Date: 22.11.2011
Number: 21-161a

RISK CONTROL

Note

Strategy Analysis for Multilateral Development Banks: Scenarios and Ratings

1. Introduction

Multilateral Development Banks (MDBs) are unregulated entities and, hence, ostensibly able to select their own strategies subject to the preferences of their Member Counties (MCs) as articulated by their Boards. However, the business model followed by MDBs consists of borrowing in international capital markets and lending at relatively low or even concessional rates to developing country borrowers.

This business model only works if MDBs can maintain high ratings so that their cost of funds is low. Hence, the view that international bond markets take of the credit quality of MDBs constrains the strategies that they may follow. The gatekeepers for the bond market are the rating agencies.

While a commercial bank, in developing its strategy, works within and is constrained by regulatory capital, MDBs, in contrast, must develop strategies consistent with ratings agency perceptions of their capital adequacy, the liquidity of their balance sheet and other factors that influence the financial stability of the MDB in question.

This note introduces a powerful methodology for analysing the impact on MDB ratings of an extremely wide variety of scenarios. The methodology can be used by a range of MDB staff members, not just quantitative analysts, to understand the effects of pursuing different policies on key metrics including final headline ratings.

The methodology is implemented in a server-based software application in which users create and manage multiple scenarios on different datasets corresponding to snapshots of the MDB's assets, liabilities and other financials.

We illustrate the application using data for a stylised MDB operating in Asia that we have created using publicly available information from actual MDBs. We consider strategic scenarios, such as portfolio growth, as well as external scenarios, such counterparty downgrades or arrears growth. In addition to these quantitative scenarios, we also consider the impact of a range of qualitative scenarios.

We show that the Moody's rating is a binding constraint for balance sheet expansion, with a rating downgrade appearing with only a moderate increase in lending. Similarly, the Moody's rating is the first to be downgraded when sovereigns are downgraded. The Fitch rating, in contrast is highly stable to rating downgrades. The S&P rating is quite sensitive to greater investment in equity, reflecting that agency's conservative treatment of the equity asset class. The impact on the rating of countries falling into arrears leads to some differences across agencies but the Fitch rating appears to be most stable to such eventualities.

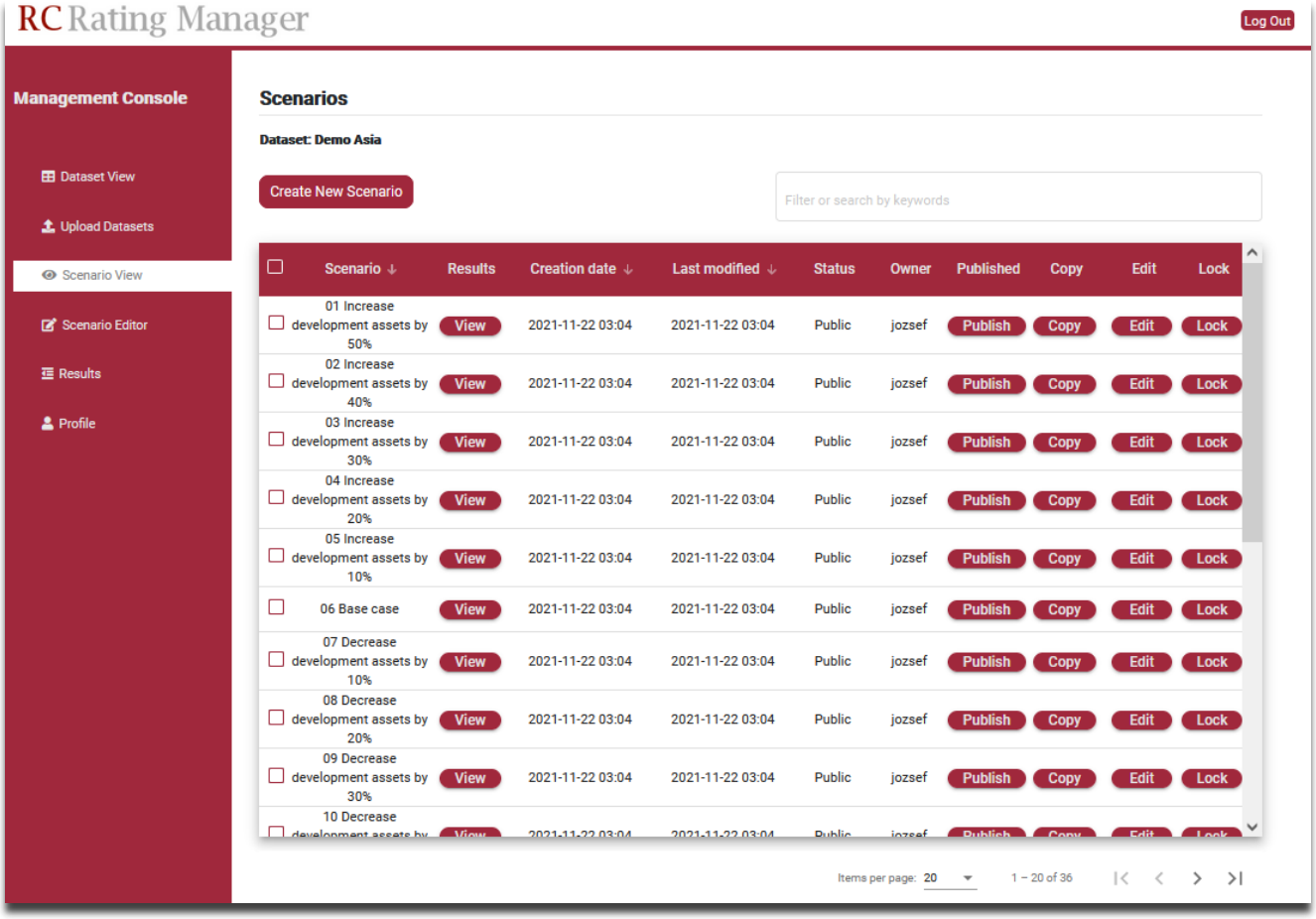
This note is organised as follows. Section 2 outlines how the calculations were performed. Section 3 describes the data used in the calculation including the balance sheet of the stylised MDB. Section 4 presents the results and Section 5 concludes.

2. Methodology

This analysis considers the impact of scenarios on ratings calculated according to the methodologies of S&P, Moody's and Fitch. S&P's approach to rating MDBs is described in Standard & Poor's (2018). This methodology draws on and expands upon the RAC (Risk Adjusted Capital) ratio-based methodology used for commercial banks (see Standard & Poor's (2017)). Moody's uses a scorecard approach to rating MDBs, described in Moody's (2019). Fitch's rating methodology for MDBs can be found in Fitch (2020).

These rating agency calculations are replicated using Rating Manager[1], a web application that allows users to calculate ratings contingent on different scenarios. Calculations in Rating Manger use granular data on individual assets and liabilities as inputs, as well as aggregate historical financial statements and arrears information. Once data have been uploaded to Rating Manager, rating calculations can be performed according to different scenarios. Figure 1 shows the 'Scenario View' screen in Rating Manager.

Figure 1: Rating Manager Scenario View



The calculation flow involves the following steps:

1. First, the input data is adjusted according to a scenario script.[2] Using a simple but powerful syntax, users can construct scenarios by writing scripts. Scripts can be employed to adjust, create and delete assets and liabilities, and to adjust sovereign ratings and other parameters.[3]

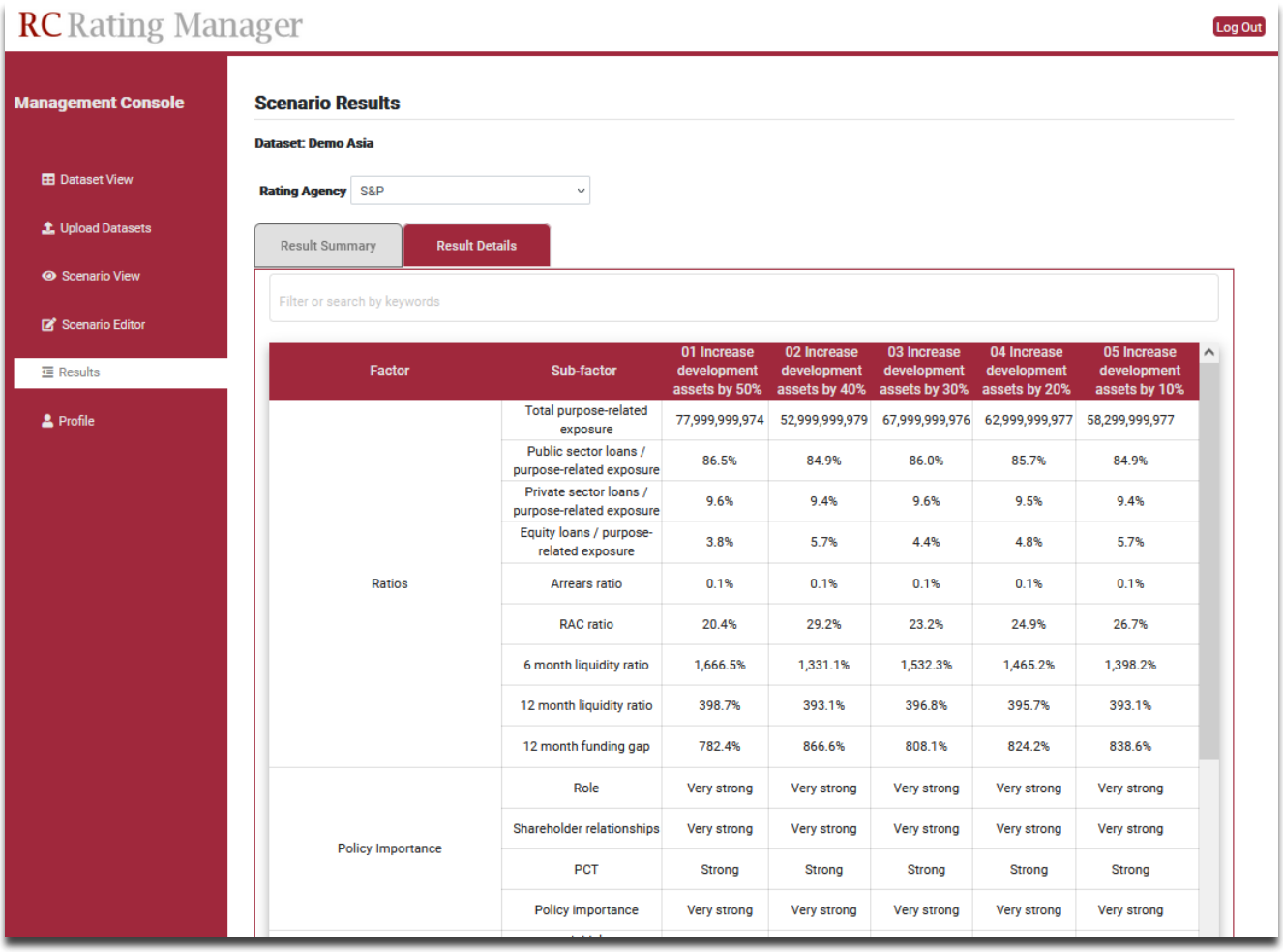
[1] More information on Rating Manager can be found at https://www.riskcontrollimited.com/rc-rating-scenario-system/.
[2] Scripts are specified using a Domain Specific Language (DSL) constructed using the scripting language Groovy.
[3] A set of rebalancing options are provided which specify how the assets and liabilities should be adjusted to ensure that the two sides of the balance sheet are balanced after the script has been applied.

2. Once the input data has been adjusted, it is aggregated to a form consistent with the data templates employed by each of the rating agencies.[4] (This aggregate data may be exported from the application, and may be used as a basis for rating agency submissions.)

3. The rating calculations are performed based on the aggregated data using parameters that are uploaded with the dataset. The qualitative components of the rating calculation are computed based on responses provided to a set of qualitative questions.[5]

Rating Manager reverse engineers the rating agency methodologies as closely as possible based on close reading of the rating agency documents and evaluation of actual past ratings in cases in which the documents are unclear. Intermediate results can also be accessed through the Rating Manager API. Figure 2 shows part of the S&P results table for a set of scenarios calculated in Rating Manager, as shown in the Rating Manager GUI.

Figure 2: Rating Manager S&P results table



Factor	Sub-factor	01 Increase development assets by 50%	02 Increase development assets by 40%	03 Increase development assets by 30%	04 Increase development assets by 20%	05 Increase development assets by 10%
Ratios	Total purpose-related exposure	77,999,999,974	52,999,999,979	67,999,999,976	62,999,999,977	58,299,999,977
	Public sector loans / purpose-related exposure	86.5%	84.9%	86.0%	85.7%	84.9%
	Private sector loans / purpose-related exposure	9.6%	9.4%	9.6%	9.5%	9.4%
	Equity loans / purpose-related exposure	3.8%	5.7%	4.4%	4.8%	5.7%
	Arrears ratio	0.1%	0.1%	0.1%	0.1%	0.1%
	RAC ratio	20.4%	29.2%	23.2%	24.9%	26.7%
	6 month liquidity ratio	1,666.5%	1,331.1%	1,532.3%	1,465.2%	1,398.2%
	12 month liquidity ratio	398.7%	393.1%	396.8%	395.7%	393.1%
	12 month funding gap	782.4%	866.6%	808.1%	824.2%	838.6%
Policy Importance	Role	Very strong	Very strong	Very strong	Very strong	Very strong
	Shareholder relationships	Very strong	Very strong	Very strong	Very strong	Very strong
	PCT	Strong	Strong	Strong	Strong	Strong
	Policy importance	Very strong	Very strong	Very strong	Very strong	Very strong

In the sections below, to exemplify how the system works, we shall consider the following scenarios:

- Increases in development assets (excluding equity investments)
- Increases in equity investments
- Sovereign rating downgrades
- Non-sovereign rating downgrades
- BICRA/ERG downgrades
- Sovereign counterparties going into arrears

[4] Fitch does not currently provide a formal data template, so the template used for Fitch has been constructed based on the data requested by Fitch.
[5] A set of base case responses must be provided; on top of this, a set of scenario-specific responses can be provided which override the base case responses for the scenario in question.

- Decline in quality of funding
- Decline in quality of management
- Decline in importance of mandate

A fuller set of scenarios that may be performed using Rating Manager is shown in the appendix. Even these are only a small subset of the rich universe of scenarios supported by the application, however.

3. Data

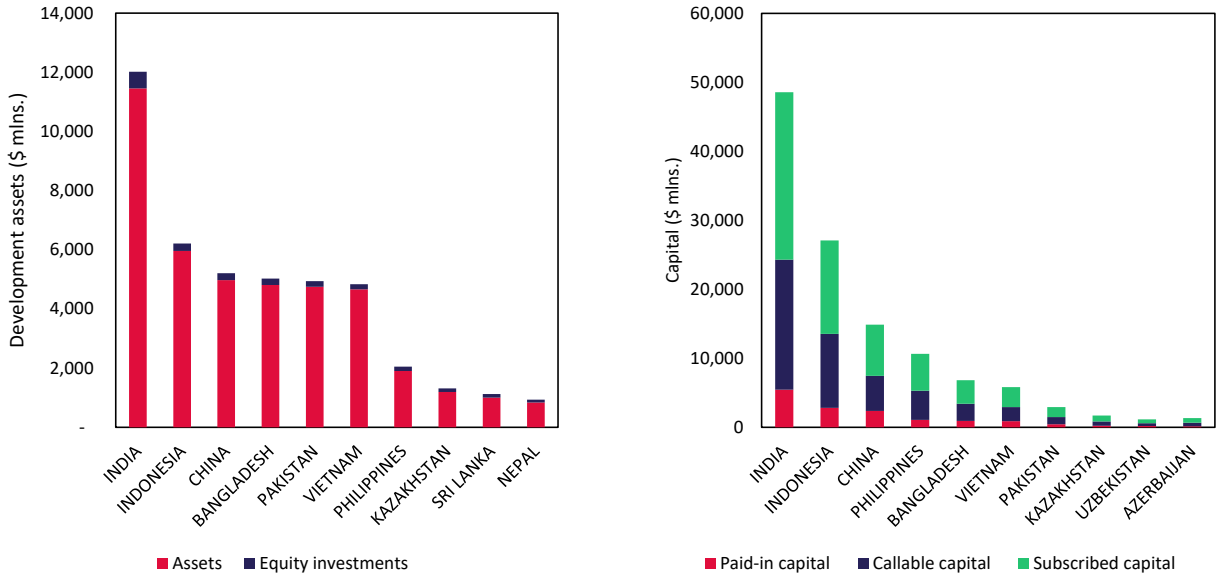
In this section, we describe the assets and liabilities data for the stylised MDB we consider in this note. These data were compiled using public information on the balance sheets of several prominent and familiar MDBs. A summary balance sheet is shown in Table 1.

Table 1: Summary balance sheet ($, 000)

Assets	
Development assets (sovereign)	45,000,000
Development assets (non-sovereign)	5,000,000
Equity investments	3,000,000
Treasury assets	16,500,000
Cash	500,000
Total assets	70,000,000
Liabilities	
Debt securities	48,000,000
Total liabilities	48,000,000
Equity	
Subscribed capital	62,439,736
Callable capital	47,439,736
Paid-in capital	15,000,000
Other reserves	7,000,000
Total equity	22,000,000

The geographic concentration of the MDB portfolio was adjusted to focus on borrowers located in Asia. Figure 3 shows the geographic concentration of Development Related Assets (loans and equity investments) in the first panel and the distribution of capital provided the member states in the second panel.

Figure 3: Geographic Breakdown of Development Related Assets and Member Country Equity



The parameter data used to perform the rating calculations are specified by the rating agencies in the MDB rating criteria documents, with some exceptions. The correlation matrix used by S&P to calculate the geographic concentration RAC ratio adjustment is recalculated based on the methodology described in the S&P methodology document. The factor weights used in the Fitch rating calculation are approximately inferred by replication of MDB ratings. Sovereign ratings are taken as of November 2021. BICRA and ERG scores are taken from Standard & Poor's (2021).

4. Results

In the base case the stylised MDB is rated AAA/Aaa/AAA by the three rating agencies. The S&P rating presumes a "Very strong" enterprise profile and an "Extremely strong" financial profile, with a RAC ratio of 32.3%. The Moody's rating is determined by an "a2" capital adequacy score, an "aa2" liquidity and funding score, and a "High" member support score. Fitch's rating is based on solvency and liquidity assessments of "aaa".

We begin by considering the impact of strategic scenarios on rating agency ratings. Table 2 shows the effect of increasing the gross amount of Development Related Assets held on the balance sheet and scaling up borrowing to offset the higher volume of assets. This has a large impact on the S&P RAC ratio, Moody's leverage ratio and contractual support ratio[6] and the Fitch equity to assets ratio, leading to downgrades to AA+, Aa2 and AA when development assets are increased by 50%.

It is interesting to note that the downgrade in the Moody's rating occurs earlier than that of the S&P rating as the balance sheet expands. Many within MDBs focus on the implications of strategy actions for the S&P rating because the RACF appears to be a more 'hard-wired' or formulaic evaluation of credit quality but here the Moody's rating is the binding constraint on balance sheet expansion.

Table 2: Impact of increase in development assets (excluding equity investments)

	Base	+10%	+20%	+30%	+40%	+50%
				S&P		
Public sector loans / purpose-related exposure	84.9%	84.9%	85.7%	86.0%	86.3%	86.5%
Private sector loans / purpose-related exposure	9.4%	9.4%	9.5%	9.6%	9.6%	9.6%
Equity loans / purpose-related exposure	5.7%	5.7%	4.8%	4.4%	4.1%	3.8%
RAC ratio	32.3%	29.6%	27.7%	25.8%	24.2%	22.7%
Capital adequacy	Ex. strong	Ex. strong	Ex. strong	Ex. strong	Ex. strong	Very strong
Rating	AAA	AAA	AAA	AAA	AAA	AA+
				Moody's		
Leverage ratio	227.3%	250.0%	272.7%	295.5%	318.2%	340.9%
DACQ	ba	ba	ba	ba	ba	ba
Contractual support ratio	98.8%	89.0%	81.8%	75.3%	69.8%	65.0%
Capital position	a3	a3	baa1	baa1	baa2	baa2
Contractual support	aa1	aa1	aa2	aa3	aa3	a1
Rating	Aaa	Aaa	Aa1	Aa2	Aa2	Aa2
				Fitch		
Equity to assets ratio	31.4%	29.2%	27.5%	25.9%	24.4%	23.2%
Usable capital to RWA ratio	81.9%	74.5%	71.0%	66.6%	62.6%	59.2%
Usable capital w/o net debt to RWA ratio	72.3%	64.2%	60.0%	55.0%	50.6%	46.7%
Concentration ratio	60.3%	57.1%	54.2%	51.5%	49.2%	47.0%
Equity stakes / banking portfolio	5.7%	10.7%	15.3%	19.4%	23.1%	26.5%
Equity to assets	Excellent	Excellent	Excellent	Excellent	Strong	Strong
Usable capital to RWA	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent
Concentration	High	High	High	High	High	High
Equity risk	Low	Low	Very low	Very low	Very low	Very low
Rating	AAA	AAA	AAA	AAA	AA	AA

Note: Each column shows the impact of the percentage increase in development assets. Liabilities are scaled uniformly to balance the increase in assets.

Table 3 shows the effect of increasing equity investments, (scaling existing liabilities being to match). As equity investments account for only a small portion of the MDBs balance sheet, we consider scenarios in which the equity investments are boosted significantly. Increasing equity investments leads to a sharp drop in the S&P RAC ratio and a two-notch downgrade when equity investments are increased by 500%. When equity

[6] The contractual support ratio is calculated as callable capital divided by total debt.

investments are minimal, the high risk weights assigned to equity exposures in the RAC calculation are partially mitigated by the High Risk Exposure Cap (HREC) adjustment. This allows equity exposures to be removed from the Risk Weighted Assets (RWA) ratio calculation, with the equity exposure amount instead being deducted from the Total Adjusted Capital (TAC).[7] The HREC becomes less effective at mitigating the impact of equity investments on the RWA as more equity investments are added to the portfolio, leading to the accelerated decline in the RAC ratio shown in Table 3.

Table 3: Impact of increasing equity investments

	Base	+100%	+200%	+300%	+400%	+500%
			S&P			
Public sector loans / purpose-related exposure	84.9%	80.4%	76.3%	72.6%	69.2%	66.2%
Private sector loans / purpose-related exposure	9.4%	8.9%	8.5%	8.1%	7.7%	7.4%
Equity loans / purpose-related exposure	5.7%	10.7%	15.3%	19.4%	23.1%	26.5%
RAC ratio	32.3%	29.4%	26.0%	21.9%	16.9%	10.8%
HREC	172.6%	204.8%	251.7%	326.7%	465.9%	813.6%
Capital adequacy	Ex. strong	Ex. strong	Ex. strong	Very strong	Very strong	Strong
Rating	AAA	AAA	AAA	AA+	AA+	AA
			Moody's			
Leverage ratio	227.3%	227.3%	227.3%	227.3%	227.3%	227.3%
DACQ	ba	ba	ba	ba	ba	ba
Contractual support ratio	98.8%	93.0%	87.9%	83.2%	79.1%	75.3%
Capital position	a3	a3	a3	a3	a3	a3
Contractual support	aa1	aa1	aa2	aa2	aa2	aa3
Rating	Aaa	Aaa	Aaa	Aaa	Aaa	Aa1
			Fitch			
Equity to assets ratio	31.4%	30.1%	28.9%	27.8%	26.8%	25.9%
Usable capital to RWA ratio	81.9%	66.6%	56.1%	48.5%	42.7%	38.1%
Usable capital w/o net debt to RWA ratio	72.3%	58.0%	48.3%	41.2%	35.8%	31.5%
Concentration ratio	60.3%	57.1%	54.2%	51.5%	49.2%	47.0%
Equity stakes / banking portfolio	5.7%	10.7%	15.3%	19.4%	23.1%	26.5%
Equity to assets	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent
Usable capital to RWA	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent
Concentration	High	Moderate	Moderate	Moderate	Moderate	Moderate
Equity risk	Low	Moderate	Moderate	Moderate	High	High
Rating	AAA	AAA	AAA	AAA	AA	AA

Note: Each column shows the impact of the percentage increase in equity investments. Liabilities are scaled uniformly to balance the increase in assets.

The table shows that, starting from a relatively low base of equity investment, the S&P rating is the binding constraint. This is consistent with the perception that many have that despite the HREC, S&P is exceeding conservative in its evaluation of the risk of MDB equity investments. These investments are treated by the agency as though they are high risk venture capital type investments whereas, in many cases, they are stable long-run investments in well-established firms.

Now, consider the impact of external scenarios. Table 4 shows how sovereign rating downgrades affect ratings, with each rating agency assigning ratings two notches lower when all sovereign counterparties are downgraded six notches. The downgrades impact the S&P RAC ratio, Moody's DACQ (Development Asset Credit Quality) assessment and Fitch weighted average rating metric, as well as the Moody's and Fitch member support assessments. The Moody's rating appears to be highly sensitive to sovereign downgrades.

Non-sovereign downgrades have a less pronounced impact on the rating of the MDB, mostly due to the skew of the MDB's portfolio towards sovereign loans. S&P's rating calculation does not take into account non-sovereign ratings at all – BICRA, ERG and EMG assessments are used instead. Moody's and Fitch do take non-sovereign ratings into account, but, as Table 5 shows, a six-notch downgrade of all corporate counterparties is not enough to affect the rating of the MDB.

[7] In order to translate this adjusted RAC ratio into a risk weight cap, a root finding algorithm is used to calculate the cap that produces the target RAC ratio.

Table 4: Impact of sovereign rating downgrades

	Base	-1	-2	-3	-4	-5	-6
				S&P			
RAC ratio	32.3%	28.8%	25.0%	21.5%	19.1%	16.7%	15.0%
Capital adequacy	Ex. strong	Ex. strong	Ex. strong	Very strong	Very strong	Very strong	Strong
Rating	AAA	AAA	AAA	AA+	AA+	AA+	AA
				Moody's			
DACQ	ba	ba	ba	ba	b	b	b
Weighted average shareholder rating	baa3	ba1	ba2	ba3	b1	b2	b3
Rating	Aaa	Aa1	Aa1	Aa1	Aa2	Aa2	Aa2
				Fitch			
Usable capital to RWA ratio	81.9%	70.2%	61.8%	60.3%	50.0%	45.7%	44.7%
Usable capital w/o net debt to RWA ratio	72.3%	62.0%	54.5%	53.2%	44.1%	40.3%	39.4%
Weighted average rating of loans & guarantees	BBB+	BBB	BBB-	BB+	BB	BB-	B+
Coverage of net debt by callable capital	BBB-	BB+	BB	BB-	B+	B	B-
Usable capital to RWA	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent
Credit risk	Low	Low	Low	Low	Low	Low	Moderate
Rating	AAA	AAA	AAA	AAA	AAA	AAA	AA

Note: Each column shows the impact of all sovereign counterparties of the MDB being downgraded by the specified number of notches.

Table 5: Impact of non-sovereign rating downgrades

	Base	-1	-2	-3	-4	-5	-6
				Moody's			
DACQ	ba	ba	ba	ba	ba	ba	ba
Weighted average shareholder rating	baa3	baa3	baa3	baa3	baa3	baa3	baa3
Rating	Aaa	Aaa	Aaa	Aaa	Aaa	Aaa	Aaa
				Fitch			
Usable capital to RWA ratio	81.9%	74.2%	74.2%	74.2%	70.9%	70.9%	70.9%
Usable capital w/o net debt to RWA ratio	72.3%	65.5%	65.5%	65.5%	62.5%	62.5%	62.5%
Weighted average rating of loans & guarantees	BBB+	BBB+	BBB+	BBB+	BBB+	BBB+	BBB+
Coverage of net debt by callable capital	BBB-	BBB-	BBB-	BBB-	BBB-	BBB-	BBB-
Usable capital to RWA	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent
Credit risk	Low	Low	Low	Low	Low	Low	Low
Rating	AAA	AAA	AAA	AAA	AAA	AAA	AAA

Note: Each column shows the impact of all non-sovereign counterparties of the MDB being downgraded by the specified number of notches.

BICRA and ERG downgrades have a more noticeable impact on S&P's rating, with a three grade drop in both leading to a single notch downgrade of the MDB as shown in Table 6. Both the BICRA and ERG grades are used in the RAC ratio calculation, where they determine the risk weights that are applied to non-sovereign exposures.

Table 6: Impact of BICRA/ERG downgrades

	Base	-1	-2	-3	-4
			S&P		
RAC ratio	32.3%	31.0%	28.4%	25.9%	23.5%
Capital adequacy	Ex. strong	Ex. strong	Ex. strong	Ex. strong	Ex. strong
Rating	AAA	AAA	AAA	AA+	AA+

Note: Each column shows the impact of all domiciles of counterparties of the MDB having their BICRA/ERG scores lowered by the specified number of grades.

Error! Not a valid bookmark self-reference. shows the impact of the MDB's top six sovereign counterparties going into arrears. Each rating agency assess arrears in a different way: S&P calculates its arrears ratio based on the 10-year arrears history of each sovereign counterparty, Moody's calculates its non-performing assets ratio using 3 years of historical data on sovereign and non-sovereign loans, and Fitch calculates its loan impairment ratio using country-level data on current sovereign and non-sovereign impairments. The combined effect of a high arrears ratio and the sovereign rating downgrade leads to ratings of AA, Aa3 and AA if any of China, Bangladesh, Pakistan or Vietnam goes into arrears. India or Indonesia going into arrears would lead to even lower ratings from S&P and Moody's.

Table 7: Impact of sovereigns going into arrears

	Base	India	Indonesia	China	Bangladesh	Pakistan	Vietnam
				S&P			
Arrears ratio	0.1%	25.5%	13.3%	11.1%	10.8%	10.6%	10.4%
RAC ratio	32.3%	7.7%	14.3%	15.4%	18.1%	18.2%	17.4%
PCT	Very strong	Weak	Moderate	Moderate	Moderate	Moderate	Moderate
Capital adequacy	Ex. strong	Adequate	Strong	Very strong	Very strong	Very strong	Very strong
Rating	AAA	A-	AA-	AA	AA	AA	AA
				Moody's			
Non-performing assets ratio	0.0%	16.4%	8.5%	7.1%	6.9%	6.8%	6.7%
Weighted average shareholder rating	baa3	caa1	b2	ba3	ba2	ba1	ba2
Asset performance	aaa	caa1	ba2	ba1	ba1	ba1	ba1
Rating	Aaa	A3	A1	Aa3	Aa3	Aa3	Aa3
				Fitch			
Usable capital to RWA ratio	81.9%	56.3%	66.4%	67.5%	70.8%	76.0%	71.1%
Usable capital w/o net debt to RWA ratio	72.3%	49.7%	58.6%	59.6%	62.4%	67.1%	62.8%
Weighted average rating of loans & guarantees	BBB+	BB	BBB-	BBB-	BBB-	BBB	BBB-
Loan impairment ratio	0.0%	22.9%	11.9%	10.0%	9.6%	9.5%	9.3%
Coverage of net debt by callable capital	BBB-	N/A	BB	BBB-	BBB-	BBB-	BBB-
Usable capital to RWA	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent
Credit risk	Low	High	Moderate	Moderate	Moderate	Moderate	Moderate
Rating	AAA	AA	AA	AA	AA	AA	AA

Note: Each column shows the impact of a single sovereign counterparty going into arrears. It is assumed that the sovereign rating is lowered to a default rating with each rating agency.

Lastly, we consider the impact of qualitative adjustments on the rating calculation. Table 8 shows the impact of three qualitative scenarios: the first is a decline in the quality of funding available to the MDB, the second is a deterioration of the quality of management, and the third is a decline in the importance of the mandate of the MDB.

These qualitative factors (with some differences in the details) are included in the rating methodology of all three rating agencies. The Moody's methodology places a high emphasis on qualitative assessment, and the impact of the qualitative scenarios is higher than for the two other rating agencies. Fitch uses a larger number of more granular factor assessments than S&P or Moody's, and so qualitative scenarios that only impact a single assessment tend not to impact the final rating.

Table 8: Impact of qualitative adjustments

	Base	Decline in funding quality	Decline in mgmt. quality	Decline in mandate
		S&P		
Role	Very strong	Very strong	Very strong	Adequate
Governance/management	Adequate	Adequate	Weak	Adequate
Funding	Positive	Neutral	Positive	Positive
Rating	AAA	AAA	AA	AAA
		Moody's		
Quality of funding	aaa	baa	aaa	aaa
Non-contractual support	High	High	High	Medium
Other adjustment	0	0	-2	0
Rating	Aaa	Aa3	Aa2	Aa1
		Fitch		
Access to capital markets	Excellent	Weak	Excellent	Excellent
Quality of governance	Medium risk	Medium risk	High risk	Medium risk
Public mandate	Medium risk	Medium risk	Medium risk	High risk
Rating	AAA	AAA	AAA	AAA

Note: Each shows the impact of a different qualitative scenario.

5. Conclusion

This note describes a system for conveniently analysing a wide range of different strategies that an MDB may wish to consider. In addition, we examine scenarios that reflect external events such as changes in the credit quality of the MDBs borrowers.

The impact of the scenarios is expressed in terms of the effects on the ratings agency evaluations of the MDB. These include the headline rating of the MDB provided by the three major rating agencies but also all the intermediate metrics and scores that contribute to the agency evaluations.

We study a range of scenarios including balance sheet expansion, increased investment in equities, downgrades in sovereign and non-sovereign ratings, increases in arrears and changes in qualitative judgments.

We show that the Moody's rating is a tighter constraint than one might imagine given the fact that Moody's focus significantly on judgmental factors and that the formulaic nature of the S&P RACF approach makes many consider it as the rating approach that binds most directly. Both in balance sheet expansion and sovereign downgrade scenarios, the Moody's approach binds early in that the Moody's rating exhibits the earliest downgrades. The Fitch rating is highly stable in the face of sovereign downgrades.

Neither the Moody's or Fitch ratings are sensitive to corporate rating downgrades while the S&P rating, which depends on BICRA scores rather than corporate ratings, also appears relative stable when BICRA scores start to shift.

The S&P rating is sensitive to increase investment in equity, reflecting the considerable conservatism of that agency's evaluation of the equity asset class. The impact on the rating of countries falling into arrears leads to some differences across agencies but the Fitch rating appears to be most stable to such eventualities.

The point of the application described here is to provide a wide range of MDB staff including management and non-specialists with an easy way of checking the effects of different possible strategies on the main constraint that the institutions face, namely the evaluations of the rating agencies.

As discussed in the introduction, while MDBs are unregulated, they are constrained by how the bond market and its proxies the rating agencies perceive the institution's credit standing. Rating agency methodologies are somewhat complex so having a user-friendly way of checking how different strategies or events affect ratings, can simplify and enhance strategy analysis.

References

Fitch (2020) "Supranationals Rating Criteria," May, New York, United States: Fitch Ratings.

Moody's (2019) "Multilateral Development Banks and Other Supranational Entities," June, New York, United States: Moody's Investor Services.

Standard & Poor's (2017) "Criteria | Financial Institutions | General: Risk-Adjusted Capital Framework Methodology," July, New York, United States: Standard & Poor's.

Standard & Poor's (2018) "Criteria | Governments | General: Multilateral Lending Institutions and Other Supranational Institutions Ratings Methodology," December, New York, United States: Standard & Poor's.

Standard & Poor's (2021) "Banking Industry Country Risk Assessment Update: June 2021," September, New York, United States: Standard & Poor's.

Appendix: Rating Manager Scenarios

Here are some of the many scenarios that can be described using Rating Manager:

1. Increase/decrease in gross/net amount for credit exposures filtered by a combination of borrower type/asset type/country/sector/rating/maturity
2. Increase/decrease in carrying value/fair value for equity exposures filtered by a combination of equity investment type/country/sector
3. Increase/decrease in liabilities filtered by liability type/maturity
4. New credit exposures with specified counterparties/borrower type/asset types/countries/sectors/ratings/maturities
5. New equity exposures with specified counterparties/equity investment types/countries/sectors
6. New liability issuances with specified liability types/maturities
7. Remove credit exposures filtered by a combination of borrower type/asset type/country/sector/rating/maturity
8. Remove equity exposures filtered by a combination of equity investment type/country/sector
9. Remove liabilities filtered by liability type/maturity
10. Replace selected low/high maturity assets with high/low maturity assets
11. Replace selected low/high maturity liabilities with high/low maturity liabilities
12. Increase/decrease in exposures to top N counterparties
13. Increase/decrease in exposures to top N countries
14. Increase/decrease in exposures to top N sectors
15. Downgrade/upgrade of ratings for selected credit exposures
16. Downgrade/upgrade of ratings for exposures to top N counterparties
17. Downgrade/upgrade of sovereign ratings for specified countries
18. Downgrade/upgrade of BICRA/ERG/EMG for selected countries
19. Increase/decrease in arrears for selected credit exposures
20. Increase/decrease in arrears for exposures to top N countries
21. Increase/decrease in arrears for exposures to top N counterparties
22. Increase/decrease in exposures to top N countries in arrears
23. Increase/decrease in exposures to top N counterparties in arrears
24. Change S&P/Fitch arrears status for specified countries
25. Increase/decrease in repayments
26. Increase/decrease in disbursements
27. Change policy importance assessments
28. Change operating environment assessments
29. Change shareholder relationship assessments
30. Change capacity to support assessments
31. Change propensity to support assessments
32. Change funding quality assessments
33. Change liquid asset quality assessments
34. Change management assessments
35. Change Moody's financial ratio trend adjustments

As well as the above scenarios, the Rating Manager scripting approach allows for the specification of highly specific custom scenarios.