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Risk Transfer for Multilateral Development Banks: Obstacles and Potential

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Risk Transfer for Multilateral Development Banks: Obstacles and Potential

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Abstract[1]

Long-term development finance provided by Multilateral Development Banks (MDBs) is key to advancing the United Nations' 2015 Sustainable Development Goals. However, MDBs are constrained in their lending by the availability of capital. This paper argues that Risk Transfer, as a complement to equity injections, could permit higher MDB lending by attracting a broader class of investors. We describe selected examples of actual Risk Transfer transactions and provide estimates of the potential expansion in lending these techniques could yield. But we also identify obstacles that limit investors' willingness and ability to participate in these transactions. Therefore, we recommend an agenda for international policymakers to open the way for the wider use of Risk Transfer. Still, we recognize this will be a gradual process which cannot substitute for MDB expansion through additional ordinary capital resources.

JEL classifications: F53, O16, G15
Keywords: Risk Transfer, International Financial Architecture, G20, Multilateral Development Banks, Securitization, Rating Agencies, Preferred Creditor Treatment, Development

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1. Introduction

The adoption by the international community of the United Nations' Sustainable Development Goals (SDGs) in 2015 represented a commitment to an ambitious development agenda. It is widely recognized that Multilateral Development Banks (MDBs), as providers of long-term development finance, play a key role in furthering the SDGs. The 2015 report, "From Billions to Trillions" committed the MDB authors to boosting their own lending and facilitating increased flows of private sector financing (Development Committee, 2015).

The MDB financing and lending model requires issuing large volumes of long-term debt securities on international markets at low yields to allow lending at competitive rates, through good and bad times, to borrowers in developing countries. This model requires that investors, and their proxies the rating agencies, consider MDB credit standing to be extremely high, which effectively places a limit on the degree of leverage that can be achieved. It seems unrealistic to expect trillions to be mobilized simply through leveraging up given current capital levels. MDBs will need more capital to make a significant impact on the ambitious SDGs.

At the same time, it is widely understood that MDBs should make the most of the capital that they do have. To increase the efficiency of capital utilization, MDBs deploy a range of co-investment, risk-sharing and risk-shifting techniques. Considerable attention has been paid to the use by MDBs of "co-investment" mechanisms, such as co-financing and syndication. To date, these types of transactions have been used predominantly in the context of lending to the private sector, and a limitation is that the commercial lender partners must develop deep knowledge of the credit quality of the underlying assets. Co-financing has tended to be more successful in environments where there are more robust institutions and information is more freely available. Where these conditions are not met, it has been less successful.

The greater use of another set of techniques, that we refer to collectively as Risk Transfer, could allow for further increases in MDB lending to all countries, when supported by a broader and deeper investor base. In this category we place targeted guarantees, securitizations and structured reinsurance transactions. These techniques have received less attention although they have been effectively used in Europe, as we discuss below.[2] These techniques allow private sector investors and public institutions, particularly from donor countries, to share in MDB loan portfolio

[2] See also OECD (2021) for a useful description of risk transfer techniques and recommendations.

risk in ways that are aligned with their respective risk appetites and development objectives. As they take development-related credit risk off MDB balance sheets, they allow MDBs to lend more for a given amount of capital. But there are a set of obstacles that limit the ability and willingness of investors to participate in these transactions. Until these obstacles are removed it seems unlikely that the significant potential that risk transfer offers will be realized.

This paper is aimed at policymakers and academics with an interest in international financial architecture, but who may not have been exposed to the details of risk transfer operations, including officials in ministries of finance and development, and central banks, as well as the staff and board members of MDBs and other international organizations.

The paper has three main objectives:

1. To demystify risk transfer techniques by explaining how they have already been applied by MDBs.
2. To identify obstacles to risk transfer that remain and, thereby, construct an agenda for international policymakers such that MDBs can take greater advantage of
3. To quantify the potential impact of risk transfer transactions through illustrative calculations for a hypothetical MDB balance sheet.

On our first objective, to demystify risk transfer, we describe actual examples of transactions that have been employed to transfer risk and increase MDB lending capacity. The examples include i) portfolio exchanges between MDBs, ii) a securitization of corporate loans by the African Development Bank (AfDB), iii) the financial transactions through which the European Commission has implemented (via the European Investment Bank—EIB) its Investment Plan for Europe, and iv) guarantees provided by the Swedish International Development Agency (SIDA) to the Inter-American Development Bank (IDB) and Asian Development Bank (ADB). We highlight the advantages and disadvantages of these various approaches. We also discuss Risk Transfer in the form of reinsurance by Specialist Multilateral Insurers (SMIs). The four major SMIs have successfully reinsured a substantial fraction of their exposures via the commercial market, allowing them to operate on a significant scale with relatively modest capital. While these examples show the potential for risk transfer, many participants to date have been public entities.

In our view, attracting greater interest from private investors will require addressing the obstacles to risk transfer as identified in this paper.

On the second objective, we identify specific obstacles that are preventing the greater use of risk transfer and propose solutions:

- There remains doubt regarding the treatment, in the event of a sovereign debt restructuring, of sovereign claims transferred off MDB balance sheets. While one might presume that the Paris Club would treat MDB sovereign claims similarly, whether they remained on or were transferred off the MDB balance sheet (or insured by a third party), at present this remains a supposition. In practice, it would be difficult for the Paris Club to single out exposures that had been transferred by MDBs, especially if the transfers were synthetic. Still, we suggest that the Paris Club make explicit that the "equal treatment clause" does not apply to sovereign claims originated and serviced by MDBs independently of risk transfer. In other words, just as standard commercial claims are expected to receive equal treatment in the context of a restructuring, all sovereign claims originated and serviced by MDBs should be treated as preferred, irrespective of any risk transfer transaction.
- The policies of rating agencies estimate too conservatively the reduction in risk delivered by Risk Transfer transactions when applied to portfolios of loans originated by MDBs. While the agencies make some allowance for the "de facto" preferred nature of MDB exposures when they assign ratings to MDBs, there is no such provision or explicit preferential treatment within the agencies' securitization rating methodologies. This in turn implies that the capital consumption of the retained portions of risk transfer transactions are treated too conservatively.
- MDB loan credit performance is generally much superior to that of commercial lenders for both sovereign and private sector exposures but this may not be well-known or well-understood by potential investors or their regulators, leading to demands for risk premia considerably in excess of those charged by MDBs. As a result, while a number of proposed risk transfer transactions have been structured, they have not all been executed. Increasing the transparency of MDB

loan credit performance and facilitating the analysis of MDB credit performance by independent parties could then facilitate the use of Risk Transfer and could increase the number of potential counterparts for transactions and allow for the fair pricing of transactions. One obvious approach would be to fully resource the Global Emerging Markets Risk Database (GEMS) Consortium and enable it to expand and accelerate the publication of the risk statistics that MDBs use to pool their credit performance data. MDBs could also coordinate on a strategy to inform and discuss Risk Transfer techniques and their implications for regulated entities with bank and other financial regulators.

In summary, there is a type of chicken and egg problem here. Without many more examples of risk transfer operations, it may be difficult to convince rating agencies to change their practices but without constructive changes in that regard, risk transfer may not yield large benefits for MDBs and so the incentives to pursue a significant increase in transactions may not be present. Greater transparency from MDBs and appropriate statements by the Paris Club and financial regulators on the treatment of Risk Transfer would surely help. We come back to these points below.

On our third objective, to underline the scope for Risk Transfer, we analyze the effects of balance sheet optimization transactions using synthetic securitization techniques on a hypothetical MDB balance sheet. We show, through numerical examples, the magnitude of the increase in lending that could hypothetically be achieved without altering the institution's risk profile (as reflected in its rating).

The calculations we present for a notional and hypothetical MDB balance sheet, within which a sub-portfolio is suitable for securitization, suggest that MDB lending, for a given quantum of capital allocated to that sub-portfolio, could be materially increased through the wider use of Risk Transfer. The analysis below demonstrates how the same amount of capital necessary to support US$1 billion of direct sovereign lending could be allocated to support US$1.5 billion, when a portion of the risk of the initial US$1 billion is transferred via securitization-based transactions. An analogous multiplier could be as high as 1.7 for corporate lending. These are illustrative figures, but they are in the range of actual transactions that have focused on non-sovereign exposures. In practice, the multipliers will depend on the perceived credit quality of the exposures that are the subject of these transactions. In fact, multipliers could be distinctly higher

if the rating agencies recognized the superior credit performance of MDB lending within these securitization methodologies, as are routinely applied by the same agencies in the case of standard sovereign claims. A question remains as to how much these transactions could be scaled up. This will depend on the portion of MDB balance sheets to which these techniques could be applied, including the volume of securitizable assets. It will also depend on the financial sustainability of the MDB, taking into account the lost income due to securitization or other risk transfer techniques would entail.

Note that, as a starting point in evaluating the scope for risk transfer, we employ Standard & Poor's (S&P) methodologies. Under the S&P MDB rating methodology, calculation of the rating impact[3] is relatively straightforward. Our use of this particular methodology is then out of convenience and should not be seen as constituting an emphasis or preference for one agency compared to others. In future work, we plan to look also at the rating of the retained portion of the transaction using the Moody's or Fitch methodologies. In both cases, these are publicly available and largely quantitative.

The remainder of the paper is organized as follows. Section 2 explains the constraints on MDB lending and comments on the volume of development finance that will be required to meet the SDGs. Since capital is often considered to be the primary constraint on lending, we focus in this paper on ways that can help to boost so-called development multipliers. Section 3 describes key recent transactions through which MDBs have transferred risk: i) among themselves to exploit greater geographical diversification, ii) to other public sector entities, and iii) to the private sector. The descriptions illustrate how transactions can be tailored to match the risk appetite and development objectives of particular investors. Section 4 details obstacles to reaping the full potential of Risk Transfer by MDBs and suggests possible ways to address them. Finally, in Section 5, to show the potential of Risk Transfers to augment the scale of MDB operations, we present a worked example in which Risk Transfer transactions are evaluated, employing a realistic, but hypothetical, sub-portfolio within an MDB balance sheet. Section 6 concludes, setting out an agenda that policymakers should follow if Risk Transfer is to be fully harnessed to expand MDB lending volumes. At the same time, we emphasize the fact that Risk Transfer should be seen as a complement to, rather than a substitute, for MDB capital increases. Boosting capital, coupled with Risk Transfer, can together further the achievement of the UN's ambitious SDGs.

[3] Although qualitative elements remain in the S&P approach, as in those of the other agencies.

2. Capital Constraints and Lending Volumes

For an MDB, as for any bank, capital is a key scarce resource that constrains balance sheet growth, ceteris paribus. MDBs are unregulated, but they typically issue significant amounts of debt in global markets. So, the opinions of bond investors, and the rating agencies that influence them, represent an important constraint on MDBs' ability to leverage their capital in order to achieve increased lending. To set the context, we note that MDB shareholders traditionally have applied statutory limits to the volume of their outstanding assets, restricting the maximum amount of loans and guarantees to the total value of subscribed capital, reserves and surpluses. We calculate that the maximum allowable amount of development assets for a set of MDBs—IBRD, EBRD, ADB, AfDB and IsDB—is approximately 1 trillion dollars.[4] In addition, MDBs need to maintain, currently and prospectively, risk-weighted capital ratios and adequate buffers, based on their paid-in capital, reserves and surpluses. The combination of individual statutory limits, minimal capital ratios, and countercyclical buffers above these ratios, imply that this group of banks collectively and historically has not been able to utilize their aggregate statutory lending potential in full. While risk transfer would typically not relax statutory limits, it complements prospective capital increases, enhancing the efficient use of those resources.

In this paper we focus on the specific constraint coming from the perception of risks on MDB balance sheets, given that MDBs leverage their capital resources through significant bond issuance on international markets.[5] The major MDBs all maintain a triple-A rating to be able to borrow at low cost and provide long-term development finance at low rates both in normal times and during crisis periods.[6] MDBs maintain close relations with borrowing country governments and engage in discussions regarding appropriate development strategies drawing on their knowledge-creation activities and cross-country experiences. The financial sustainability of MDBs depends critically on their treatment as preferred creditors, which we discuss further below.

[4] For comparison, the total external debt of low- and middle-income countries summed to about eight trillion dollars at the end of 2019.

[5] Also, the statutory limits are based on subscribed capital which, for some MDBs, includes a significant fraction of callable equity. Rating agencies and bond markets regard this as less than reliable in bearing losses than paid in equity. Though rating agency methodologies for MDBs do allow for callable capital, the positive ratings impact is distinctly less than that of paid in equity. Finally, a significant fraction of the statutory capacity is located in institutions that are primarily engaged in developed country lending and, hence, the headroom has limited implications for low and middle-income development-related lending.

[6] Note that this brief account of an "MDB business model" is oversimplified in that MDBs are heterogeneous. IDA and IFAD make long maturity loans on highly concessional terms. Their financial sustainability as lenders can only be maintained by operating with a high fraction of equity financing.

Ceteris paribus, ensuring any particular rating limits the volume and composition of financing in relation to the available capital. Risk Transfer is a widely established practice among commercial banks, which regularly use such techniques to manage risk concentrations on their balance sheets, offloading specific risks, in most cases, to non-bank financial institutions (the transferees).[7] In this way, Risk Transfer meets the balance sheet management needs of the transferors while also being designed to meet the risk appetite of different transferees.[8]

Just like commercial banks, MDBs can shift risk to other investors through Risk Transfer, matching the characteristics of those exposures to the risk appetite of investors and thereby creating room on their balance sheets for additional lending. Generally, Risk Transfer does not cover an entire exposure since investors typically wish the transferor to keep some "skin in the game" by retaining some of the underlying risk. Partial retention of risk is common for commercial banks, but it may be even more important for MDBs (as we discuss below) since this preserves the de facto preferred treatment of MDB lending.

Investors in Risk Transfer transactions may include private or public institutions and are typically (although not exclusively) located in donor countries. Investors differ in the degree to which they are familiar with challenging markets (of the sort in which many MDBs operate) and, hence, they vary in their willingness to bear different types and levels of risk. The need to accommodate investor requirements is generally crucial in the design of Risk Transfer transactions which are often tailor-made to suit particular investor communities.

Donor country governments have to date been the main transferees, with more limited amounts taken up by private investors. Bobba and Powell (2006) argue that, while direct financing from donor to recipient countries allows donors to pursue their own individual objectives, this can be inefficient due to the fragmentation of financing that results. Providing resources to an MDB may then be more efficient in terms of outcomes but may require some dilution of the individual priorities of donors.

[7] Risk transfers by US lenders in the early 2000s clearly reached inappropriate levels, involved a new and poorly understood asset class of subprime mortgages, and in many cases consisted of transfers from one bank to another. The current market in bank risk transfers is more conservative in that it mostly involves transfers of risk in well-understood asset classes to non-banks. Also, originators typically retain a larger fraction of the risk, which gives them "skin in the game."

[8] Kaya (2017) provides a summary of activity and approaches in the European commercial bank Risk Transfer market. The European market relies primarily on synthetic or unfunded securitizations between banks and non-bank savings institutions.

For a donor country, providing new equity outside a general capital increase, may be complicated given the implied dilution of other equity holders and can be costly from an administrative and accounting perspective.[9] In contrast, a Risk Transfer transaction does not generally impact shareholder rights and transactions can be tailor made to donor preferences. In this way, MDBs can act as a type of aggregator for the different aims and resources of donor country development institutions and employ Risk Transfer transactions in a flexible way to enhance lending. While at some level there may be an overall budgetary restriction among donor governments, frequently a capital contribution and the involvement in a risk transfer operation may also be thought of as complementary, given the very different nature of these transactions, in terms of frequency, objectives and the nature of the procurement process.

The above discussion has made a case for Risk Transfer by MDBs. It is important, however, to understand these issues within the broader context of pressure on MDBs to generate higher volumes of development financing from existing resources. In 2013, the G20 Finance Ministers and Central Bank Governors called on MDBs to optimize their balance sheets. A process ensued that resulted in the G20 endorsing the 2015 Antalya Action Plan. The plan included five objectives, which are summarized, along with the instruments to be employed to realize those aims, in Table 2.1.[10]

In 2017, a group of MDBs delivered a progress report to the G20[11] that stated the following: "…all institutions having established relevant frameworks for Capital Efficiency and Net Income Measures; Concessional Windows having either been merged with ordinary capital or enabled to access capital market resources; and several additional actions in Non-Sovereign Guaranteed Risk Transfer and Mobilization."

[9] This explains why MDB recapitalizations are normally coordinated among shareholders and tend to be relatively infrequent and lumpy.
[10] See G20 (2015).
[11] See MDB (2017). This was, in fact, the second progress report to the G20 from the MDB.

Table 2.1. Balance Sheet Optimization Approaches

	Capital Efficiency	Exposure Exchanges	Concessional Windows	Risk Transfer and Mobilization	Net Income Measures
Objective	Operate with higher leverage, while still maintaining the triple-A rating	Reduce concentration penalties in sovereign-guaranteed exposures	Leverage the equity accumulated in the concessional windows; improve use of liquidity	Range of instruments that share risk in non-sovereign operations with private investors	Improve internal equity accumulation and capital position
Instruments	Sustainability and capital adequacy frameworks, including buffers for stress-testing and counter-cyclical lending in downturns	Synthetic reciprocal reinsurance between MDB for prolonged sovereign arrears in their largest exposures	Transfer of concessional equity and assets into ordinary balance sheet; bond issuance by concessional entities	Syndications, structured finance, mezzanine financing, credit guarantee programs, hedging structures, equity exposure	Optimize the trade-off in net income transfers to concessional windows and implement revenue and expenditure actions

The annexes to the MDBs' progress report detailed individual actions by the MDBs involved. These included a tripartite Exposure Exchange Agreement (EEA) between the AfDB, the IDB and the IBRD signed in 2015.[12] The Hamburg Declaration of G20 leaders indicated: "We welcome the second MDB report on the G20 Action Plan to Optimize Balance Sheets and encourage MDBs to make further progress in this area, making use of the whole menu of available measures."

At the time of writing, the latest Communique of G20 Finance Ministers and Central Bank Governors states: "We take note of the progress made on the G20 Action Plan on Balance Sheet Optimisation and the development of reliable and sustainable risk-sharing measures, and encourage MDBs to continue to explore avenues to make the best use of available resources, while preserving their preferred creditor treatment and current ratings." In our view, there remains untapped potential for Risk Transfer for both sovereign-guaranteed and non-sovereign guaranteed MDB lending, but subject to the removal of identified obstacles discussed further below. Private investors may remain reticent to participate (or demand risk premia that make risk transfer transactions unattractive) unless these obstacles are removed. In the next section, we describe

[12] The Asian Development Bank joined the EEA in late 2020 and executed an exchange operation with the Inter-American Development Bank.

specific selected transactions that have actually been executed, and analyze the potential for further Risk Transfer.

3. Risk Transfer Transactions

3.1 European Fund for Strategic Investments (EFSI) and Successor Programs

This section provides examples of specific Risk Transfers already enacted by MDBs. The volume of such transfers varies from very substantial transfers within European institutions, sizeable transfers among MDBs and smaller but still significant Risk Transfers by regional MDBs. The collection of transactions described, however, underlines the fact that Risk Transfer is already a significant part of balance sheet management among several MDBs. This suggests that possible developments, refinements and extensions of the approaches here described may be interesting to others.

In 2014, the European Commission (EC) introduced its Investment Plan for Europe also known as the "Juncker Plan." This consisted of an infrastructure investment program aimed at unlocking "public and private investments in the real economy of at least EUR 315 billion over the next three years."[13]

The Plan included a new structured guarantee program—the European Fund for Strategic Investments (EFSI)—that was established jointly by the EC and the European Investment Bank (EIB). The Fund was designed to provide "greater risk-bearing capacity through public money in order to encourage project promoters and attract private finance to viable investment projects which would not have happened otherwise."[14] It was created with an initial contribution of EUR 21 billion from the European Union (EU) and the EIB.

The important aspect of EFSI for current purposes is that it provides credit protection to the EIB on new financing operations including long-term senior debt for higher risk projects, subordinated loans and equity and quasi-equity. As such, it represents a structured sharing of risk on a set of exposures that, in the absence of the fund, the EIB might seek to take on alone but at a much smaller scale. In contrast to some of the examples that we consider later in the paper, the exposures covered under EFSI are new, not existing exposures for which the risk is transferred to others. But this distinction of new exposures versus existing ones is not significant, and the

[13] See https://ec.europa.eu/commission/presscorner/detail/en/IP_14_2703
[14] European Commission (2014).

mechanisms employed of shared tranches of risk, relying on securitization techniques, closely resemble other Risk Transfer activities we describe below.

The EFSI was set up in a partnership between the EC and the EIB Group to "benefit from the well-established expertise of the EIB and its proven ability to deliver."[15] The Fund was created with a guarantee of EUR 16 billion from the EU budget and EUR 5 billion capital commitment from the EIB. In addition, Member States, directly or through their National Promotional Banks (NPBs) or similar bodies, could contribute additional capital to the Fund.

EC (2014) states that "in the context of the assessment of public finances under the Stability and Growth Pact, the Commission would take a favorable position towards such capital contributions to the Fund." Private investors could also provide support at the level of the Fund. At inception, the EC and EIB estimated that the Fund had the potential to unlock EUR 315 billion with an overall multiplier effect of fifteen to one. Subsequent resources provided to the Fund enabled support for a total investment volume of EUR 500 billion.[16]

Figure 3.1 shows the initial construction of the Fund. The Fund was established with its own governance structure and is administered in accordance with agreed investment guidelines by a management body. Projects proposed for financing are validated by an independent investment committee based on their viability while ensuring that private investment is not excluded or crowded out.

A key aspect of the EFSI is that the EU's EUR 16 billion guarantee (as shown in Figure 3.1) provides first loss protection for EIB in taking on EFSI-related exposures. Losses on the EFSI portfolio have to exceed EUR 16 billion before the EIB suffers any losses. In this structural aspect, EFFI employs tranching methods familiar from the securitization and structure insurance markets

[15] European Commission (2014).

[16] This estimated impact reflects "internal" and "external" multipliers.

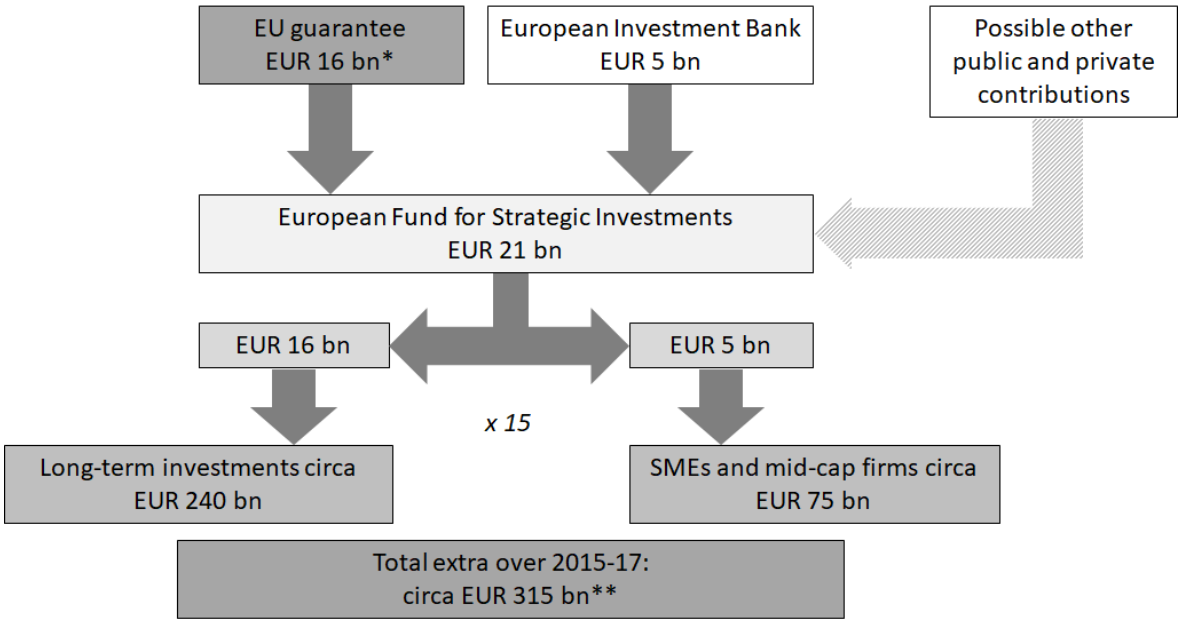
1. The internal multiplier is measured as the amount of additional investment by the EIB Group directly supported by the EU guarantee. The internal multiplier was assessed to be of the order of four times for senior debt portfolios, three times for hybrid instruments and one for equity-type portfolios. This internal multiplier transfers risk from an MDB to another publicly funded institution.
2. The external multiplier, defined as the ratio between total real investment supported and the EIB group contribution, follows an inverse relation to the internal multiplier: three times for senior debt portfolios, five times for hybrid debt and over ten times for equity portfolios, as described in EIB (2018). The external multiplier relies primarily on private sector coinvestment.

Thus, there is a natural trade-off between the internal and the external multiplier. When the EIB group invests in equity, it consumes significant EIB capital, but it has a larger mobilization impact. The contrary is true for senior loan investments.

to split the risk on the underlying pool of exposures. The allocation of risk is designed to match the respective risk appetites of the EU and the EIB.

The EIB Group provides professional advice, experience and general support to the project promoters and investors. Specifically, the EIB Group contributes staff in areas such as product development, pipeline origination and structuring, technical assistance, funding capacity, treasury management, asset-liability management, guarantees, portfolio management, accounting and reporting.

Figure 3.1. The European Fund for Strategic Investments: Initial Construction



Source: EC (2014).
* 50% guarantee = EUR 8 billion from Connecting Europe Facility (3.3), Horizon 2020 (2.7) and budget margin (2)
** Net of the initial EU contributions used as guarantee: EUR 307 billion.

The design of the Juncker Plan benefited from three factors: i) the institutional framework of the European Union, including a highly rated guarantor; ii) the established track record of the EIB in European infrastructure finance; and iii) several decades of co-financing between the EIB Group and European financial intermediaries in the banking and venture capital sector. These three factors combined to enhance both internal and external multipliers.

The Juncker Plan represented the culmination of a series of predecessor projects piloting risk-sharing arrangements between the EIB Group and the European Union in the domain of

infrastructure (including the SME Guarantee Facility, the Loan Guarantee Instrument for TEN-Transport, and the Risk-Sharing Finance Facility, among others). The aim of the successor program, InvestEU (about to be launched at the time of writing of this paper), is twofold: i) to provide an umbrella under which all previous European Instruments can be deployed under a consistent legal basis and governance, and ii) to bring the power of the multipliers into the mainstream of European policy instruments.

3.2 Exposure Guarantees (EGs) and Exposure Exchange Agreements (EEAs)

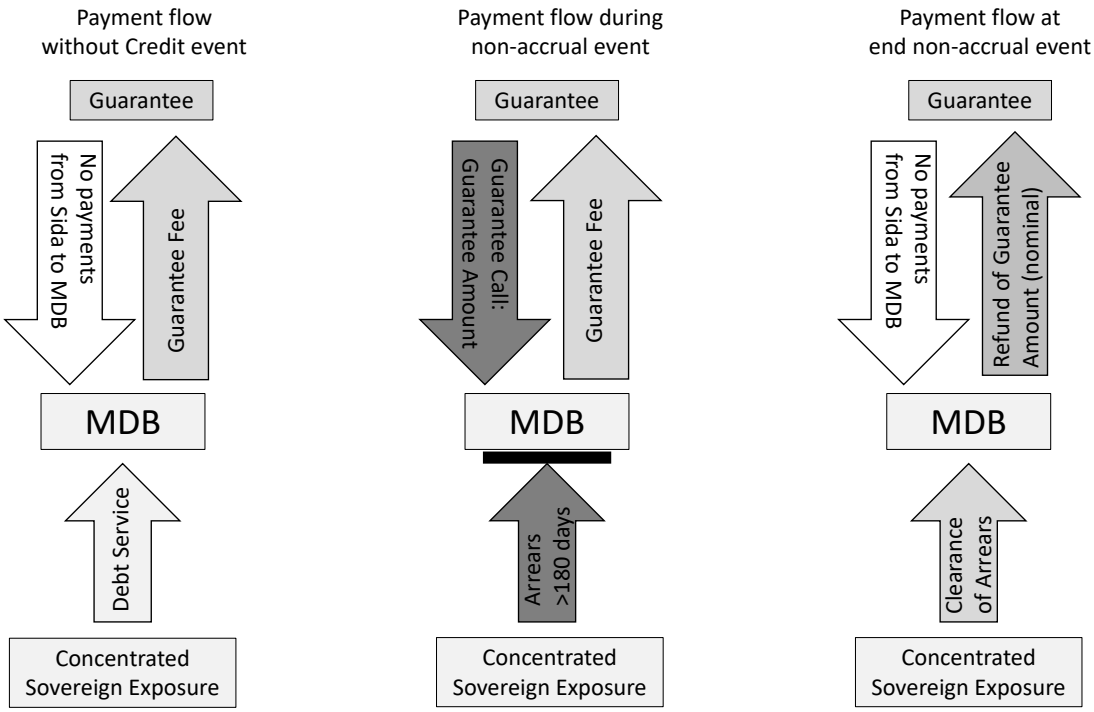
The Swedish International Development Cooperation Agency (SIDA) has made use of Guarantee Instruments for some years. In 2016, it entered a Risk Transfer arrangement with the Asian Development Bank[17] extending a guarantee to cover the principal repayments up to US$ 155 million of the ADB's sovereign loans to a single Asian country. Through this operation, the ADB aimed to free up capital for additional lending in priority areas. The ADB estimated that the Risk Transfer would increase its lending capacity by about US$ 50 million per year from 2016 to 2026, generating a total of US$ 500 million additional financing. The high (threefold) multiplier arises as the ADB (like other regional development banks) face concentrated risk exposures which are penalized by rating agencies. As a set of smaller loans to a set of more diversified borrowers then filled the freed lending space this explains the high multiplier in this case. This example illustrates how different risk appetites can be exploited as presumably SIDA was less concerned about the underlying risk, given the distribution of its own exposures, compared to how that risk is treated by the methodology of rating agencies for the ADB. In 2020, IDB and SIDA jointly developed a portfolio guarantee instrument, whereby SIDA issued a synthetic guarantee to backstop a concentrated exposure for the IDB,[18] aimed at supporting development in Latin America and the Caribbean. Under this Risk Transfer mechanism, SIDA provides a guarantee of up to US$ 100 million on a large concentrated sovereign exposure in the IDB's portfolio, allowing the bank to expand lending up to three times the amount of the guarantee, that is US$ 300 million, in other less concentrated countries.

The mechanics of this Exposure Guarantee (EG), which was influenced by the earlier Exposure Exchange Agreements (EEAs) among MDBs, are worth examining in more detail as the

[17] See ADB (2016).
[18] See IDB (2020).

instrument could provide a framework enabling wider participation and Risk Transfer on a larger scale. The structure is summarized in Figure 3.2.

Figure 3.2. Sovereign Guarantee Instrument



First, a guarantee is provided not for a single loan or project, but rather for a specified portion of the total exposure to a specific sovereign borrower on a pari passu basis. For instance, US$ 100 million of the MDB exposure to a particular country X. Second, payment under the guarantee is triggered by country X going into arrears (defined by the customary threshold of 180 days employed across MDBs), whereupon loans are subjected to special (non-accrual) treatment. Third, when the arrears are eventually repaid to the MDB (as expected), the payment received is then refunded to the guarantor.[19]

Under this mechanism, the MDB remains the lender of record, which makes it unnecessary to grant so-called "step-in rights" to the guarantor as is the practice for commercial guarantees. In the sovereign domain, step-in rights could undermine the principle of Preferred Creditor Treatment (PCT[20]), which is preserved under this structure. As a result, EGs of this nature can be issued for

[19] Historical experience suggests arrears are almost always repaid. See Cordella and Powell (2021).
[20] Or Preferred Creditor Status, as it is referred to by some. PCT is discussed in more detail below.

a relatively small fee reflecting the minimal and temporary arrears experienced by MDBs in their sovereign lending operations.

The guarantee does not only swap out the risk of the borrower for the risk of the guarantor but as the guarantee backstops a concentrated exposure on the MDBs' balance sheet, the capital relief provided further allows the MDB to increase lending to a portfolio of countries for which concentration is lower, for an amount that is a multiple of the guarantee face value.

EGs are simple structures that enable MDBs with limited geographical diversification opportunities to expand overall lending with a given capital base. The appeal of EGs goes back to their predecessor instrument, the EEA, jointly designed by the IBRD and the Regional Development Banks as a tool to manage concentration in their respective Sovereign Guaranteed exposures. Since 2015, a total of US$ 6 billion of exposure have been subject of EEAs, involving the IBRD, IDB, AfDB and ADB.

EEA transactions and their contribution to capital efficiency are described in Belhaj et al. (2017). The participating MDBs recognized each other's PCT and extremely low credit risk and issued reciprocal reinsurance for portfolios of equivalent risk, thus eliminating the need for the payment of guarantee fees through netting. Two credit pillars underlie this structure: i) the retention of the originating MDB as the lender of record and loan servicer and the approach of guaranteeing "Exposure" rather than individual loans; and ii) the fact that participating MDBs have equivalent creditworthiness, thus eliminating the need to factor counterparty risk into the transaction.

While the EEAs benefited from the policy support provided under the MDB Action Plan to Optimize Balance Sheets, there is limited room for their expansion, when compared to the overall statutory headroom of the MDB system. The number of existing MDBs is small, and borrowing shareholders expect that the regional MDBs should maintain the bulk of their credit exposure, direct and indirect, in their regions of operation. There may be more room for donor countries to enter EGs, but they may need to be targeted to specific donor risk appetites and development themes.

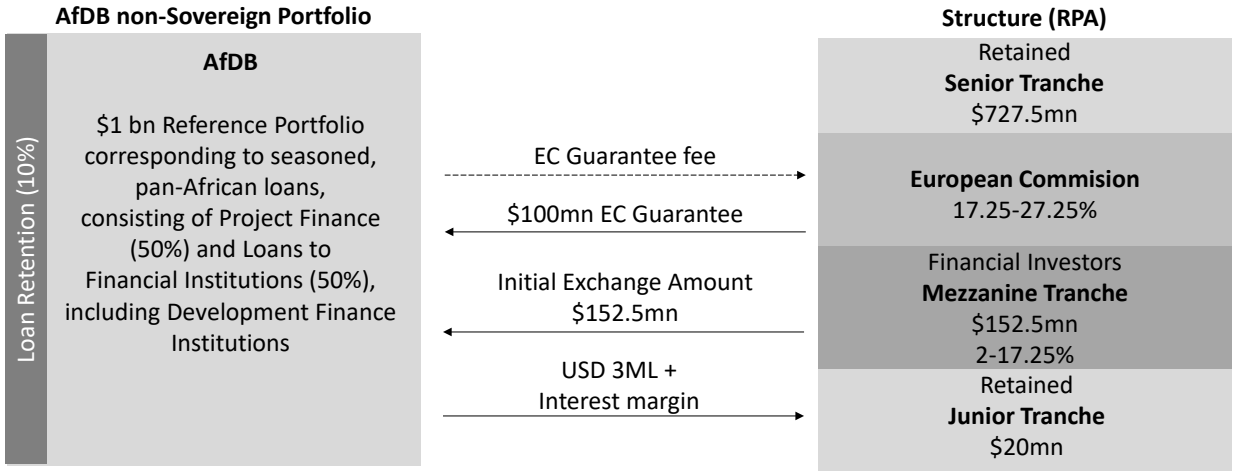
However, there may be considerable potential for private sector investors to act as guarantors, if i) the low credit risk of MDB loans is reflected in the pricing of the insurance provided, and ii) the guarantee fee can either be absorbed by the MDB or passed on.

3.3 Room2Run and the AfDB

In the autumn of 2018, the AfDB entered into an innovative Risk Transfer transaction under which it synthetically securitized US$ 1 billion of existing non-sovereign loans. Referred to as the Room2Run transaction, the deal involved shifting mezzanine credit risk to private investors, while additional credit protection was approved by the EC's European Fund for Sustainable Development in the form of a senior mezzanine guarantee.

Figure 3.3 displays the Room2Run securitization structure. In this transaction, two private investors, the International Infrastructure Finance Company II ("IIFC II"), a fund originally managed by the Mariner Investment Group (now managed by Newmarket Capital), and Africa50, provide mezzanine credit protection of US$ 152.5 million corresponding to the 2% to 17.25% tranche. IIFC II is the anchor investor, through the purchase of 80% of this tranche.

Figure 3.3. Room2Run Synthetic Securitization Transaction



Tranche	Size	Attach-Detach	Placed / Retained
Senior	$727.5mn	27.25%-100%	AfDB Retained
EC (Unfunded)	**$100mn**	**17.25%-27.25%**	**Expected Execution before 31 Dec 18**
Mezzanine (Funded)	**$152.5mn**	**2%-17.25%**	**Placed**
Junior	$20mn	0%-2%	AfDB Retained

Source: Mizuho (2018).

To mitigate any counterparty risk, the private investors were required to transfer the full notional amount of the protected tranches to AfDB. Additionally, in this structure the EC provides protection through an unfunded guarantee amounting to US$ 100 million (EUR-denominated), corresponding to the 17.25% to 27.25% tranche. AfDB retains the junior tranche (0% to 2%) and the senior tranche (27.25% to 100%). In exchange for mezzanine risk protection AfDB pays the investors a floating interest rate, plus a spread.

The reference portfolio of US$ 1 billion consisted of approximately 45 non-sovereign loans to entities in 16 African nations and 13 different sectors.[21] About half of the loans are to infrastructure project finance assets, with the other half to financial institutions. Through this transaction, AfDB aimed to achieve a reduction of at least 65% in the Risk Weighted Assets (RWAs) of the portfolio (see Mizuho, 2018).

Securitization based Risk Transfers like the Room2Run deal have the advantage that they efficiently shift diversified risk. In particular, because insurance is provided on a pool of loans, investors in mezzanine or more senior exposure benefit from diversification. The use of tranching makes it possible to match the risk involved in the different exposures to the risk appetite of the different investors. Thus, diversification and tranching mean that securitization offers greater efficiency and flexibility than traditional "single name" forms of credit protection such as guarantees on single counterparty exposures. In a similar way as for EFSI, a guarantee from a public sector entity, the European Commission, was necessary in order to complete the transaction.

3.4 Credit Insurance and Reinsurance

In parallel with its synthetic securitization, the AfDB also executed a US$ 500 million portfolio credit insurance transaction with the same dual objectives: i) to create headroom for more non-sovereign lending by freeing up capital from a rating agency perspective, and ii) to expand the pathways for commercial investors to support development. In addition, structuring both the synthetic securitization and the portfolio credit insurance transactions at the same time enabled the AfDB to compare the costs and benefits of these two approaches for Risk Transfer on partially overlapping underlying portfolios of loans and, given the highly bespoke nature of these markets, to get comfort on the relative value-for-money.

[21] PRI (2019).

The African Trade Insurance Agency (ATI) underwrote the entire credit insurance policy, and then reinsured most of the risk through the commercial reinsurance markets while retaining sufficient uncovered risk to ensure proper alignment of interests. Because ATI is an A-rated supranational insurer, under Standard and Poor's (S&P) RACF, the capital cost to AfDB of obtaining credit protection from ATI is quite small and, hence, the AfDB was able to reduce its S&P Risk Weighted Assets (RWA), compared with retaining uncovered exposure to the underlying portfolio, by 90%. This was significantly more than the S&P RWA reduction that the bank achieved through the synthetic securitization. However, it is also notable that the premium charged by ATI and its reinsurers was proportionately higher than the cost of the synthetic securitization.

The AfDB's experience in these transactions is typical in that banks seeking credit protection may at times find securitization-based Risk Transfers superior on cost and efficiency grounds while at other times solutions offers by the insurance market may be preferable. Pricing in the insurance market follows long-term cycles as insurer balance sheets and the risk appetite of investors in securitizations evolve over time. Being able to pursue the two avenues for Risk Transfer at different points in time is, therefore, advantageous.

To facilitate comparison of alternative approaches to Risk Transfer and assist pricing negotiations, the AfDB used an "efficiency ratio" to compare the relative capital reduction (the primary benefit) with the share of the interest margin on the underlying portfolio spent to transfer the risk (the primary cost). This tool enabled the AfDB to negotiate with the counterparties in both transactions to eventually achieve similar efficiency ratios above 1.5 times.

The AfDB's experience with both transactions demonstrated the viability of each approach for non-sovereign loan portfolios, the potential for scaling, and limitations associated with current rating agency methodologies for Risk Transfer instruments when applied to multilateral lending institutions. Both transactions also provide valuable lessons that could be applied to the sovereign loan portfolios of multilateral lending institutions to achieve further scale and capital efficiencies.

It is worth considering further the nature of multilateral insurers and the lessons that can be drawn for other MDBs. There are currently four SMIs: MIGA, ICIEC, ATI and Dhaman. The first three are members of wider MDB-led groups, specifically those of the IBRD, Islamic Development Bank (IsDB) and the AfDB, while Dhaman is an independent multilateral insurer. Table 3.1 provides data on these institutions.

The SMIs provide an interesting demonstration for MDBs that Risk Transfer can be pursued on a significant level without apparently diminishing PCT. The ratio of gross to net insurance appearing in Table 3.1 reflects the use that these institutions make of the reinsurance market. The four SMIs vary in the degree to which they focus on Trade Credit insurance (TCI) and Political Risk insurance (PRI). MIGA is specialized in PRI, ICIEC has a balance between TCI and PCI, while ATI and Dhaman are primarily focused on TCI. It is reported that MIGA and ICIEC have had few if any claims historically on their PRI in several decades of operations. Conversations with prominent re-insurers confirm that the PCT of SMIs is widely recognized by markets, which are willing to reinsure their exposures even in stress periods. The recognition of PCT by markets has enabled SMIs to be very successful in tapping private sector risk capacity.[22]

Table 3.1. Key Indicators for Specialized Multilateral Insurers

	ICIEC	MIGA	ATI	Dhaman
Shareholder's equity	298	1,320	349	488
Net exposure	893	8,295	1,074	n.a.
Gross exposure	3,352	23,327	6,449	n.a.
Gross exposure / Net exposure	375%	281%	599%	140%
Subscribed capital / Authorized capital	74.0%	95.0%	28.9%	n.a.
Paid-in capital / Subscribed capital	49.1%	19.1%	100.0%	92.6%
Shareholder's equity / Net exposure	33.4%	15.6%	32.5%	n.a.

Note: Values are expressed in USD millions and relate to end 2019.

4. Obstacles to MDB Risk Transfer

4.1 Clarifying the Implications of Sovereign Risk Transfer for PCT

An important element of the MDB business model is the willingness of Borrowing Member States (BMS)[23] to treat MDBs as preferred creditors, even though this status in general is not reflected in legally enforceable contracts.[24] The "de facto" seniority that MDBs (and other multilateral lenders

[22] The potential for insurance to play a role in development features prominently in the report Eminent Persons Group (2018).
[23] BMS (borrowing member states). Multilateral lending institutions are unique in that the countries that borrow from them are also their shareholders (member states).
[24] See Marta (1990) for a legal discussion of preferred creditor status and in relation to the International Monetary Fund.

like the IMF) enjoy on their sovereign lending is commonly referred to as Preferred Creditor Treatment (PCT).

Simply put, PCT means that MDBs may expect to be repaid even in the event of a debt restructuring for other creditors. Schlegl, Trebesch and Wright (2015), (2019), Cordella and Powell (2021), and Fitch Ratings (2020) confirm this seniority and the very low sovereign default and loss rates for MDBs.

Although PCT is not reflected in legal contracts, the Paris Club (the club of bilateral official lenders) explicitly exempts MDB sovereign loans from its "equal treatment clause" which applies to other creditors. Rating agencies recognize PCT (to a certain extent) and their methodologies for rating MDBs include a positive allowance for PCT relative to the rating treatment applied to commercial banks.[25] Bond markets, through high credit ratings or otherwise, also implicitly recognize PCT resulting in narrow spreads for MDB bonds. The favorable pricing enables MDBs to finance themselves cheaply and pass on the benefits of low interest rates to their borrowers.

PCT is particularly important during stress periods. Commercial lenders tend to act pro-cyclically, reducing lending volumes and requiring higher yields in the face of negative shocks to sovereign borrowers. MDBs in contrast act counter-cyclically, continuing to lend at low rates and long maturities even when market conditions are challenging (see, for example, Galindo and Panizza, 2018). Cordella and Powell (2021) develop a theoretical model demonstrating that, if MDBs follow certain norms, sovereigns will respect their PCT. Thus, a sustainable equilibrium or virtuous circle results.

It is important for MDBs that their PCT be maintained. In what follows, we review some doubts that have been raised about the possible impact of Risk Transfer on PCT and explain why we think correctly structured Risk Transfer should not threaten this status.

The first argument that risk transfer might weaken PCT relates to the scale of MDB lending. If risk transfer by MDBs were conducted on a large scale, the fraction of borrower country debt coming from preferred lenders might become dominant. It is often suggested that, if all a sovereign's external debt is preferred, then none will be. In other words, sovereigns should have

[25] For an outline of rating agency approaches to PCT, see Kotecha (2019).

some non-preferred obligations to enable the sovereign to differentiate between creditors in a stress event.[26]

In practice, however, for most countries, preferred lending remains a relatively small fraction of their total borrowing. For most middle-income countries, commercial borrowing far outstrips borrowing from preferred creditors. For low-income countries, bilateral and commercial borrowing combined tend to be greater than borrowing from preferred lenders. Furthermore, for these countries, long maturities, highly concessional terms and availability in stress periods mean that access to MDB lending is highly prized. These countries, therefore, perceive preferred lender relationships as extremely valuable and are motivated to prioritize servicing those debts.[27]

A second argument for why risk transfer could undermine PCT is that countries might selectively default on loans where the MDB has transferred the credit risk to a third party. While this type of behavior is possible, in practice it can be prevented by the way in which Risk Transfer is structured while also taking advantage of the automatic cross-default on each MDB's sovereign loans to a given country and the strict sanctions applied by the MDB in case of non-payment by the country on any of its loans to that MDB.[28] Because the MDB remains the lender of record and assuming all normal sanction policies are enforced, the borrowing country has no incentive to default to the MDB.

MDBs can further reduce the risk of inducing such (mis)behavior, by transferring credit risk on "exposure" to countries rather than individual loans. In addition, by setting a cap on the share of MDB risk exposure to any given country that can be transferred,[29] countries may be further encouraged to treat the MDB as preferred, to avoid hurting the credit rating of the MDB to which it is a shareholder.

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[26] Furthermore, Cordella and Powell (2021) argue that at some point there are limits to preferred lending volumes such that it remains in the interests of sovereign borrowers to repay, in order to maintain access to lending and be able to borrow in bad times.

[27] S&P reviewed the relationship between the share of MDB loans in sovereign debt against the probability of those countries defaulting on an MDBs. There was an inconclusive correlation between higher MDB debt shares and higher default rates to MDBs. As a consequence, S&P removed the proportion of preferred debt in total debt from its MDB rating criteria, noting that there was no evidence that PCT would be weakened by any reasonable increase in the share of preferred lending to a country.

[28] PCT can also be reinforced by cross-sanctions among MDBs. For example, the IMF policy is to suspend new lending to countries that are in arrears to an MDB. It may be noted that the recent Covid-19 crisis G-20 Debt Service Suspension Initiative (DSSI) and Common Framework excluded MDB debt from any debt service deferral or restructuring.

[29] The minimum risk retention ratio is principally designed to avoid the risk of moral hazard and protect the sellers of credit protection from possible disincentives for MDB to seek to maximize recoveries on defaulted loans.

It is worth also noting that any potentially harmful effects on PCT can be mitigated, if the credit risks are transferred to another preferred creditor rather than a non-preferred counterparty such as a commercial insurer or a bilateral development agency. The sovereign exposure EEA between the IBRD, IDB, and AfDB is an example of synthetic sovereign Risk Transfer where both the sellers and buyers of risk protection are preferred creditors.

However, this observation overlooks the fact that EEA's have been successfully negotiated between regional development banks that rely on each other's relationship to borrowing countries, as the key source of PCT. The PCT that drives the low default rates on MDB loans is the relationship between the original lender and the borrower. It does not rely on the relationship between the borrowing country and the Risk Transfer counterparty. Whether that counterparty is a preferred creditor or not is irrelevant from the perspective of the borrowing country.[30]

A further argument for how risk transfer could affect PCT is that the nature of the protection providers may be important to some stakeholders in the event of a sovereign default and restructuring. For example, the Paris Club might be less willing to exempt MDB loans from the equal treatment clause applied in restructurings if the MDB has transferred part of the risk to a non-preferred counterparty such as a creditor insurer or a commercial guarantor.

There is no evidence that the Paris Club could or would make this distinction, however. Risk transfer is synthetic and the MDB remains the lender of record for all of its loans to the country in question. If properly structured, the Risk Transfer instrument would not be part of any official loan agreements and would not be linked to any specific loan.

Even if the Paris Club wished to make a distinction between risks held on MDB balance sheets and those transferred to a third party (which it might then wish not to exempt from equal treatment), it would be extremely challenging to do so. Furthermore, since the Paris Club is made up of countries that are the primary shareholders of the major MDBs, and these countries are the very same ones advocating for MDB balance sheet optimization to boost MDB lending, applying such a distinction would appear counterproductive.

[30] A consortium of donor countries led by the United Kingdom has proposed the creation of an education-focused MDB sovereign loan Risk Transfer counterparty called IFFED. To promote additional lending for education, IFFED will provide synthetic risk protection to accredited MDBs covering their sovereign loans for education. Its sponsors argue that because IFFED is a "quasi-MDB" itself, providing risk cover on sovereign loans would not impact MDB PCT.

There is potential for MDBs to exploit Risk Transfer to private counterparties for sovereign lending to boost lending given current MDB capital levels. While Risk Transfer may imply a cost in the form of a risk premium, given the minimal actual loss rates on MDB loans, the risk premium required should be very low. Further analysis of MDB loan performance, aided by comprehensive and standardized data on loan performance, may allow for a wider understanding of the risks bringing in an expanded investor base. Compressed pricing would make Risk Transfer more attractive and allow MDBs to lend more with current levels of capital. MDB credit performance statistics from pooled risk databases such as GEMS[31] would provide an objective basis to negotiate competitive pricing for Risk Transfer transactions.

4.2 Risk Transfer in Rating Agency Methodologies

In the case of single-name Risk Transfer, the core approach adopted by rating agencies is the substitution principle. The rating of the exposure to the credit risk that is covered is replaced in the rating agency assessment by the higher rating of guarantor. This approach is typically highly conservative because, in fact, both the covered exposure and the insurer have to default for the MDB that has obtained the insurance to experience a loss. Rather than recognizing the "double default" aspect of the risk, the rating agencies assume that risk faced by the MDB is simply that of a default by the insurer.

In the case of basket credit insurance or securitization, a more complex treatment is required. Typically, Risk Transfer transactions such as the Juncker Plan or the Room2Run deal involve the MDB retaining some tranched exposure to pools of exposure while disposing of others. The retained tranched exposures are treated by the rating agencies as equivalent to holdings of securitizations that have been bought in the market. The agency evaluates the rating of the retained tranches and then deduces risk weights from these ratings.

The methodology that the agencies apply to securitization tranches then becomes a crucial constraint on the efficiency of the Risk Transfer. MDBs frequently retain the first loss tranche, so the full recognition of PCT for a sovereign claim and a high rating for a claim on a private borrower is critical, as that then places a lower bound on the ratings of the upper tranches.

[31] The Global Emerging Markets (GEMs) Risk Database Consortium was established by MDBs and DFIs in 2009 to pool credit risk data on their sovereign and non-sovereign loans with the objective of producing robust statistics on the credit performance of these asset classes.

Given the large size of the Juncker Plan guarantee, a specific approach was warranted for calculating the capital requirements of the EIB. Under their Risk-Adjusted Capital Framework (RAC), S&P explicitly warrants a lower risk weight for exposures benefiting from a first-loss guarantee from the EU, although it considers these exposures to be "riskier than the average low credit risk embedded in EIB's non-covered portfolio.[32] Moody's incorporates credit enhancements in the form of an uplift of the EIB's development assets credit quality, under their capital adequacy score.[33] Fitch appears to incorporate enhancements primarily through the assessment of the business profile.[34]

For the Room2Run synthetic securitization, initial discussions with S&P focused on how the agency's standard methodology for assessing securitizations could be applied to a transaction involving AfDB's non-sovereign portfolio. The outcome of simulations indicated that the risk parameters used in these models were calibrated for developed markets and could not be meaningfully applied to AfDB's portfolio.

As a result, S&P developed an alternative approach based on its RAC framework to assess the capital reduction benefits of synthetic securitizations for MDBs. Although this alternative approach demonstrated significant capital reduction benefits, it still appears to understate the risk reduction power of these instruments for MDBs. Further refinement of the models and parameters used to calibrate the models would enhance the attractiveness of securitization or structure insurance Risk Transfers for MDBs.

5. Transferring Risk to Lend More

5.1 Numerical Examples of Risk Transfers

The scope for increased MDB lending capacity through Risk Transfer may be demonstrated through numerical examples. This section shows, through analyzing synthetic securitizations by a hypothetical MDB, how capital may be freed up and lending expanded.

Such calculations are also helpful in identifying where external capital requirements constrain Risk Transfer in ways that appear too conservative. The analysis provided here of

[32] http://www.eib.org/attachments/fi/external/sp_rating_report.pdf
[33] https://www.eib.org/en/investor-relations/index.htm
[34] http://www.eib.org/attachments/fi/external/fitch-eib-update.pdf

securitization-based risk transfers may be seen as the starting point for a wider discussion about how Risk Transfer instruments are treated by rating agencies.

To develop numerical examples, we consider a hypothetical MDB with Development Related Assets in Asia. Data for the MDB's portfolio are constructed using publicly available information about actual MDBs.[35]

We study cases in which the risk associated with sub-portfolios of the hypothetical MDB's loans is transferred through synthetic securitizations. The securitizations used to transfer risk involve the MDB retaining i) in our case, a 2% first loss tranche; and ii) the senior tranche, with the remaining risk being borne by outside organizations.[36]

Risk transfer will be favorable to an MDB if it can economize on the capital required by the rating agencies to achieve a high rating. This in turn depends on how agencies rate the retained tranches. In the example considered here, the MDB can only economize on capital through a risk transfer transaction if the capital required for holding the junior and senior tranches (which depend on the rating of the senior tranche) is less than the capital required for holding the original pool of loans.[37]

S&P evaluates the capital adequacy of an MDB using calculations that depend on the detailed composition of the MDB's portfolio. The formulae employed, called the Risk Adjusted Capital Framework (RACF), generates a ratio (the Risk Adjusted Capital (RAC) ratio), equal to Capital Resources divided by Adjusted Risk Weighted Assets (RWAs). Here, Adjusted RWAs are obtained by calculating (unadjusted) RWAs as a weighted sum of exposure par values (in which the Risk Weights (RWs) are higher for riskier exposures) and then adjusting for concentration and PCT.

In the case of S&P's assessment of capital adequacy, an MDB achieves an increase in its RAC ratio through a Risk Transfer transaction if the Adjusted RWAs implied by the retained

[35] The country breakdown of sovereign lending is assumed to match the publicly known distribution of combined lending in Asia by IBRD and IDA. Table A1 in Appendix 1 shows the hypothetical exposure distribution by country. The country breakdown of corporate lending is consistent with the country distribution of EBRD's outstanding loans, except that the countries in the EBRD's portfolio are replaced with Asian countries. The Appendix provides more information on how the portfolio is constructed.

[36] Taking an analogous tranching as in Room2Run, the mezzanine tranche from 2% to 27.25% is assumed to be collateralized or held by an official entity rated AA- and above (so that the S&P Risk Weight applied after securitization is 3%).

[37] For ease of exposition, we focus on the capital assessments provided by S&P. Much of the analysis may be relevant for Moody's and Fitch securitization methodologies, although it should be noted that there are differences in the indicators employed. Furthermore, we abstract from the income effects of Risk Transfers.

tranches post-transaction are less than the Adjusted RWAs for the securitization-pool loans that it holds pre-transaction.[38]

5.2 Tranche Ratings

In this section, we evaluate the rating of the senior tranche, that the MDB is assumed to retain. As just explained, the rating of the retained senior tranche strongly affects whether the Risk Transfer is capital efficient for the MDB. We consider two different S&P approaches for rating a retained senior tranche of a Risk Transfer deal.

1. S&P's usual securitization rating methodology based on its CDO Evaluator 8.1 model. In this case, a Monte Carlo calculation is employed based on standard parameters (probability of default, PD, and Loss Given Default, LGD) that are provided by S&P itself, but which depend on the nature of the pool loans.
2. An approach developed by S&P at the request of AfDB and its counterparties for the purpose of rating the Room2Run deal described in Section 2. More details are provided below.

Below, we perform S&P RAC calculations for the hypothetical MDB before and after the synthetic securitization and using (for the retained senior tranche) the two methodologies described above and under different assumptions about the reference portfolio for the transactions.

We start by applying approach 1 in the above list. Tranche ratings are obtained by comparing the attachment points of the tranches (i.e., the point at which the tranche starts to bear losses) with stressed loss rates, termed Scenario Loss Rates (SLRs), generated using the CDO Evaluator Monte Carlo engine.

[38] It might be thought that required capital would *have* to be lower after a transaction since part of the portfolio risk has certainly been transferred. However, the relatively conservative capital treatment of securitization positions is not designed to be "capital neutral" (i.e., such that the sum of capital for all the tranches equals the capital implied by the pool).

Table 5.1. SLR from S&P's CDO Evaluator 8.1

	Corporate Exposures					
Liability Rating	Corp Senior Secured	Corp Unsecured	Project Finance Senior Secured	Project Finance Unsecured	Corp Unsecured (Longer Maturities)	Sovereign
AAA	42.23%	45.56%	42.21%	45.59%	54.56%	37.30%
AA+	36.34%	39.36%	36.34%	39.30%	47.68%	31.21%
AA	34.27%	37.13%	34.31%	37.17%	45.19%	29.10%
AA-	31.92%	34.57%	31.94%	34.59%	42.80%	26.64%
A+	27.53%	32.21%	27.62%	32.26%	40.22%	24.49%
A	26.53%	31.02%	26.59%	31.06%	38.95%	23.40%
A-	24.68%	28.88%	24.70%	28.89%	36.41%	21.34%
BBB+	22.79%	26.75%	22.78%	26.76%	33.74%	17.81%
BBB	21.79%	25.60%	21.78%	25.58%	32.28%	16.78%
BBB-	19.13%	22.52%	19.13%	22.51%	28.93%	14.13%
BB+	16.87%	19.95%	16.89%	19.97%	25.79%	11.91%
BB	15.51%	18.35%	15.53%	18.39%	23.70%	10.61%
BB-	13.90%	16.49%	13.91%	16.50%	21.73%	9.12%
B+	12.00%	14.54%	12.00%	14.55%	19.41%	7.66%
B	10.84%	13.15%	10.83%	13.14%	17.66%	6.46%
B-	9.77%	11.88%	9.76%	11.87%	16.37%	5.35%
CCC+	8.74%	10.66%	8.73%	10.65%	15.04%	4.26%
CCC	7.71%	9.44%	7.71%	9.44%	13.62%	3.28%
CCC-	6.93%	8.49%	6.94%	8.50%	12.39%	2.62%

Note: The senior retained tranche rating cut-off for attachment point of 27.25% is highlighted.

Table 5.1 shows the SLRs obtained from the CDO Evaluator for the reference portfolio constructed for the purpose of this study, under different assumptions about the asset type and recovery rates. We consider reference portfolios made up of the following loan instruments:[39]

1. Corporate exposure recovery rate is assumed to be Corporate Senior Secured.
2. Corporate exposure recovery rate is assumed to be Corporate Unsecured.
3. Corporate exposures recovery rate is assumed to be Project Finance[40] (PF) Senior Secured.
4. The corporate exposures recovery rate is assumed to be PF Unsecured.

[39] Other CDO recovery assumptions not considered here are: Corp:SenSec1LienCovLiteLoan, Corp:SubLoan, PF:SenSec1LienCovLiteLoan and PF:SubLoan.

[40] Based on CDO evaluator asset types, only exposures within the sectors Energy, Industrials, Materials, Telecommunication Services are assigned project finance recoveries. Exposures with sector Utilities, Health Care and Financials are assigned corporate recoveries.

5. The same assumption as in 2 but with longer maturities (the maturities range between 3-13 years instead of 0-10 years).
6. Sovereign exposures.

For different CDO loan instrument assumptions, the senior tranche ratings (derived from CDO Evaluator SLR's), corresponding to an attachment point of 27.25%, are highlighted in Table 5.1.

Table 5.2. S&P Portfolio Loss Rates

	Adjusted				Adjusted		
Rating	RAC	PLR Corp	PLR Sov	Rating	RAC	PLR Corp	PLR Sov
aaa	24.3%	58.3%	29.4%	bbb	4.1%	14.3%	6.9%
aa+	19.4%	47.7%	24.0%	bbb-	3.3%	12.5%	6.0%
aa	15.6%	39.3%	19.7%	bb+	2.6%	11.1%	5.3%
aa-	12.5%	32.5%	16.2%	bb	2.1%	10.0%	4.7%
a+	10.0%	27.1%	13.5%	bb-	1.7%	9.0%	4.2%
a	8.0%	22.8%	11.2%	b+	1.4%	8.3%	3.8%
a-	6.4%	19.3%	9.5%	b	1.1%	7.7%	3.5%
bbb+	5.1%	16.6%	8.0%	b-	0.9%	7.3%	3.3%

Note: The senior retained tranche rating cut-off for attachment point of 27.25% is highlighted.

The second approach we consider (approach 2 in the above list) was devised by S&P for rating the senior tranche in the Room2Run deal (Standard & Poor's. 2018a). In this case, S&P calculates a stressed level of losses, based on the pool RACF RWAs multiplied by 8%, plus an adjustment for Expected Losses. The stressed loss is referred to under the RACF methodology as the Portfolio Loss Rate (PLR). If the protection provided by more junior tranches exceeds the PLR level of losses, S&P assigns a single A rating to the senior tranche.[41] In Table 5.2, we present

[41] In following this approach, the agency is effectively treating the reference portfolio as a mini-MDB, calculating the threshold level to which such an MDB might issue debt while still retaining a single A rating. It is reasonably straightforward to generalize this "mini-MDB" approach so as to obtain a set of loss thresholds corresponding to ratings other than single A (although S&P has so far only endorsed this approach for inferring a single A rating).

Portfolio Loss Rates (PLRs) corresponding to different letter-grade ratings for the two reference portfolios.[42,43]

SLR-based grades are comparable to actual ratings (even though the rating agency processes require additional steps in order to determine the final rating). When PLR calculations are performed, one may deduce ratings-specific stresses from the threshold percentages employed in the MLI RAC calculations (with an adjustment for ELs). S&P themselves only permit this approach in the case of the single-A threshold of 8%, but it is possible to extend the method to other rating thresholds as we do in this paper.

As in Table 5.1, the implied ratings in Table 5.2 are highlighted in grey. In the case of sovereign loans, a 'aa+' score is implied while, for corporate loans a 'a+' score is obtained. Recall that currently, S&P's criteria (Standard & Poor's. 2018a) only allows this approach to be used to assign a tranche rating of A.

5.3 The Impact on the Hypothetical MDB

We now turn to calculations of the impact of different Risk Transfer transactions on the capital position of the MDB. We will consider two experiments. The first is to transfer risk on a $1 billion reference portfolio of existing loans. The second experiment is to issue $1.25 billion of new loans and to transfer risk on $1 billion.

[42] The calculations in Table 5.2 are performed using S&P's parameters. To get the PLR by rating, the threshold RAC ratio corresponding to different ratings is inferred from S&P's tables for determining Stand-Alone Credit Profile (SACP) and capital adequacy. In particular, for each SACP, we determine the threshold financial risk profile and therefore the capital adequacy score and therefore the adjusted RAC ratio. Since we may end up with the same threshold adjusted RAC ratio for different SACPs, we regress the SACPs and the log of adjusted RAC ratio to get strictly monotonic threshold RAC ratios for different ratings. We then shift the fitted RAC ratios so that a rating of "a" corresponds to a threshold RAC of 8%. These are then used to determine the unexpected losses corresponding to different ratings.

[43] The PLR-based letter grades ratings may be compared to the SLR-based letter grades ratings in Table 5.1. For corporates, the CDO Evaluator SLRs indicate a grade of A, BBB+ or BB+ depending on the assumption of the loan type included in the portfolio (which, in turn, are regarded by S&P as implying different recovery rates). On the other hand, the S&P corporate PLRs indicate a letter grade of 'a+' if the rating is not restricted to 'a', or 'a' if restricted. For sovereigns, the CDO Evaluator SLRs indicate a letter grade of 'aa-' and the S&P RACF PLRs indicate a grade of 'aa+' if unrestricted or 'a' otherwise.

Table 5.3. S&P's Securitization Risk Weights

Tranche Rating	RW (%)	Tranche Rating	RW (%)	Tranche Rating	RW (%)	Tranche Rating	RW (%)	Tranche Rating	RW (%)
AAA	20	A	50	BB+	451	B-	1150	C	1250
AA+	25	A-	67	BB	626	CCC+	1250	SD	1250
AA	30	BBB+	83	BB-	767	CCC	1250	D	1250
AA-	37	BBB	100	B+	909	CCC-	1250	NR	1250
A+	43	BBB-	275	B	1050	CC	1250		

Source S&P (2017).
Note: For a missing rating RW, the RW is estimated by linear interpolation.

Table 5.3 shows S&P's RWs for securitization tranches of different ratings. These RWs are used for calculating Unadjusted RWAs.

Table 5.4 shows the reduction in RWA achieved before and after performing a Risk Transfer via synthetic securitization for different assumptions on the reference portfolio. Panel a) presents the RWA reduction that results when the ratings employed are those implied by SLRs from S&P's CDO Evaluator. Panel b) shows the RWA reductions that occur when ratings implied by S&P's RACF PLR approach are used.

Table 5.4. Capital Reduction Achieved

Panel a) Using S&P CDO Evaluator SLR Ratings

Reference portfolio assumption	Senior Tranche Rating	RWA before Securitization ($ mil.)	RWA after Securitization ($ mil.)	% Change in RWA
Corp Senior Secured	A	2,182	621	-72%
Corp Unsecured	BBB+	2,182	861	-61%
Project Finance Senior Secured	A	2,182	621	-72%
Project Finance Unsecured	BBB+	2,182	861	-61%
Corp Unsecured (Longer Maturities)	BB+	2,182	3,539	62%
Sovereign	AA-	1,118	527	-53%

Panel b) Using S&P RACF PLR Ratings

Reference portfolio assumption	Senior Tranche Rating	RWA before Securitization ($ mil.)	RWA after Securitization ($ mil.)	% Change in RWA
Corporates	A+	2,182	570	-74%
Corporates (constrained to A)	A	2,182	621	-72%
Sovereign	AA+	1,118	439	-61%
Sovereign (constrained to A)	A	1,118	621	-44%

Note: The cases "constrained to A" refers to the case when the S&P RACF PLR approach is restricted to only assigning an A rating to the senior tranche. The table shows S&P 'unadjusted' Risk Weighted Assets (RWAs). In the S&P methodology, unadjusted RWAs are calculated for each exposure, and then their sum is adjusted for concentration and Preferred Credit Treatment (PCT).

In all cases, except when considering corporate unsecured with longer maturities, the RWAs after transfer are lower than those pre-transaction. For corporate unsecured loans with longer maturities, the RWA after securitization increases due to a lower rating of BB+ for the senior retained tranche. Using the CDO Evaluator SLR approach assuming a securitization of $ 1 billion, capital reductions of up to 72% and 53% in Unadjusted RWAs can be achieved for corporate and sovereign securitizations, respectively. Using the RACF PLR approach, these are 74% and 61% respectively if the senior tranche rating is not restricted to A and 72% and 44%, respectively, if the rating is restricted to A.

Note that the results reported in Table 5.4 consist of Unadjusted RWAs. To see the full impact on the MDB of the transactions, one must examine not just Unadjusted RWAs for the loans and retained tranches but the impact on the Adjusted RWAs for the bank's full portfolio. These Adjusted RWAs allow for concentration and PCT adjustments.

Table 5.5 shows the impact on the total adjusted RWA of the MDB for different assumptions regarding the reference portfolio. Panel a) shows the results when S&P CDO Evaluator ratings are used. Panel b) shows the results when S&P PLR ratings are used. The total adjusted RWAs are higher when corporate exposures unsecured loans with longer maturities are considered.

Table 5.5 also shows the additional lending headroom available resulting from the reduction in the total adjusted RWA after securitization. The additional lending has been calculated based on average adjusted RWs of the corporate and sovereign reference portfolios for the corporate and sovereign securitizations respectively.

Table 5.5. The Effect of Securitizing US$1 Billion of the MDB's Existing Portfolio

Panel a) Using S&P CDO Evaluator SLR Ratings

Reference portfolio assumption	Senior Tranche Rating	Total Adjusted RWA ($ mil.)	Total Unadjusted RWA ($ mil.)	Lending Headroom ($ mil.)	Adjusted RAC Ratio	Change in Adjusted RAC Ratio
Base Case		67,073	50,142		32.80%	
Corp Senior Secured	A	65,752	48,776	605	33.46%	0.66%
Corp Unsecured	BBB+	66,037	49,016	475	33.31%	0.51%
Project Finance Senior Secured	A	65,752	48,776	605	33.46%	0.66%
Project Finance Unsecured	BBB+	66,037	49,016	475	33.31%	0.51%
Corp Unsecured (Longer Maturities)	BB+	69,256	51,693	-	31.77%	-1.03%
Sovereign	AA-	66,695	49,715	338	32.99%	0.19%

Panel b) Using S&P RACF PLR Ratings

Reference portfolio assumption	Senior Tranche Rating	Total Adjusted RWA ($ mil.)	Total Unadjusted RWA ($ mil.)	Lending Headroom ($ mil.)	Adjusted RAC Ratio	Change in Adjusted RAC Ratio
Base Case		67,073	50,142		32.80%	
Corporates	A+	65,692	48,725	633	33.49%	0.69%
Corporates (constrained to A)	A	65,752	48,776	605	33.46%	0.66%
Sovereign	AA+	66,592	49,628	431	33.04%	0.24%
Sovereign (constrained to A)	A	66,808	49,810	238	32.93%	0.13%

Using the CDO SLR approach, additional lending headroom of up to US$ 605 million and US$ 338 million can be generated from corporate and sovereign securitizations, respectively. Using the RACF PLR approach, the lending headroom created is up to US$ 633 million and US$ 431 million for corporate and sovereign securitization, respectively, when the senior tranche rating is not restricted to A.

In Table 5.6, we perform a different experiment. Specifically, we compare the impact of adding US$ 1.25 billion of new loans directly, versus adding US$ 1.25 billion and securitizing US$1 billion of that amount. The new loans are assumed to be a scaled up (by 1.25) version of the reference portfolio employed in the first experiment (and described in the Appendix).

Table 5.6. Impact of Direct Lending vs Securitization on Expanding Portfolio

Panel a) Using S&P CDO Evaluator SLR Ratings

Reference portfolio assumption	Senior Tranche Rating	Total Adjusted RWA (m. $)	Change in Adjusted RWA (m. $)	Percent gain versus direct lending	Adjusted RAC Ratio	Change in Adjusted RAC Ratio
Base Case		67,073			32.80%	
Direct lending to corporates		68,880	1,808		31.94%	-0.86%
Securitize Corp Senior Secured	A	68,103	1,031	-43	32.30%	-0.50%
Securitize Corp Unsecured	BBB+	68,389	1,316	-27	32.17%	-0.63%
Securitize Project Finance Senior Secured	A	68,103	1,031	-43	32.30%	-0.50%
Securitize Project Finance Unsecured	BBB+	68,389	1,316	-27	32.17%	-0.63%
Securitize Corp Unsecured (Longer Maturities)	BB+	71,615	4,543	151	30.72%	-2.08%
Direct lending to sovereigns		68,259	1,187		32.23%	-0.57%
Securitize sovereign	AA-	67,872	800	-33	32.41%	-0.39%

Panel b) Using S&P RACF PLR Ratings

Reference portfolio assumption	Senior Tranche Rating	Total Adjusted RWA (m. $)	Change in Adjusted RWA (m. $)	Percent gain versus direct lending	Adjusted RAC Ratio	Change in Adjusted RAC Ratio
Base Case		67,073			32.80%	
Direct lending to corporates		68,880	1,808		31.94%	-0.86%
Securitize Corporates	A+	68,043	970	-46	32.33%	-0.47%
Securitize Corporates (constrained to A)	A	68,103	1,031	-43	32.30%	-0.50%
Direct lending to sovereigns		68,259	1,187		32.23%	-0.57%
Securitize Sovereign	AA+	67,769	696	-41	32.46%	-0.34%
Securitize Sovereign (constrained to A)	A	67,985	912	-23	32.36%	-0.44%

Note: The table shows S&P 'adjusted' Risk Weighted Assets (RWAs). In the S&P methodology, unadjusted RWAs are calculated for each exposure, and then their sum is adjusted for concentration and Preferred Credit Treatment (PCT). The final RAC ratio of an MDB equals the ratio of capital resources to Adjusted RWAs.

Panel a) shows the results when ratings from the CDO SLR are used. Panel b) shows the results when ratings from the S&P RACF PLR are used. The first, second and third blocks shows the results for base case, corporate exposures and sovereign exposures, respectively. In the case of unsecured corporate loans with longer maturities, the adjusted RAC ratio is lower after the securitization than it would be with direct lending. In the case of sovereign lending, the adjusted RAC ratio is higher after securitization compared to direct lending. For the sample reference portfolios considered, the percentage gain from securitization as compared to direct lending is higher for the corporates (except for the longer maturity case) than for the sovereigns.

When the CDO SLR ratings are used, the total adjusted RWA of the MDB portfolio can be reduced by up to 43% and 33% for corporate and sovereign securitization respectively. When the

RACF PLR ratings are used, the total adjusted RWA of the MDB can be reduced by 46% and 41% for corporate and sovereign securitizations, respectively, when the senior tranche rating is not constrained to A.

Overall, for securitization of a corporate reference portfolio with a weighted-average rating of BB-, the S&P RACF PLR approach results in greater RWA reduction and lending headroom. For securitization of a sovereign reference portfolio with a weighted-average rating of BB+, the S&P RACF PLR approach gives more favorable results only when the rating assigned to the senior tranche is not constrained to A. Otherwise, the S&P CDO SLR approach is more favorable for sovereign securitization. These results rely on a simulation methodology and are based on reference portfolios. Naturally different portfolios may lead to higher or lower impacts for MDBs.

A first conclusion is that significant increases in lending capacity can be generated by engaging in securitization. The gains available depend on the approach taken and the class of loans involved. For example, for a given impact on the RAC ratio, $1 billion of direct sovereign lending could be replaced with $ 0.57/0.39 = 1.5 bn if the lending were securitized[44] (and the CDO Evaluator approach were applied in evaluating the rating).[45] For $1 billion of direct lending to corporates, a volume of $ 0.86/0.50 = 1.7 billion of lending could be sustained if securitization were employed.

Second, the gains just described could be significantly greater if the low-risk, preferred nature of MDB loans were explicitly factored into the securitization rating methodologies. This could lead to a significantly more favorable treatment for sovereign loans as well as an improvement in the treatment of corporate lending. The fact that the true credit performance of MDB loans is not reflected in rating agency approaches to securitization results in a sizeable reduction in the benefit of Risk Transfer by an MDB that requires certain ratings for retained senior tranches.

The available statistics regarding the credit performance of MDB loans demonstrate that sovereign loans have substantially lower LGDs and significantly lower PDs than equivalent loans held by private sector lenders. Even for corporate loans, the credit performance of MDB loans

[44] Note that in this example $ 800 million would be securitized since, in our example calculation, $1.25 billion of loans are made and just $ 1 billion is securitized.

[45] This calculation is equivalent to taking the ratio of the change in total Adjusted RWAs that results from engaging in a given volume of direct lending to the change in Adjusted RWAs generated by lending the same volume while transferring risk via securitization as previously described.

appears to be significantly better than commercial bank loans. If these differences were fully recognized by the rating agencies, the capital relief MDBs obtain would be larger in size and the scope for Risk Transfer by MDBs would be substantially greater.

A third point is that certain aspects of rating agency methodologies could be extended in a reasonable way without substantially altering the current approaches so as to facilitate Risk Transfer. An example is the possibility developed in this section of extending S&P's "mini-MDB" approach to rating senior tranches to permit its application to rating grades other than single A.

A fourth point is that securitization activity is constrained not just by capital but also by pricing and income considerations. MDB loans, particularly to sovereign borrowers, have low spreads, which is appropriate given their superior credit performance. For there to be enough spread income to satisfy tranche holders in a Risk Transfer deal, however, tranche holders either have to be willing to accept concessional terms (which reduces the set of possible investors to donor institutions) or they must be convinced of the low risk nature of MDB loans.

6. Conclusion

Making substantial progress towards achieving the UN's ambitious Sustainable Development Goals (SDGs) will almost certainly require major increases in MDB lending. MDBs, however, are constrained by their business model to maintain high ratings. High ratings allow MDBs to issue substantial volumes of bonds on international markets and pass on low interest rates to their borrowers. Substantial progress towards the SDGs will necessitate bolstering MDB capital though the complementary policies of capital increases and Risk Transfer. The latter will ensure that new capital made available is deployed in a fully efficient manner.

This paper outlines a set of Risk Transfer techniques that have the potential to expand MDB lending for a given quantum of capital. Risk transfer has already been employed by MDBs. Examples include transactions among European multilateral institutions, Exposure Exchange Agreements, single name Exposure Guarantees and basket guarantees using securitization and structured insurance approaches, and by the Specialized Multilateral Insurers. These transactions illustrate the potential of these techniques, but there are three categories of obstacles that severely limit private sector take-up and therefore the scope for the further use of these techniques:

1. A lack of clarity remains around the treatment that the Paris Club would adopt for sovereign restructurings if an MDB has transferred a portion of the risk in claims on a sovereign to non-preferred creditors. The track record of risk transfer transactions has been gradually building up over the past decade, and a formal recognition by the Paris Club would go a long way towards enhancing the potential investor base. Clear statements by financial regulators highlighting how regulated entities should consider preferred loans on their balance sheet would also be beneficial.
2. Current rating agency methodologies are not conducive to Risk Transfer by MDBs and strong arguments may be made in favor of change. In particular, securitization rating methodologies do not take fully into account the superior credit performance of MDB loans. The agencies do recognize PCT to some degree when they rate MDBs, but there is insufficient reflection of PCT in the securitization rating methodologies, relevant in evaluating the retained senior tranches of Risk Transfer transactions.
3. Familiarity with the MDB loan "asset class" is far from widespread. Many investors would be surprised by the very low LGDs of MDB sovereign loans. The credit performance of MDB corporate loans also appears to be superior to equivalent commercial bank loans. Greater transparency for MDB loan performance, such as through the publication of comprehensive risk statistics, could assist. One obvious approach would be to fully resource the GEMs consortium and enable it to expand and accelerate the publication of the risk statistics that MDBs use to pool their credit performance data.

We suggest that removing the above three obstacles should be a priority on the agenda of policymakers involved in the discussions regarding how to boost development finance and how to enhance the international financial architecture. Unblocking these issues would facilitate the growth of MDB Risk Transfer and create more headroom for development lending. Unfortunately, there is something of a chicken and egg problem. Rating agencies may not change their policies until they have seen a greater track record of transactions, but this may not be forthcoming as current policies reduce the attractiveness of some types of transactions for MDBs. MDBs may therefore need to pursue operations that are not strictly optimal for their balance sheets today to

ensure rating agencies have sufficient information to refine their policies to allow for operations that would be a more efficient use of capital tomorrow.

To illustrate the potential for successful Risk Transfers transactions, this paper provides a set of the numerical examples illustrating that risk transfer could permit MDBs to economize significantly on capital, permitting larger lending volumes with a given quantum of capital. MDBs could then increase origination for current capital levels by transferring the risk of securitizable portfolios off their balance sheets. The qualification "securitizable portfolios" is important as only a portion of MDB balance sheets would meet the risk appetite of investors. At the same time, removing the obstacles identified in this paper should both enhance the size of these multipliers and increase the scope for these transactions across MDB balance sheets.

Attainment of the ambitious SDGs will require considerable additional financing from MDBs. In our view, Risk Transfer should be seen as a complement to required capital increases to realize these goals. Increased capital boosts the lending power of MDBs given their statutory limits. The greater use of Risk Transfer would create greater lending potential within those constraints.

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Appendix 1. Construction of an Example MDB Portfolio

For our calculations, we construct a hypothetical MDB portfolio with assumptions that permit us to calculate RWAs under the S&P RACF. We suppose that Total Credit Risk Exposure At Default (EAD) equals US$50 billion, and that Total Adjusted Capital is US$22 billion. We suppose that Operational Risk comes only from commercial banking. Gross revenues for the past three years are assumed to be: US$300 million, US$400 million and US$250 million. The PCT status of the MDB is assumed to be "strong."

The Development Related Asset (DRA) portfolio of the example MDB is assumed to be 90% sovereign and 10% non-sovereign exposures. The MDB has sovereign and non-sovereign in all 29 Asia Pacific region counties. To construct the sovereign portfolio, we adopt the publicly disclosed distribution by country of IBRD's and IDA's outstanding loans to Asia and Pacific region countries, rescaling to $45 billion. To construct the non-sovereign portfolio, we start with public data on the country distribution of EBRD's outstanding loans. We assume all EBRD loans are non-sovereign. We then select the top 29 of the 38 country exposures (since there are 29 Asian countries in the combined IBRD & IDA portfolio) and rescale to obtain a portfolio size of US$5 billion.

Table A1. Country Distribution of Hypothetical MDB Portfolio

Country	EAD (mil. $)	%	Country	EAD (mil. $)	%	Country	EAD (mil. $)	%
India	12,402	25%	Azerbaijan	908	2%	Tajikistan	176	0.4%
Indonesia	6,374	13%	Uzbekistan	760	2%	Bhutan	144	0.3%
China	5,359	11%	Myanmar	554	1%	Samoa	91	0.2%
Bangladesh	5,164	10%	Thailand	417	1%	Maldives	74	0.1%
Pakistan	5,070	10%	Kyrgyz Republic	316	1%	Vanuatu	67	0.1%
Vietnam	4,959	10%	Laos	302	1%	Fiji	64	0.1%
Philippines	2,138	4%	Cambodia	265	1%	Tonga	52	0.1%
Kazakhstan	1,394	3%	Mongolia	256	1%	Timor-Leste	51	0.1%
Sri Lanka	1,202	2%	Papua New Guinea	217	0%	Solomon Islands	45	0.1%
Nepal	994	2%	Afghanistan	183	0%			

Since S&P RAC calculations require disaggregated corporate data, we split each aggregate non-sovereign country exposure into exposures representing 40%, 30%, 20% and 10% of the EAD. If, after disaggregation, any single corporate exposure is greater than $250 million (EBRD's maximum limit on loan size), the total exposure of that country is disaggregated further so that the

single exposure size limit is not breached. Finally, we map the top 29 EBRD countries to the top 29 Asian countries in our example sovereign portfolio. The resulting portfolio is the MDB non-sovereign portfolio. The country distribution of the total portfolio is shown in Table A1.

Now, consider the corporate reference portfolio used for Risk Transfer analysis. We assume that a total value of US$1 billion of corporate exposures is securitized consisting of 30 exposures in 15 countries. To generate the corporate reference portfolio, we select different fractions of the top two corporate exposures from each of the top 15 countries in the hypothetical MDB's corporate portfolio as the exposure amounts for the corporate reference portfolio. The fractions are readjusted so that no single exposure exceeds 5% of the total EAD amount of the selected exposure. Then, the fractions are adjusted again so that the total EAD amount of the corporate reference portfolio is US$1 billion.

Finally, consider the sovereign reference portfolio employed for Risk Transfer analysis. We assume that US$1 billion of sovereign exposures are securitized consisting of 15 exposures to 15 sovereigns. The sovereigns selected in the reference portfolio correspond to the top 15 sovereigns in the base portfolio. We select fractions of sovereign exposures from each of the top 15 sovereigns in the hypothetical MDB's sovereign portfolio as the exposure amounts for the sovereign reference portfolio. The fractions are adjusted so that no single exposure exceeds 10% of the total EAD amount of the selected exposure. Then, the fractions are adjusted again so that the total EAD amount of the corporate reference portfolio is US$ 1 billion. The weighted average rating of the sovereign reference portfolio is "BB+".