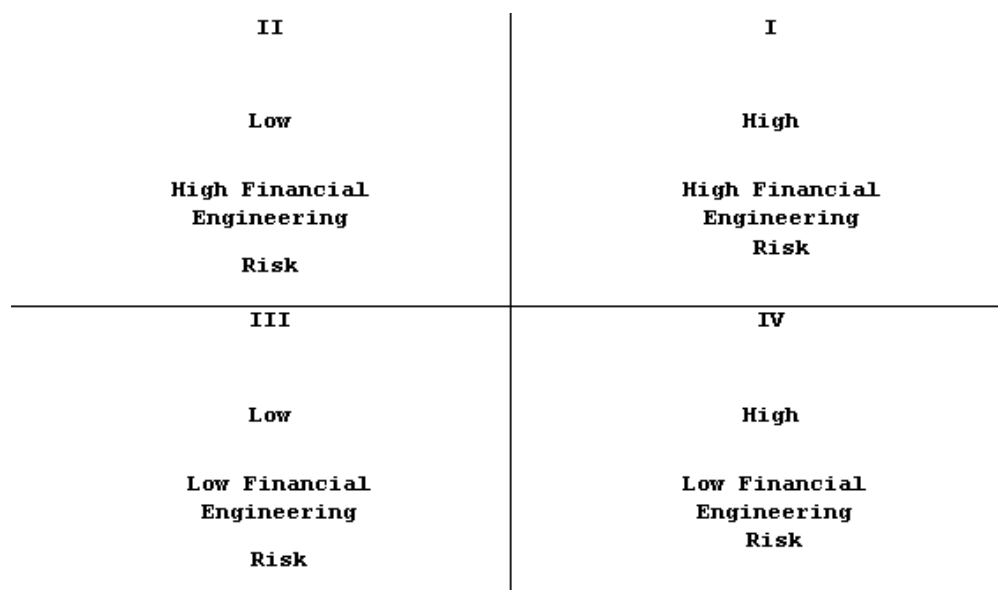
As pointed out, one of the aims of using financial engineering is “doing more with less (fiscal resources)”, which is attractive to governments that are (or see themselves as) fiscally constrained, especially during and after crises. As discussed below, one of the perceived advantages of guarantees, securitization and other more complex instruments is that potentially they can achieve more leverage, given a certain amount of capital.

Instead of using guarantees, or other instruments, to achieve more leverage, and thus greater level of activity, there is the option of increasing the capital of DBs, as was done for many DBs in the wake of the 2007/09 financial crisis. An increase of capital allows a DB to increase activity without risking increased contingent liabilities and deterioration of its credit rating. This is especially needed when DBs take on more economic risks, for example to encourage more innovation and/or to go into new sectors; or in circumstances, like COVID-19, where general uncertainty and different risks are perceived as increasing. An increase in capital will allow greater level of transactions, and/or assuming more risks by the DB, without leading to lowering of credit ratings or increasing contingent liabilities. We think increasing the capital of DBs is an important avenue worth pursuing, both at the national and multilateral level, especially in times of crisis, such as the COVID-19 related one, and given major challenges for structural transformation to a low carbon and more equitable economy.

As pointed out, increasing the paid-in capital of DBs, for a given level of transactions, at a particular level of risk will reduce the possibility that rating agencies will downgrade DBs, thus reducing the cost of borrowing on capital markets. An important issue for further research is whether the methodologies that rating agencies use are appropriate for DBs. For example, if a DB introduces a debt standstill policy, due to unexpected shocks like COVID, rating agencies may wish to downgrade the DB; in fact, a standstill may increase the chances of the debtors paying back in the medium term, as will have more breathing space to recover during a major shock, and therefore increase capacity to service debt in future. This is one of many examples why rating agencies, and their methodologies may need to be regulated, in general and especially for their rating of DBs. Further research is required here.

**Figure 1: Achieving high development impact, with low financial engineering risk**

Source: Authors' elaboration



## 1.2. Risk categorisation

We now focus on different categories of risk that DBs face, with the aim of better understanding the most appropriate instruments for managing different investment risks (as well as mitigating new risks that some instruments might create).

In analyzing these different risk categories, we draw on some of the theoretical and policy literature, which gives valuable insights into this discussion. Below we distinguish between: exogenous shocks and endogenous risks (or policy risks); risks that are diversifiable (e.g. idiosyncratic risks) and risks that are not diversifiable (e.g. systemic or systematic risks); and project level “real economy” risks and financial engineering risks.

In the next section (Section III on instruments DBs use during normal times), we will examine more specific criteria for how DBs can help reduce, manage, and share risks for projects/companies that have high economic risks and a large development impact potential, and how this could be reflected in the type of instruments that DBs should deploy.

### 1.2.1 Global/national; Exogenous/endogenous (or policy); and systematic/idiosyncratic (or diversifiable risks)

**Global systemic risks** include the risk of shocks or volatility that impact countries around the world at the same time. These include macroeconomic shocks, such as commodity price shocks, global interest rate volatility, etc. that are determined by the evolution of the international economy and external events, such as policy decisions in major developed economies. They also include non- economic risks, such as disasters and pandemics that defy and cross national borders.

NDBs tend to have concentrated exposures to systematic risks, whether on the global or national level, making it difficult for them to manage these risks or offer hedging to private investors, especially when markets are incomplete, as is the case in many developing countries.

When markets (e.g. insurance and capital markets) to hedge some of these risks exist, private entities could be best placed to take the risk, but this may be expensive, especially in developing countries where markets may be thinner. In some countries such markets do not exist at all. In addition, hedging instruments tend to have short tenors, especially in some developing and emerging economies, making it difficult to hedge a project over its lifetime, and costly to roll over hedges during crises (e.g. the cost, and even availability of hedging is pro- cyclical). Many developing countries will need international support, especially during systemic shocks as liquidity dries up. This underscores the need for strengthening the system of development banks, for example with MDBs broadening their support of NDBs in this aspect.

**National risks include domestic** endogenous or policy related risks, such as macro-economic policy and political risk, as well as exogenous shocks that do not cross borders (e.g. forest fires that impact individual countries). Such national risks raise risk premiums and deter investment in a country.

A feature of endogenous risks is that policy-making impacts these risks (e.g. governments can reduce risks by pursuing good macroeconomic policies, strengthening enabling environments etc.). While financial instruments NDBs use cannot reduce these risks per se, they can play a role in encouraging improved policy-making aimed at risk reduction. For example, if the government lends to or guarantees the payment by the public utility to an independent power producer (IPP), it has an interest in this public utility remaining financially sustainable, for instance by addressing inefficiencies in the utility.

Even though these national risks are systemic to the domestic economy, they can be idiosyncratic from a global perspective. This means that external actors (MDBs or international private actors) can manage some of these risks through diversification. For example, political risk is often uncorrelated across countries, making political risk insurance diversifiable. Similarly, when currency volatility is linked to national policies and events, it is uncorrelated with other currencies (i.e. the portion of the correlation that is less than one indicates some level of idiosyncratic risk) and thus diversifiable. Indeed, historically, a diversified portfolio of 20 or more currencies tends to have significantly lower volatility than individual currencies, and outperforms other asset classes. National disaster risks that are not globally systemic, e.g. hurricanes that impact countries independently and randomly, can also be managed through diversification – which is the basis of insurance.

A strengthened system of development banks, along with improved global insurance markets, could thus help NDBs better manage these risks. For example, MDBs could create portfolios of projects with relatively short maturities from a range of countries, which they could securitize and sell to international investors to diversify risk internationally (see Ketterer and Powell, 2018).

### 1.2.2 Real economy risks vs. financial market risks

There are a wide range of investment specific **real economy risks**, depending on the project and the timing in the investment cycle. For example, different stages of infrastructure projects, including preparation, construction and operation generate different types of cost overruns and are exposed to other important commercial risks. There are also technology and geological risks, particularly in the construction phase (see Griffith-Jones, 1993; Ketterer and Powell, 2018).

**Financial engineering or intermediary risks** refers to those risks that are related to counterparties and financial intermediaries, or are generated through investment structures. Financial market risk management implies matching risks with those best able or willing to take them. As discussed above, financial products (e.g. tranching in structured products etc.) can themselves create new risks for the guarantor (in this case the DB, ultimately funded by Governments, thus implying potential costs to taxpayers). As noted, this can be because the use of instruments increases leverage and/or transfers risks from private entities to DBs.

Financial engineering products may also have less sustainable development impact, as policy steer is often very indirect, and may become diffused or inexistent, especially when instruments are opaque. **(See Griffith-Jones and Naqvi, opcit.)** In addition, public subsidies can also engage the private sector in the investment process when it is not the most cost-efficient solution, and can create perverse incentives, such as excessive risk-taking by financial institutions (i.e. increasing the debt leverage of a company to a point where it jeopardizes its long-term viability).

This does not mean that financial products do not have some possible role to play. But that the choice of instruments needs to take into account the full range of risks, both financial and developmental.

## II – Financial Instruments Deployed by NDBs in Normal Times

As noted in the previous section, in cases where risk is well compensated (high return to risk ratio), risks could be taken by private investors without need for public support or finance. But if investment returns are not competitive with other opportunities on a risk adjusted basis, and there are clear positive externalities/developmental impacts, government/NDB interventions and support is warranted.

NDBs use 5 main instruments to support investment: i) loans (concessional and ordinary); ii) guarantees; iii) grants; iv) equity investments (including venture capital and private equity); and v) insurance type products, securitization and other diversified products. Most of these are reflected in Table 1 below.

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## 2.1 Loans, (including concessional ones) and grant financing

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Loans are the primary financial instrument of all NDBs. Practically all NDBs in the INSE survey discussed below in detail, and probably most NDBs worldwide, provide loans. A very important distinction is that loans can be first tier (i.e. directly granted by the DB) or second tier (i.e. channeled through on-lending by other financial institutions, usually commercial banks, but also cooperative banks, sub-national development banks and others). First tier loans may have important advantages, particularly for larger and more strategic projects, by granting higher policy steer to the DB. Second tier loans are valuable for smaller loans, and where local knowledge may be important, due to asymmetries of information.

Most NDB loans are provided on a non-concessional basis, though NDB loans are generally somewhat cheaper than those provided by commercial banks, in part because the funding costs for DBs tend to be cheaper than those obtained by commercial banks due to the guarantee of the publicly owned capital.

Concessional loans are relatively a low proportion of total loans. Among 50 selected NDBs, only 10 reported that they provide concessional loans (including 21% of HICs, 23% of MICs and 19% of LICs). However, the low numbers could reflect inconsistent definitions of concessionalism. In addition, 9 NDBs report using grants (including 29% of HICs, 15% of UMICs, 8% of LMICs, and 20% of LICs). Concessionalism of loans may be carried out by either subsidizing the principal or the interest payments, with the former being better in many cases, as it implies lower transaction costs.

Subsidized credit is a particularly useful mechanism *when there is insufficient return on an investment to attract private investors, but positive social or environmental externalities*. For example, in case of important development impact externalities, (e.g. positive effects on reducing carbon emissions) subsidized credit or partial grants, for example in the project design stage, seem to be the most appropriate. Given its direct nature, subsidized loans and grants can have strong policy steer, and can be used to direct lending toward sustainable development impacts, with appropriate reporting and monitoring. Subsidies can be used to stimulate investment in new markets or to encourage higher financial inclusion. In new markets or sectors, such subsidies are meant to be temporary and can be withdrawn when new activities become competitive, with solar and wind energy providing a good example, as costs were reduced significantly.

Subsidized lending is also often used to reach underserved market segments, such as MSMEs. (UN, 2020) These subsidies, which target areas of high risk or low return due to structural issues (such as poverty), might be kept in place for extended periods. For example, microfinance firms generally depend on subsidies to cover the difference between revenues and the cost of providing services and revenues obtained.

When subsidies (whether of credit or guarantees) are used, they should be just sufficient to induce private actors to invest, without over-compensating the private investor. One way to address this is through an auction, where the NDB might set a quantity and give the project to the lowest bidder. For example, viability gap funding mechanism have been created in infrastructure sectors to make projects financially attractive without raising user fees. In

these mechanisms, the eligible private sector bidder requiring the lowest subsidy is selected. Another mechanism to help strengthen subsidy allocation is strong governance structures, which benchmark concessionality to projects in similar industries and countries (UN, 2020 opcit.)

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## 2.2 Guarantees

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Guarantees are another primary financial instrument of NDBs. Of the 50 NDBs studied in the INSE Survey, 35 use guarantees, including 86% of HICs, 69% of MICs, and 50% of LICs. This indicates that NDBs are more likely to use guarantees as countries move to more advanced stages of development.

The general theoretical case for public guarantees (including those of NDBs) is based on Arrow and Lind (1970), which is the most seminal conceptual framework for understanding the role of the state in bearing risk when there is risk aversion. Arrow and Lind (1970) show that, when risk is spread in small amounts over large numbers of investors, capital can be priced at risk-neutral prices. This implies that the state's inter-temporal tax and borrowing capacity gives it a unique ability to spread risk across large populations. Therefore, development bank guarantees can help encourage private investment or lending in the face of high risk or high risk aversion by private investors or lenders (see also Anginer et al, 2011). Excessive risk aversion may arise in reaction to risks, real or perceived of specific new projects/sectors, or in situations of high overall uncertainty, national or international, such as the 2008/2009 financial crises and the current COVID crisis.

Guarantees can also potentially be used to crowd in private investment on a temporary basis when financial systems are underdeveloped, though the lower use in lower income countries suggests that they are not being used as much in this manner. In more mature markets, they can be effective in addressing fat tails in idiosyncratic risks, which markets do not tend to price on their own. (Anginer et al, 2011).

Overall, guarantees may be appropriate when used to address: i) **idiosyncratic risks** *when there is high risk aversion by private investors or lenders; when financial systems are underdeveloped; and when there are fat tails in more mature markets;* and ii) guarantees may also be granted **in times of high uncertainty**, such as after the 2008/09 financial crisis, or during the COVID crisis.

However, the case for using guarantees to help overcome credit rationing is not clear once the potential cost to the taxpayers of such guarantees is taken into account, and if credit rationing is caused for example by adverse selection linked to asymmetric information (see Stiglitz and Weiss (1981) for seminal article). Thus, Greenwald and Stiglitz (1989), as well as Lackner (1994), and Anginer et al, op cit, conclude that, without an informational advantage and the ability to cross- subsidize, it is not possible for public guarantees to help produce socially better outcomes.

Furthermore, there are other limitations to the use of guarantees. In downturns, and especially when there is extreme uncertainty, guarantees may not be sufficient to overcome bankers' heightened risk aversion, unless governments/development banks are willing to assume most or all of the risk, which could subject them to potential unacceptably high losses. Indeed, the level of guarantee needed to catalyze private lending in conditions of high uncertainty may be close to 100%. (interview material, see list of interviewees, in Appendix II). Therefore guarantee programs may fail to provide an effective countercyclical tool. In those cases, first- tier development banking may provide the only reliable channel to increase lending. This may however require development banks to either have regional branches, or operate via regional development banks (as discussed below, for example BDMG and other regional development banks in Brazil operate in that way). Local presence and knowledge will help ameliorate information asymmetries and maximize benefits to regional economies.

It is also often harder for the government to assess the development impact of on- lending or guarantees. This underscores the importance of sufficient information on the final beneficiaries (for instance by requiring appropriate reporting from these banks). A reward system could help address risks of lending to projects with low development impact. For example, the AFAWA initiative from the African Development Bank offers preferential terms to institutions performing well on pre- defined objectives regarding women's access to financing (UN,2020, opcit).

**Table 1 Types of Financial Instruments of Selected NDBs**

Source: Authors

Note: NI Refers To 'No Information' After the Thorough Search Of Official Websites Or Annual Reports.

No.	Name	Original Name	Income Level	Loan (Yes/no)	Concessional loans (Yes/no)	Guarantee (Yes/no)	Grants (Yes/no)	Equity Investment (Yes/no)	Venture capital or Private equity (Yes/no)	Insurance assets (Yes/no)
1	British Business Bank	British Business Bank	HIC	Yes	NI	Yes	NI	NI	Yes	NI
2	Business Development Bank of Canada	Business Development Bank of Canada	HIC	Yes	NI	Yes	NI	Yes	Yes	NI
3	Croatian Bank for Reconstruction and Development	Hrvatska banka za obnovu i razvitak	HIC	Yes	NI	Yes	Yes	Yes	NI	Yes
4	Production Development Corporation	Corporación de Fomento de la Producción	HIC	NI	NI	NI	NI	NI	NI	NI
5	Development Bank of Japan, Inc.	日本政策投資銀行	HIC	Yes	NI	Yes	NI	NI	NI	NI
6	FINNISH FUND FOR INDUSTRIAL COOPERATION LTD	Teollisen yhteistyön rahasto Oy	HIC	Yes	NI	Yes	Yes	Yes	NI	NI
7	KfW Banking Group	KfW Bankengruppe	HIC	Yes	Yes	Yes	Yes	Yes	Yes	NI
8	KOMMUNALBANKEN AS - NORWAY	KOMMUNALBANKEN AS - NORWAY	HIC	Yes	NI	Yes	NI	NI	NI	NI
9	KOREA DEVELOPMENT BANK	산업은행	HIC	Yes	NI	Yes	NI	Yes	Yes	Yes
10	National Development Bank of Palau	National Development Bank of Palau	HIC	Yes	NI	NI	NI	NI	NI	NI
11	Public Investment Bank	Banque publique d'investissement	HIC	Yes	Yes	Yes	Yes	Yes	Yes	Yes
12	Slovak Guarantee and Development Bank	Slovenská záručná a rozvojová banka	HIC	Yes	NI	Yes	NI	NI	NI	NI
13	Turkish Republic of Northern Cyprus Development Bank	Turkish Republic of Northern Cyprus Development Bank	HIC	Yes	NI	Yes	NI	NI	NI	NI
14	Oman Development Bank	بنك التنمية العماني	HIC	Yes	Yes	Yes	NI	NI	NI	NI
15	Agricultural Bank of Namibia	Agricultural Bank of Namibia	UMIC	Yes	NI	Yes	NI	Yes	NI	NI
16	Bulgarian Development Bank	Българската банка за развитие	UMIC	Yes	NI	Yes	NI	Yes	Yes	NI
17	China Development Bank	国家开发银行	UMIC	Yes	NI	Yes	NI	Yes	NI	NI
18	DEVELOPMENT BANK OF SOUTHERN AFRICA	DEVELOPMENT BANK OF SOUTHERN AFRICA	UMIC	Yes	NI	Yes	Yes	Yes	NI	NI
19	Fiji Development Bank	Fiji Development Bank	UMIC	Yes	NI	Yes	NI	NI	NI	NI
20	Fund for the Financing of the Agricultural Sector	Fondo para el Financiamiento del Sector Agropecuario	UMIC	Yes	NI	NI	NI	NI	Yes	NI
21	Funding Authority for Development	Financiera del Desarrollo Nacional	UMIC	Yes	Yes	NI	NI	Yes	NI	NI
22	Industrial Development Bank of Turkey	Industrial Development Bank of Turkey	UMIC	Yes	NI	Yes	Yes	Yes	Yes	NI
23	MY HOUSING Fund	Fondo MIVIVIENDA S.A.	UMIC	Yes	Yes	NI	NI	NI	NI	NI
24	NATIONAL DEVELOPMENT BANK	Nacional Financiera S.N.C.	UMIC	Yes	NI	Yes	NI	Yes	NI	NI
25	Rural and Urban Production Development Bank	BanEcuador B.P.	UMIC	Yes	Yes	NI	NI	NI	NI	NI



No.	Name	Original Name	Income Level	Loan (Yes/no)	Concessional loans (Yes/no)	Guarantee (Yes/no)	Grants (Yes/no)	Equity Investment (Yes/no)	Venture capital or Private equity (Yes/no)	Insurance assets (Yes/no)
26	The Brazilian Development Bank	Banco Nacional de Desenvolvimento Econômico e Social	UMIC	Yes	NI	Yes	NI	Yes	Yes	NI
27	The Development Bank of Minas Gerais S.A.	Banco de Desenvolvimento de Minas Gerais S.A.	UMIC	Yes	NI	Yes	NI	Yes	NI	NI
28	Bangladesh Development Bank Ltd.	Bangladesh Development Bank Ltd.	LMIC	Yes	NI	NI	NI	NI	NI	NI
29	Bhutan Development Bank Ltd.	Bhutan Development Bank Ltd.	LMIC	Yes	NI	Yes	NI	Yes	NI	NI
30	Development Bank of the Philippines	Development Bank of the Philippines	LMIC	Yes	NI	Yes	NI	Yes	NI	Yes
31	Federated States of Micronesia Development Bank	Federated States of Micronesia Development Bank	LMIC	Yes	NI	NI	NI	Yes	NI	NI
32	National Agricultural Credit Fund of Senegal	Caisse Nationale de Crédit Agricole du Sénégal	LMIC	Yes	NI	Yes	NI	NI	NI	NI
33	National Bank of Economic Development	Banque Nationale pour le Développement Economique	LMIC	Yes	NI	Yes	NI	NI	NI	NI
34	National Development Bank of Papua New Guinea	National Development Bank	LMIC	Yes	Yes	NI	NI	NI	NI	NI
35	PT. Multi-Infrastructure Facility	PT. Sarana Multi Infrastruktur	LMIC	Yes	Yes	Yes	Yes	Yes	NI	NI
36	Rural Development Bank	ធនាគារអភិវឌ្ឍន៍ជនបទ	LMIC	Yes	NI	Yes	NI	NI	Yes	Yes
37	Small Industries Development Bank of India	Small Industries Development Bank of India	LMIC	Yes	NI	Yes	NI	Yes	Yes	NI
38	The Development Bank for Production	Banco de Fomento a la Producción	LMIC	Yes	Yes	Yes	NI	Yes	NI	NI
39	Vietnam Development Bank	Vietnam Development Bank	LMIC	Yes	NI	Yes	NI	NI	NI	NI
40	Vanuatu Agricultural Development Bank	Vanuatu Agricultural Development Bank	LMIC	Yes	NI	NI	NI	NI	NI	NI
41	Cooperative & Agricultural Credit Bank	بنك التسليف والتعاوني الزراعي	LIC	Yes	Yes	Yes	Yes	NI	NI	NI
42	Development Bank of Ethiopia	የኢትዮጵያ ልማት ባንክ በ.ኢ.ዘ	LIC	Yes	NI	Yes	NI	NI	NI	NI
43	Development Bank of Rwanda	Development Bank of Rwanda	LIC	Yes	NI	NI	Yes	Yes	NI	NI
44	Liberian Bank for Development and Investment	Liberian Bank for Development and Investment	LIC	Yes	NI	Yes	NI	Yes	NI	NI
45	National Bank of Agricultural Development	Banque Nationale De Développement Agricole (Bnda)	LIC	Yes	NI	Yes	NI	NI	NI	NI
46	National Investment Bank	Banco Nacional de Inversión	LIC	Yes	NI	Yes	NI	Yes	NI	NI
47	Tanzania Agricultural Development Bank	Tanzania Agricultural Development Bank	LIC	Yes	NI	NI	NI	Yes	NI	NI
48	TIB Development Bank Limited	TIB Development Bank Limited	LIC	Yes	NI	NI	NI	Yes	NI	NI
49	Uganda Development Bank	Uganda Development Bank	LIC	Yes	NI	NI	NI	Yes	NI	NI
50	Financial Development Company	Société Financière de Développement	LIC	NI	NI	NI	NI	NI	NI	NI

## **Box 1**

### **INSE NDB STUDY**

In order to map financial instruments deployed by NDBs, INSE selected 50 NDBs out of the full population of 220 NDBs worldwide<sup>1</sup> based on three main criteria, that is, income levels, size and mandate, to ensure that the selected cases are as representative as possible.

All NDBs were divided into four income levels, that is, high income countries (HICs), upper middle income countries (UMICs), lower middle income countries (LMICs) and low income countries (LICs), in line with the World Bank's country classification. Income levels are the proxy of development stages. Development stages matter, as countries at different stages of developments have different industrial structures and financing needs which requires different financial structures (Lin, et al, 2013, Allen et al., 2018). Hence, NDBs from different income levels should have distinct missions and instruments, and NDBs have to adapt their roles to meet evolving financing needs as countries advance to more developed stages of development, and their financial sector changes and evolves.

Second, NDBs at each income level were ranked by total assets, then divided NDBs into quintile, and select about two NDBs from each quintile to ensure that both big and small NDBs are represented. Size matters, as banks of different sizes may face divergent challenges and opportunities. For instance, small banks may be undercapitalized and resource constrained. They also use different types of instruments.

When selecting about two NDBs from each quintile at a given income level, different mandates to ensure the representativeness were considered. Mandates of NDBs have two categories: one is general purpose and the other is single purpose including agriculture, infrastructure, housing, SMEs and entrepreneurship, trade, etc.

In total, 50 NDBs were selected to ensure their representativeness as far as the income level, size, and mandate are concerned. In addition, the selected NDBs come from different regions being also representative in terms of geographical scope.

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<sup>1</sup> The Institute of New Structural Economics at Peking University (INSE) has built a comprehensive database on development finance institutions worldwide (Xu et al., 2019). In total, 378 NDBs have been identified worldwide. In order to use the basic financial indicators, we have rigorously matched these NDBs from the INSE list with banks from Bank focus – a very comprehensive bank-level database based on publicly available annual reports and financial statements. Out of 263 matched NDBs, 220 have information on total assets as we need to use total assets as a proxy of bank size to select representative NDBs.

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## 2.3 Equity Investment

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Until now, we have focused in this section on examining the use of loans vs. guarantees to share risks between DBs and private lenders and investors. However, there is the complementary issue about how future returns can be shared. Unlike grants or subsidized loans, equity financing allows the NDB to capture the upside potential. Assuming more risks may require higher provisioning against the DB capital, but has the advantage that if the company/project becomes very profitable, the DB will obtain part of the profits, which it can use to cross-subsidize socially or environmentally desirable operations and/or increase the DB's own capital, leading to future increased ability to carry out larger or more transactions. It also allows significant policy steer, for example toward innovation and sustainable development.

If the objective is to support innovation and innovative business models, the right instrument seems to be equity financing, either directly in individual companies, through a diversified portfolio – or a Venture Capital model. While some of the businesses seeking investment may ultimately fail, the gains from a few winners should compensate the failures of the losers, and may generate significant net profits.

Equity investment is the third NDB financial instrument in terms of importance of use by DBs. Out of the 50 selected NDBs in the INSE Survey, 27 deploy equity investments. These NDBs seem to be evenly distributed across income levels (42% of HICs, 69% of UMICs, 46% of LMICs and 60% of LICs).

In the INSE Survey, 11 NDBs provide Venture Capital or Private Equity investment to high-risk firms. These 11 NDBs include 35% of HICs, 30% of UMICs, 15% of LMICs, and 0% of LICs. This implies that there may be more demand for VC or PE for countries at the technological frontier.

There are other mechanisms through which DBs can “capture the upside”, such as debt instruments with equity kickers (e.g. warrants). One such instrument being currently applied by the European Investment Bank (EIB) and other DBs is venture debt to support “innovative enterprises”. If a business does well, the EIB gets part of that higher profit as compensation for taking a higher risk. This is usually done by a loan that is converted into an equity-linked instrument (warrants) or profit participation. Venture debt also has the virtue of financing the growth stages of companies, for example for scaling up from pilot to mass manufacturing, further development of R&D, and international expansion

Capital markets are a key source of equity financing but remain underdeveloped in many countries and mostly inaccessible to smaller businesses. PE/VC investment level is particularly low in Africa where only \$2.5 billion has been invested annually over the last five years (EMPEA 2019b). When these markets do not develop on their own, DBs can support investments in sustainable development via equity, and catalyze market creation. Such investment could be structured to cap the entrepreneur's upside, so that entrepreneurs will not use public money unless they really need it (Carter and Plant, 2020). Nonetheless, finding the appropriate risk- reward sharing mechanism and size of public intervention can be difficult. This requires transparency and monitoring systems in place to assess the results of public support mechanisms.

Another risk associated with private equity has been the intensive use of debt leverage to enhance investment returns. The use of leverage should be monitored since excessive risk could make companies less resilient to economic downturns and also have systemic implications.

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## **2.4 Resource financed infrastructure instrument**

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One interesting infrastructure loan instrument deployed by CDB and China Exim Bank is known as resource-financed infrastructure (RFI). RFI is an instrument whereby a government pledges future revenues from a resource project to repay an existing construction loan, linking two separate activities, infrastructure building and resource extraction. The size of China's overseas RFI is significant. Over half of CDB and China Eximbank very large infrastructure lending was in the form of RFI.

RFI helps fill the infrastructure-financing gap, including in poorly governed developing countries. Traditionally, developing country governments often borrowed from foreign creditors to build public infrastructure and used tax revenues to repay their loans. However, debtor governments often cannot make credible commitments to repay their loans.

Recent research (Xu, et al, forthcoming) discovers two patterns. First, RFI loans are much larger than conventional sovereign loans. Second, countries with RFI loans are more poorly governed than those without. Though poor country-level governance often exacerbates credit rationing, RFI helps alleviate this.

There seem to be two channels through which RFI protects itself against limited commitment while mitigating credit rationing in poorly governed, resource-rich developing countries. First, Chinese development banks allocate funding directly to construction companies rather than borrowing governments. Second, the resource revenue goes directly to an independent escrow account established to service the debt of infrastructure loans. These two mechanisms reassure creditors that loans will finance infrastructure and that sufficient revenues from separate resource- extraction projects will be secured to repay infrastructure loans. (Xu, et al, forthcoming)

Whilst this instrument has the advantage of reducing credit rationing for funding infrastructure projects important for development, it reduces flexibility for debtor governments. Many countries/companies may have debt servicing difficulties for reasons other than poor governance, for example, these may be due to commodity price shocks, international financial crisis and most recently COVID. These shocks are not the fault of the government, because they are external. Therefore, the RFI mechanism is clearly good for creditors as it ensures repayment to them; it is partially good for borrowers, as it may enable/facilitate more lending to them. However, borrowers may lose flexibility in managing their foreign exchange resources, as part of their export revenue goes automatically into an escrow account, for repaying their infrastructure loans. If the country experiences an external shock, and may need to defer payments to creditors so as to use scarce foreign exchange for essential spending, it would be unable to do so.

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## 2.5 Insurance type products, securitization and other diversified products

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Investors might be reluctant to invest if certain risks are deemed too high and cannot be properly managed. Insurance can enable the transfer of risk to entities better equipped to hold that risk. Certain risks are, however, difficult to manage nationally. For example, NDBs do not have the tools to insure clients against **global systemic risks and global shocks**. In these cases, international markets may provide some hedging instruments, though these might be expensive, and also may become illiquid during global shocks, as discussed.

**Insurance, which is based on diversifying risks**, is the least used financial instrument. Amongst the 50 NDBs studied, only 5 NDBs report the usage of insurance including 3 from HICs and 2 from LIMCs.

**Securitization:** Securitization is another way of sharing risks with investors by bundling deals and taking advantage of diversification. In these structures, a DB could sell a portfolio of loans to investors by issuing a security. This allows the issuing banks to free up space on its balance sheet, increasing their lending capacity. Such bundling makes use of diversification by combining different assets with idiosyncratic risks.

Securitization has been a tool to increase lending in the housing market in the United States of America since the early 1980s. In 2019 the market reached around \$1 trillion, including auto loans, student loans, and SME loans. China is the second largest securitization market with the total value of issuance around \$300 billion in 2019 (Schopfloch et al., 2019). MDBs have also entered this field.

Nonetheless, securitization is not without risk as demonstrated by the 2008 financial crisis. In the lead up to the global financial crisis, many sub-prime mortgage-backed securities were issued with highly correlated loans, so that in an event of a downturn, that is an increase of systemic risk, it was likely that most homeowners would default at the same time (which is what happened). Banks had also lowered their lending standards.

Securitizations can be structured to try to overcome some of these risks, but countries need regulatory and supervisory capacity to issue such instruments effectively. The country context also matters. A wider application of such financial engineering by DBs in developing countries, therefore warrants more research.

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## 2.6 Additional factors that impact instrument choice

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One important aspect that emerged from interviews with DBs is that the type of instruments chosen is linked, in some cases to the funding, which DBs get. For example, one DB, which works under the principle of capital preservation, cannot undertake operations, which could break capital preservation, such as first loss guarantees. In this case, the only source of the DB's funding is government grants (coming from the aid budget, which are not recorded as fiscal expenditure), and the type of instruments that can be used require a counterpart of assets. NDBs that rely heavily on capital markets also reported linking instrument choice (and the level of risk taken) to funding choices, especially when ratings may be threatened in situations like COVID-19. Unless these DB's capital is increased, or other funds provided, e.g.

from MDBs, the DB's ability to use instruments and lend to sectors that imply greater risks will be limited.

Development banks need to adapt their financial instruments to tackle the changing demands from the real economy at different stages of development. As Lin et al (2013) argue in the context of new structural economics analysis. Indeed, they write that, "there is an appropriate financial structure for the economy at its particular development level. As the economy develops, the appropriate financial structure for the economy evolves correspondingly." Applied to DBs, this means that their business models, and specifically, the instruments used, need to reflect the level of development as well as the overall characteristics of their economy. Though DBs across countries can and do learn valuable lessons from each other, it is not a case that "one size fits all". Furthermore, as noted above, different missions, e.g. innovation, may require different instruments. Similarly, funding different sectors, e.g. agriculture vs. infrastructure, may require different instruments. Further research is required here.

### **III - Development Banks' response to COVID-19: instruments for the short and long term<sup>2</sup>**

The COVID-19 pandemic presents a systemic crisis worldwide. In comparison to the 2008 economic downturn, this crisis will have deeper economic and social impacts – **"15 years of progress destroyed in less than a year"** (IADB interview referring to Latin American economies). The economic policy focus in the short- term is on: saving companies and jobs; economic recovery; and medium to long- term structural transformation of the economy, with sustainable and inclusive development as key targets. The motto in many DBs, to combine both recovery and long-term transformation, is *"build back better"*. At the same time countries face an increased risk of capital flight by international investors pulling out of the country due to risk aversion, especially in poorer regions, like Sub-Saharan Africa. This causes stock market downturns and weakening of exchange rates, making international finance more expensive or unavailable, and forcing governments to rely mainly on domestic borrowing.

Common factor across countries that impact DB activity include: the need of companies for liquidity (to provide support for working capital, not normally a function of DBs) to pay workers and suppliers; the need for specific financial instruments, including those with sectorial priorities, such as health; and a focus on avoiding disruption to value chains.

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<sup>2</sup> The content of this chapter is the result of semi-structured interviews with the top-level management of the mentioned Development Banks.

In this context, DBs are increasingly facing a greater complexity in risk management, as uncertainty and needs grow, and in the identification of their role and targets as financial institutions for development. The current dilemma is between a possible deterioration of credit quality of DB's loan portfolios as companies' financial situations compromise their ability to repay their loans, vs. the imperative of granting credit that could contribute to companies' survival and maintenance of jobs.

A positive aspect of the COVID response is that DBs can, especially initially, use the instruments they developed in the 2007/2009 crisis, and most of them have been doing so. This increases speed, as discussed below. In our interviews, DBs also stressed that it is easier to lend directly and quickly to companies with whom they already have a relationship, and therefore have deeper knowledge of them. Several international DBs use national DBs as intermediaries for this reason. For example, the UK CDC lends through TDB in Africa, and BNDES channels transactions in Minas Gerais via DBMG, the sub-national/regional development bank.

DBs noted that equity is harder to roll out than loans: due diligence takes longer for equity investments than for lending; equity tends to have higher transaction costs; and equity is harder to price in today's context of uncertainty. Therefore, most DBs are concentrating more on lending than equity, even though lending increases company leverage, and may lead to excessive debt. A major problem, especially for poorer developing economies is the scale of the informal sector, which is only partially included in national emergency programs.

Meanwhile, commercial banks, especially in developed economies, but also in developing ones, are reportedly facing problems of capital more than of liquidity. This implies that the obstacles for commercial banks are based on insufficient capacity to absorb risk in a context of growing risk aversion more than due to a lack of liquid financial resources. This is why guarantees covering credit risk seem especially valuable in current circumstances. A problem is that commercial banks' alleged risk aversion (and fear of uncertainty) is so great in COVID times, that they will often lend with 100% of guarantees by a DB (or the government), when in normal times, they may do the same transaction with 80% guarantee or less (as indicated, for example by EAPB).

In this context, DBs have the capacity to intervene and absorb the effects from the economic and social downturn caused by the COVID- 19 pandemic. The nature of DBs, compared to commercial banks, allows them to have:

- More efficient risk bearing activity due to their shareholder structure;
- Higher degree of repayment from investments with the same credit risk due, as debtors often have a greater willingness to repay to them, due in part to their preferred creditor status;

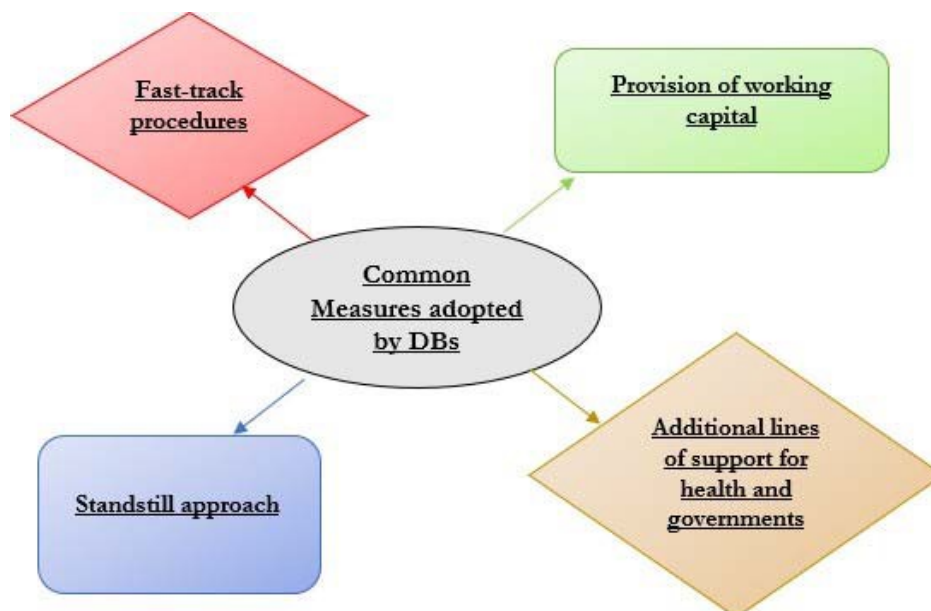
- More efficient structure in taking risk because DBs are not listed on equity markets and thus not subject to short term volatility of stock prices, and because DBs are long term lending institutions that can hold an equity portfolio for the long term (when the volatility is lower) without liquidating it.<sup>3</sup>

Given the peculiarity of the situation, the reaction of DBs to the COVID-19 pandemic does not follow a linear or pre-defined strategy, but is more like a *learning-by-doing* process in which the financial institutions are constantly evaluating whether the tools in place help achieve the targets or need to be adapted. Nonetheless, during the first phase of the COVID-19 pandemic, there have been some common measures adopted by National and Multilateral DBs, including:

- **Fast-track** procedures to facilitate the approval of the transactions
- **Provision of working capital** for companies through loans, grants, guarantees
- **Standstill approach** on existing loans – extended grace periods
- **Additional lines of support** for health sector and governments, especially local ones

**Figure 3 – Common measures adopted by DBs**

Source: Authors' elaboration



<sup>3</sup> In this context, DBs are increasingly worried that regulators and rating agencies are not making any discount for long term holding in the requirements for equity of DBs. The horizon at which DBs mark to market is usually longer, and in the long term DBs are better at bearing this type of risk



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### 3.1 Fast-track procedures

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To speed-up the process and allow for a quicker distribution of financial resources, various DBs have put in place *fast-track procedures*, shortening the time between the request and the disbursement of the loan. The extent of time reduction differs across institutions, but among the most notable measures, we identified:

- **IDB** reduced the time of the process by 2/3 on average, by developing prototypes to pre-approve the economic analysis and the monitoring and evaluation, “*so to have the back work already done*”; this means loans can be approved/disbursed within one month and a half, maximum two months
- **CDB** set a rule for which it must respond within 24 hours to the financing needs of central and local leadership groups or command offices for epidemic prevention and control, including their various divisions; and within 48 hours to those of enterprises participating in epidemic prevention and control
- **KfW** launched a new program targeted at SMEs, the “*KfW Instant Loan 2020*”, to provide liquidity through an “*easy-to-apply immediate loan*”<sup>4</sup> with no further risk assessment by KfW
- **Caisse des dépôts** is promoting the use of digital services to make loan applications, disbursements and signatures more fluid
- **BDMG** launched a digital platform for SMEs, to accelerate all background work and to facilitate access for companies; loans for SMEs can be disbursed in around 1 hour
- **AfD** launched a fast-track procedure, allowing the banks to disburse financial resources in half the time compared to the pre-COVID-19 situation.

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### 3.2 Provision of working capital with loans, grants and guarantees

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The COVID-19 pandemic has increased companies’ demand for short-term loans for funding working capital. In this light, and opposite to what is usually done in normal times, DBs have drastically increased disbursements of working capital, to help enterprises pay workers and suppliers. The instruments to disburse working capital and general liquidity include loans, grants and guarantees, similar to instruments used in normal times. In terms of provision of working capital, loans and grants are currently usually accompanied by conditions, such as maintaining stable levels of employment and salaries.

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### 3.3 Loans and grants

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Loans are the preferred mechanism in the short-term due to the nature of the instrument, which is easier to roll out. At the same time, as pointed out above, the use of debt has its limitations, implying a high leverage for debtor companies.

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<sup>4</sup> In this context, DBs are increasingly worried that regulators and rating agencies are not making any discount for long term holding in the requirements for equity of DBs. The horizon at which DBs mark to market is usually longer, and in the long term DBs are better at bearing this type of risk

Among the most noteworthy measures put in place by DBs during the first COVID-19 phase we have discovered in interviews, we highlight:

- **BNDES** issued a credit extension for SMEs through accredited financial institutions in loans and grants with 2-months no firing and no cutting salary conditions by the companies, for an overall cost of R\$ 5 billion (US\$ 1 billion).
- **IDB** increased liquidity and working capital lines with a specific focus on SMEs and specific sectors such as tourism, agribusiness, manufacturing, the financial sector, trade and supply chain.
- **EIB** mobilized €40 billion as first immediate response to the COVID-19 pandemic, primarily to support SMEs.
- **CDB** set up a special working capital loan facility to help epidemic-affected enterprises resume work and production as soon as possible, to bring stability to enterprises and the economy. The facility consists of RMB 130 billion loans (US\$ 18 billion) and US\$5 billion loans, to be adjusted based on planning and progress and the amount of funds needed for work and production resumption. By the end of February, CDB had issued RMB 10.8 billion (US\$ 1.4 billion) of special loans from the people's Bank of China, and RMB 144.1 billion (US\$ 20.3 billion) of special loans for resumption of work and production, which supported epidemic prevention and economic and social development of all regions.
- **KfW** will disburse up to €100 billion, through the European Recovery Fund, for refinancing of special guarantees programs. In addition, KfW also launched a program of syndicated loans for SMEs, the "*KfW Special Program for Syndicate Financing*", for projects of minimum €25 million<sup>5</sup>
- **CDP** made up to € 3 billion available to Italian banks for granting new loans to SMEs together with a new 18-months liquidity line of up to 2 €/bn directly provided to medium and large companies
- **Caisse des dépôts** focused its attention primarily on SMEs and specific sectors, mainly legal professions and social housing with an exceptional cash envelope of €500 million for the former and €2 billion for the latter
- **CDC** launched the "*COVID-19 Business Response Facility*" and the "*COVID-19 Emergency Technical Assistance Facility*", to distribute grants and technical/advisory assistance to businesses. Healthcare businesses will be prioritised in the first round of funding, followed by businesses adapting to address the basic needs of underserved groups, up to £160,000 per company.

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<sup>5</sup> <https://www.kfw.de/inlandsfoerderung/Companies/KfW-Corona-Hilfe/>

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### 3.4 Guarantees

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Guarantees are becoming more important in the COVID-19 phase, with an increasing emphasis on portfolio guarantees.<sup>6</sup> As noted above, guarantees have the same credit risk/risk of default as loans. However, guarantees are becoming more popular due to the possibility of higher leverage and a lower liquidity risk, which however comes at the price of a higher risk for the National DBs, of contingent liabilities. As the lender of last resort for DBs is the National Treasury or the Ministry of Finance, there is higher overall systemic risk embedded in guarantees. As Anginer et al (2011) showed, guarantees work in a different manner depending on the times when they are used. During normal times, guarantees provide insurance against idiosyncratic risks. In circumstances with aggregate systemic risk, where there is a strong correlation between defaults, guarantee schemes may also need subsidies or financial resources from the State.

Having acknowledged the main shortcomings of this instrument, the most important guarantee programs put in place during the COVID-19 pandemic include:

- **BNDES** launched a new program of guarantees with an overall total disbursement equal to R\$ 100 billion (US\$ 20 billion), **equal to 20% of the total credit for SMEs in Brazil**. BNDES also has a program to distribute financial support to certain sectors (e.g. aviation) through value chains by big Brazilian enterprises, which will be the first recipient of the loans, to SMEs in certain sectors (e.g. aviation).
- **EIB** delivers a portion of the budget of the European Recovery Fund (around €200bln).
- **KfW** launched the “*KfW Special Program 2020*”, which includes a package of instruments with guarantees from the State. These instruments include new, considerably modified and extended financial support for German companies during the COVID-19 pandemic. The program “*started on 23 March 2020 and registered around 2,000 applications and EUR 0.5 billion in commitments in just one week*”.<sup>7</sup>
- **CDP** issued a guarantee covering up to 80% of new bank loans for Italian companies with a turnover greater than €50 million.
- **BGK** has put in place several schemes aimed at increasing the disbursement of working capital, mainly through guarantees. BGK will increase the eligibility, the amounts and coverage of 3 guarantee programs (for SMEs, other companies, and liquidity) together with a program of loans to expand liquidity.
- **AfDB** launched country-specific lines of credit, disbursing an overall amount of US\$1.35 billion for private sector operations.

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<sup>6</sup> Difference between **individual asset guarantee vs portfolio guarantees**: after Juncker plan in EU *Silver lining Portfolio guarantees* have lower risk and thus have greater multiplier – more powerful leverage effect. Guarantees function like equity – via first loss guarantee; if for a guarantee for one project each \$ need 1\$ of capital, for a portfolio first loss guarantee 1\$ supports multiple \$s of projects.

<sup>7</sup> [https://www.kfw.de/KfW-Group/Newsroom/Latest-News/Pressemitteilungen-Details\\_583809.html](https://www.kfw.de/KfW-Group/Newsroom/Latest-News/Pressemitteilungen-Details_583809.html)  
(accessed on June 8<sup>th</sup> 2020)

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### 3.5 Standstill approach

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Another common instrument used by DBs during the COVID-19 pandemic has been a **standstill approach** on existing loans with extended grace periods. The reasons behind the choice of this (passive) instrument have to do with the current difficulty of renegotiating the terms of contract, which would increase the costs for the DBs, hence making the standstill approach cheaper and faster. However, this passive instrument is often seen as a negative signal by rating agencies, that tend to lower the rating of the credit institutions implementing it. At the same time, different scholars and senior officials have argued that such instrument, similarly to what is proposed for GDP linked bonds (for a detailed overview of the topic, please refer to Benford, Ostry and Shiller (2018)), is usually aimed at increasing the quality of the credit that, consequently, will be more likely to be repaid. Therefore it would be desirable for rating agencies to adapt their methodologies to take account of these insights by academics and policy-makers.

Generally, almost all DBs have offered this standstill approach, including an introduction of grace periods for their clients. Among the most important examples, we report the following cases:

- **BNDES** offered an extended grace periods of 6 months.
- **BGK** applied a reduction in interest rates on existing loans
- **CDP** allowed for a greater flexibility of payment on instalments of mortgages by local authorities and regions
- **Caisse des dépôts** introduced an automatic deferral of six months' maturities for interest-free loans and a deferral, on request, of the repayment deadlines on loans of specific programs.
- **AFD** adopted a flexible policy on the terms of contracts for existing guarantees.

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### 3.6 Additional lines of support for health sector and governments

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During the COVID-19 pandemic, DBs have also played a crucial role in providing liquidity to the central governments and supporting the health sector with injections of liquidity. A list of the most important measures put in place by DBs over the first months of 2020, includes:

- **IADB** issued country specific credit lines for health systems, for example, in Uruguay (US\$ 1.7 billion)<sup>8</sup> and a smaller program for Belize (US\$ 6.2 million)<sup>9</sup>
- **BNDES** announced a new special credit line of R\$ 2 billion (US\$ 0.4 billion) to support healthcare & life science manufacturers to produce medical equipment; it is also currently providing liquidity to the central government

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<sup>8</sup> <https://en.mercopress.com/2020/05/28/idb-us-1-7bn-loan-for-uruguay-to-address-the-covid-19-pandemic> (accessed on June 7<sup>th</sup> 2020)

<sup>9</sup> <https://www.iadb.org/en/news/idb-approves-loan-support-belizes-covid-19-immediate-health-response> (accessed on May 20<sup>th</sup> 2020)

- **CAF** issued a contingent credit line of up to US\$ 50 million per country for public health systems
- **CDB** issued a loan of RMB 2 billion (US\$ 0.3 billion) for healthcare assistance, purchases of emergency equipment, and funding for work; by the end of February, CDB had also issued RMB 27.2 billion (US\$ 3.8 billion) of emergency loans for epidemic prevention and control
- **AfDB** launched country-specific lines of credit, disbursing an overall amount of US\$1.35 billion for private sector operations; it also launched country-specific lines of credit, disbursing US\$5.5 billion for sovereign operations, and an additional US\$3.1 billion for sovereign and regional operations as part of the African Development Fund<sup>10</sup>
- **CDC** launched the “COVID-19 Business Response Facility” that will prioritise healthcare businesses in the first round of funding

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### 3.7 Other Regional DBs and municipal funding banks and agencies

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Local public financial institutions are also playing an important role during the COVID-19 pandemic. Compared to national and multinational DBs, sub-national regional DBs and municipal funding banks have a different nature, size and way of raising funding. Differences are also notable within local financial institutions, due to their different scopes, countries' credit worthiness and company statutes.

The group of German regional DBs (**Nordrhein-Westfalen- NRW, WIBank, Investitionsbank Berlin, Thüringer Aufbaubank, L-Bank, Förderbank-SAB, Rentenbank**) has been particularly active during the first phase of the pandemic. The common instruments used in the short term by these institutions are a combination of: a) guarantee schemes, generally addressed to specific companies in terms of size or sector; b) working capital programs to increase the liquidity of the companies through loans, grants and bridging loans; c) standstill approach on existing loans and an extension of the investing periods.

Outside the European continent, the regional Brazilian DB, **BDMG**, has provided strong financial support to local companies. With a combination of guarantees, loans, grants, fast-track procedures and standstill approaches, BDMG has expanded its countercyclical program for the health sector, and issued an emergency program for tourism and a multi-sectorial emergency line for SMEs.

It is interesting that BDMG has adjusted its risk appetite, inserting the “COVID-19 impact on the sector” as an additional variable to balance collateral with other attributes of the credit operations (rating, term, size and purpose), in order to provide guidelines for decision-making on the granting of credit.

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<sup>10</sup><https://www.afdb.org/en/news-and-events/press-releases/african-development-bank-group-unveils-10-billion-response-facility-curb-covid-19-35174> (accessed on 3<sup>rd</sup> June 2020)

Knowing that the segments (e.g., SMEs) and sectors (e.g., tourism) with the greatest negative impact (and therefore the highest risk) are precisely those that have the greatest need for credit support, BDMG has been working on new guarantee funds. The State of Minas Gerais established the Minas Investe Garantidor<sup>11</sup> – a public fund managed by BDMG that can be used to provide guarantees to the Banks' operations in the context of the economic response to COVID-19. The fund will support operations for micro, small and medium-sized companies, but eventually may be applicable in credit operations with large companies for strategic projects. With these measures, BDMG has expanded its capacity to act in times of crisis, promoting access to credit for the companies that need it most, while taking care of its economic and financial sustainability.

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### 3.8 Recovery phase and instruments for the medium-long term

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One of the main challenges faced by DBs is meeting climate targets during the crisis response. In particular, the current debate is on whether there is a need to soften these targets, avoiding additional costs for companies during the crisis, or whether keeping these targets might represent the right push towards a greener economy “to rebuild better”. The overall perception is that DBs will attempt the latter approach. Ongoing discussions are also about the possibility for DBs of using different reporting with regard to climate, pre and post COVID-19, keeping climate targets in the existing portfolio of instruments and relaxing targets in new emergency instruments during the pandemic.

In this context and looking towards the recovery phase, DBs agree that the medium to long-term approach must be focused on rebuilding the private sector, while moving back to an environmentally sustainable path. This can be achieved by large long-term investments, supported by appropriate instruments to provide adequate liquidity and absorb the risk in a long-term time frame. Infrastructure represents one of the main areas of interest for these types of investments and there is a wide agreement among DBs that **syndicated loans** can be a useful funding tool for these projects, especially in the construction phase. There are multiple advantages of using syndicated loans, usually partnered with international banks and the National Treasury, as they help DBs leverage capital and allow better risk absorption in the long term.

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<sup>11</sup><https://www.almg.gov.br/consulte/legislacao/completa/completa.html?tipo=DEC&num=47939&comp=&ano=2020> (accessed on 10<sup>th</sup> June 2020)

## IV – Conclusion and further research suggestions

A key question in this paper is how development banks should deploy appropriate financial instruments to encourage real economic risk-taking while minimizing financial engineering risks. **The outcome that DBs need to pursue is to maximize development impact.**

A DB has the option of using simple instruments, such as a direct loans or direct equity vs. more complex financial instruments, such as a guarantees or securitization. A direct loan or equity would likely maximize the development bank's policy steer to try to ensure maximum development impact of the transaction, though it would use more of a bank's capital. Equity could be particularly well suited for ambitious projects, e.g. development of a new technology, which may have difficulty attracting private finance, due to high levels of risk and uncertainty; an equity instrument would allow the DB to capture the upside if project very successful. Guarantees have a useful role to play in times of high uncertainty, such as COVID times or after financial crises.

The DB can, alternatively, use more complex financial instrument engineered or created to attract additional financing and add leverage. The aim, from the DB angle, is to maximize development impact by increasing volume of activity. The use of such instruments, however, poses several challenges. First, it may lead to too much risk being taken by the DB, including through contingent liabilities. Indeed, there may be too much risk transfer from the private financial intermediary to the DB, and therefore potential losses to the DB. Second, there may be a reduction of policy steer aimed at maximizing sustainable development impact. The potential of long-term losses to DBs and governments is particularly problematic if the additional risk to the DB is not accurately compensated (e.g. through sharing in potential upside in a project) or priced. There may be a likely trade-off between needing less fiscal resources in the short term, and potentially more in the long term.

DBs can involve private finance in different ways, some more desirable in terms of maximizing development impact, and minimizing future contingency losses. When DBs borrow on private capital markets and give direct loans or grants, or co-finance with commercial banks or private investors, DBs can keep their policy steer, and thus aim to maximize development impact, whilst increasing leverage. Another useful mechanism of DB/private financial sector collaboration is DBs on-lending via commercial banks, if the programs have clear aims (e.g. loans for green transformation), and effective monitoring so such development targets are met.

These mechanisms potentially give DBs greater policy steer than complex instruments, especially when such instruments are opaque, and for which the developmental impact may be more difficult to ascertain. It could thus be argued that **there is a loose hierarchy of involving private finance in development funding in terms of impact**, with most impactful mechanisms being DBs borrowing on private capital markets to offer direct loans and equity; private lenders and investors co-lending or co-investing with DBs; on-lending to

commercial institutions. One of the aims of using financial engineering is “doing more with less (fiscal resources)”, which is attractive to governments that are, or see themselves as, fiscally constrained, especially in COVID times.

More leverage and higher levels of financing of investment by DBs can also be achieved via increasing the paid-in capital of DBs. An increase of capital allows increases of DB activity, without risking increased contingent liabilities and deterioration of its’ credit rating. This is the case also when the DB takes on more economic risks, for example to encourage innovation and/or investment in new sectors for a green and just transformation, and is appropriate in circumstances, like COVID, where general uncertainty and different risks are perceived as increasing. Increasing the capital of DBs is worth pursuing, both at the national and multilateral level, especially in COVID times, and given major challenges for structural transformation to a low carbon and more equitable economy.

### **Further research questions**

This paper was conceived as an umbrella paper, partly with the aim of defining key topics for a future research program. Indeed, new areas of future important research have been found. These include:

- 1) The role of different equity instruments for DBs as mechanisms to encourage innovative activities, better share risks and returns between DBs and private investors, and help reduce leverage for companies. Different modalities of equity instruments include direct equity (versus equity funds for example), and quasi-equity instruments like venture debt, which are a debt instrument with equity kicker.
- 2) How can the analytical framework developed in this paper for defining appropriate instruments be applied to different sectors, e.g. green infrastructure, agriculture, innovation, and industry? How should it be applied to DBs in countries with different levels of income?
- 3) Rating agencies, and their methodologies impact the cost of funds for DBs. Are rating agencies using appropriate methodologies for evaluating risk of DBs? One example is if a DB applies a standstill on some of its debts, rating agencies may downgrade it. Is this appropriate, as this may actually increase the debtor’s future ability to pay? Should rating agencies be regulated?
- 4) How can grants/concessional resources channeled to DBs be used most effectively? To what extent should they subsidize new activities with potential major sustainable development impact? To what extent should they support poorer regions and smaller companies? Should they be given upfront or reduce the cost of credit? To what extent should they directly subsidize activities (preferably on a temporary basis), and to what extent should they provide guarantees against specific risks to encourage private investors and lenders to increase their activity? Are there cases where longer-term subsidies are warranted?



- 5) What are advantages and disadvantages of using direct (retail) and indirect (wholesale) instruments? In what type of scale and sector are either of these instruments more appropriate? How does this balance change, when there is a greater emphasis on speedily disbursing funds (counter-cyclical role), like in COVID times? Or if the balance shifts to supporting a major structural transformation to a low carbon and inclusive economy, requiring greater policy steer?
- 6) There is need for greater understanding of DBs in specific country and regional contexts. A study on DBs in Sub-Saharan Africa seems essential. Research on the European Investment Bank, its valuable experience, and how it can be best transformed into further supporting the European Green Deal, as well as green transformation internationally, is also important to study. The Chinese Development Bank, as the largest DB and one which has made important contributions in China and internationally seems important to study in depth.

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Working Paper.

# Appendix 1

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## List of colleagues with whom in-depth interviews carried out

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### **African Development Bank – AFDB**

**Ambert, Cecile** – Chief Administrator – Private Sector Credit Enhancement Facility

### **Commonwealth Development Corporation – CDC**

**Carter, Paddy** – Head of Research

**Plant, Mark** – Head of Center of Global Development, Europe

### **European Association of Public Banks – EAPB**

**Roy, Marcel** – Secretary general

**Ernault, Julien** – Adviser to the Secretary-General – Department Director Public Financing Policies and Compliance

### **Inter-American Development Bank – IADB**

**Bonilla, Juan Pablo** – Manager of the IDB's Climate Change and Sustainable Development Sector (CSD).

**Prada, Alejandro** – Principal Advisor for Strategy and Corporate Affairs – IDB Invest

**Galizia, Federico** – Chief Risk Officer

**Astesiano, Gaston** – PPP Team Leader

**Ketterer, Juan Antonio** – Division Chief, Connectivity, Markets and Finance

**Powell, Andrew Philip** – Principal Advisor, Research Dept.

**Yanez-Pagans, Patricia (on behalf of Alejandro Matioli)** – Lead Economist, Development Effectiveness Division – IDB Invest

**Fonseca Daniel** – Financial Institutions Officer

**Ramos Murillo, Erick** – Consultant with the Competitive Cities team of the World Bank Group

**Maria Fernanda (Marife) Merino** – Operations Lead Specialist at the Office of Strategic Planning and Development Effectiveness

**Sacristan Postigo, Gema** – Chief Investment Officer, IDB Invest

### **Banco de Desenvolvimento de Minas Gerais – BDMG**

**Suchodolski, Sergio Gusmao** – CEO

**Modesto, Adauto** – Chief Economist

### **Banco Nacional de Desenvolvimento Econômico e Social – BNDES**

**Machado, Vivian** – Manager for international organizations – raising funds from other multilateral DBs

**Machado, Luciene** – Manager for institutional relationships

**Barros de Castro, Lavinia** – Planning and Research Area

**Agence Française de Développement – AFD**

**Poisson, Julien** – Project Manager

**Drouin, Emmanuelle Riedel** – Head of the Economic and Financial Transition Department

**Marodon, Regis** – Special Adviser on Sustainable Finance at the French Development Agency

**Winckler, Cosimo** – Investment Officer

**Sauvageot, Tomas** – Project Manager

**Oliveira, Barbara** – Development Finance research officer 3 others from risk management team

**European Investment Bank – EIB**

**Gereben, Aron** – Senior Economist in the Policy and Strategy team of the Economics Department

**Chevallier, Julie** – Advisor to Vice-President Ambroise Fayolle

**Dustdar, Shiva** – Head of the Innovation Finance Advisory division



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The Agence Française de Développement (AFD) Group is a public entity which finances, supports and expedites transitions toward a more just and sustainable world. As a French overseas aid platform for sustainable development and investment, we and our partners create shared solutions, with and for the people of the global South.

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