

Managing South Africa's Exposure to Eskom: How to Evaluate the Credit Risk from the Sovereign Guarantees?

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Key messages

- Sovereign guarantees create risks to the sovereign balance sheet
- Framework for guarantee risk management includes risk identification, analysis, and risk mitigation and management measures
- National Treasury of South Africa uses credit rating and scenario analysis for risk assessment and quantification
- Risk assessment used for monitoring and decision-making – but could be used further for micro and macro-economic management
- South African experience provides lessons for risk management in other countries

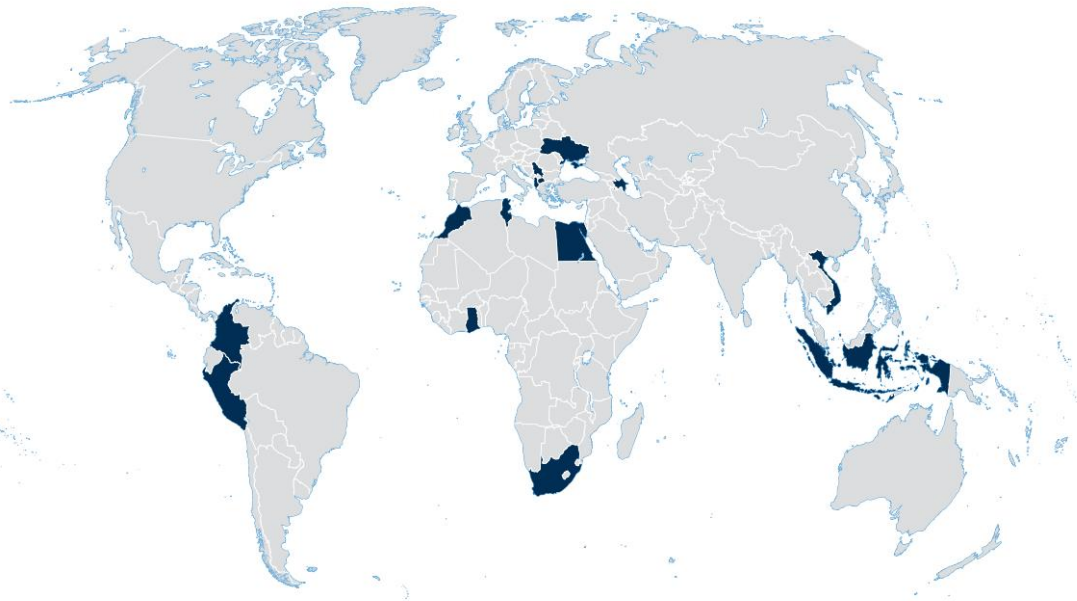
World Bank project supports National Treasury of South Africa in managing risks from government guarantees



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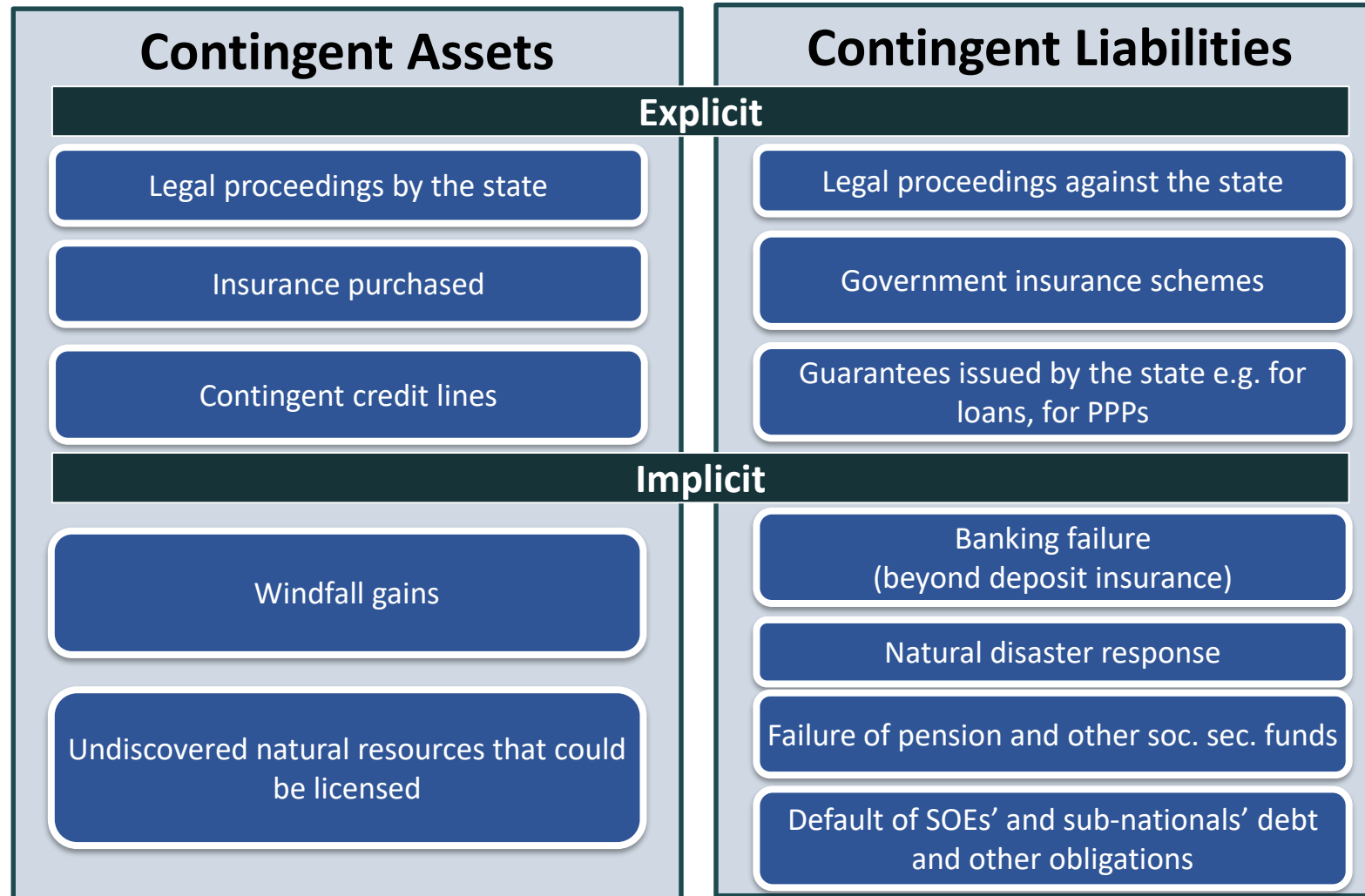
Swiss Confederation

Federal Department of Economic Affairs,
Education and Research EAER
State Secretariat for Economic Affairs SECO

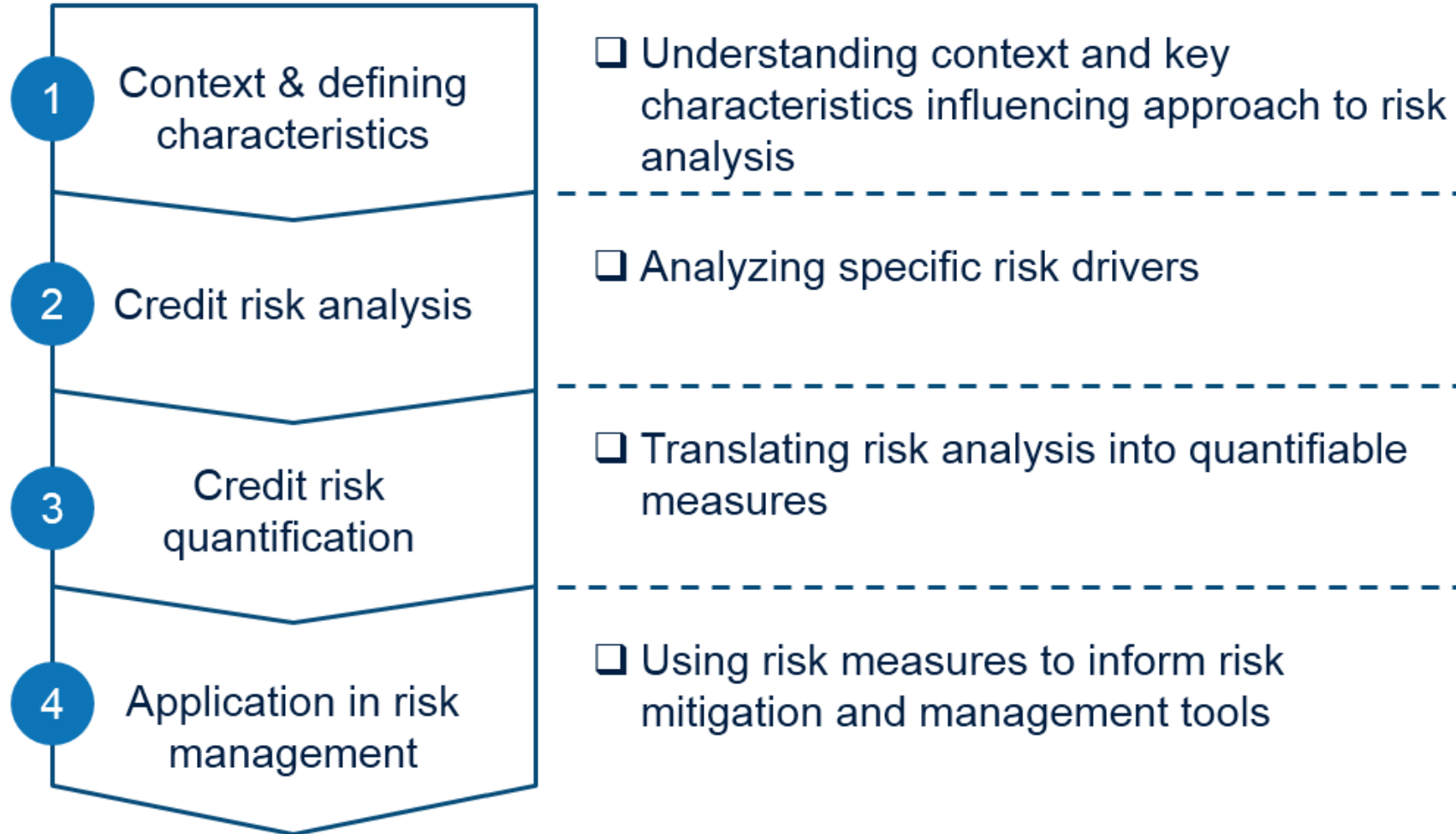


- Government Debt and Risk Management Program supports 14 middle-income countries in reform development and implementation
- Contingent liabilities increasingly important for many clients
- National Treasury of South Africa one country WB supports
 - Debt portfolio benchmark setting
 - Setup of electronic trading platform for government securities
 - Assessing and managing risks from government guarantees

Off-balance-sheet items can affect assets and liabilities on the sovereign balance sheet - risks tilted to downside



Assistance along an established framework for assessing and managing risks



Exposure to Eskom accounts for large share (79%) of guarantee portfolio

Table 7.9 Government guarantee exposure¹

R billion	2016/17		2017/18		2018/19	
	Guarantee	Exposure ²	Guarantee	Exposure ²	Guarantee	Exposure ²
Public institutions	475.7	290.4	469.8	321.3	483.1	372.4
<i>of which:</i>						
<i>Eskom</i>	350.0	202.8	350.0	244.7	350.0	294.7
<i>SANRAL</i>	38.9	29.4	38.9	30.4	38.9	30.3
<i>Trans-Caledon Tunnel Authority</i>	25.6	20.9	25.7	18.9	43.0	14.9
<i>South African Airways</i>	19.1	17.8	19.1	11.1	19.1	17.3
<i>Land and Agricultural Bank of South Africa</i>	11.1	3.8	9.6	3.8	9.6	2.5
<i>Development Bank of Southern Africa</i>	12.5	4.1	12.2	4.1	11.4	4.4
<i>South African Post Office</i>	4.4	4.0	4.2	0.4	–	–
<i>Transnet</i>	3.5	3.8	3.5	3.8	3.5	3.8
<i>Denel</i>	1.9	1.9	2.4	2.4	3.4	3.4
<i>South African Express</i>	1.1	0.8	1.1	0.9	1.2	0.2
<i>Industrial Development Corporation</i>	0.4	0.2	0.4	0.1	0.5	0.2
<i>South African Reserve Bank</i>	3.0	–	–	–	0.3	–
Independent power producers	200.2	125.8	200.2	122.2	200.2	146.9
Public-private partnerships³	10.0	10.0	10.0	9.6	10.1	10.1

1. A full list of guarantees is given in Table 11 of the statistical annexure in the Budget Review
2. Total amount of borrowing and accrued interest for the period made against the guarantee
3. These amounts only include national and provincial PPP agreements

Source: National Treasury of South Africa 2019 Budget Review

South Africa uses primarily credit rating to assess risks from guarantees – complemented by scenario analysis

A. Expert judgement

Non-structured overall assessment

B. Credit rating

Scoring individual risk drivers and aggregate scores to an overall rating

C. Statistical models

Use mathematical equation to solve for dependent variable (e.g. likelihood of default) using independent variables (e.g. financial ratios)

D. Scenario analysis

Model firm finances and understand ability to service debt under alternative scenarios

E. Structural models

View government support (e.g. guarantee) as put option and calculate likelihood of option being exercised

F. Market prices

Use market prices (e.g. bond spreads) to estimate likelihood of default and value of credit risk

Credit rating methodology uses qualitative and quantitative risk indicators

Scorecard for electricity sector

Business risk indicators	Financial risk indicators
<ul style="list-style-type: none"> • Industry Prospects <ul style="list-style-type: none"> ○ Operating Environment ○ Regulatory Framework • Corporate Governance <ul style="list-style-type: none"> ○ Adherence to applicable legislation ○ Management Quality • Market Position <ul style="list-style-type: none"> ○ Diversification ○ Size (capacity) 	<ul style="list-style-type: none"> • Profitability <ul style="list-style-type: none"> ○ Operating margin ○ Net profit margin ○ Revenue growth • Debt capacity <ul style="list-style-type: none"> ○ Debt to assets ratio ○ Debt to equity ratio ○ Interest cover ratio • Efficiency <ul style="list-style-type: none"> ○ Cost to income ratio • Cash flow adequacy <ul style="list-style-type: none"> ○ Funds from operations to total debt ratio • Liquidity <ul style="list-style-type: none"> ○ Cash ratio ○ Quick ratio ○ Current ratio

- Scorecards are industry specific
- Based on methodologies of rating agencies but adapted to local context
- Scorecards contain
 - Qualitative and quantitative risk indicators
 - Scoring guidance
 - Weights
- Codified in approved methodology paper

Scores are aggregated to internal risk rating

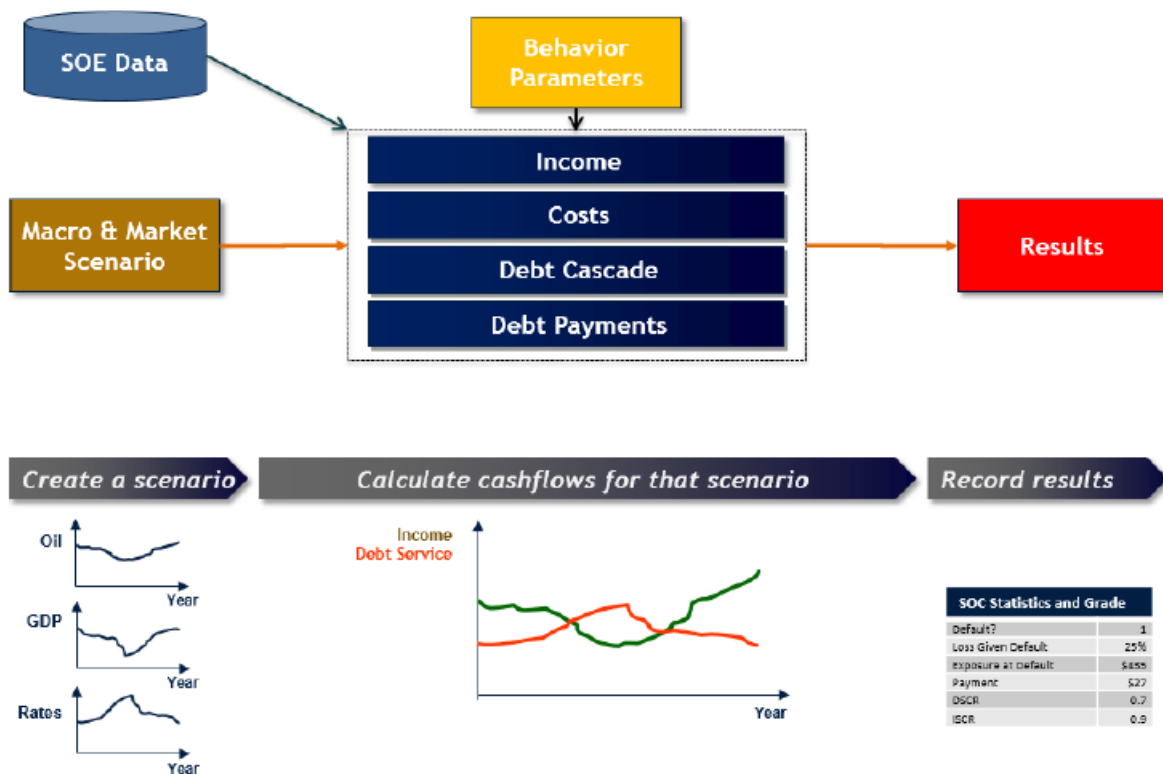
Internal risk ratings

Risk ratings	Extent of risk exposure	Likelihood of materialization
1	Extremely low risk	Remote
2	Low risk	
3	Moderate risk	
4	Marginal risk	
5	Special attention	Possible
6	Substandard	
7	High risk	Probable
8	Very high risk	
9	Imminent default/in default	

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Scenario analysis to understand guarantee beneficiary's ability to generate cash to service debt

Illustration of scenario analysis model



Illustrative cash flow calculations

R'billions

Opening balance
 Cash from operations
 Cash from financing activities
Total debt payments needed
Required Repayment I
Required Interest to b
 Interest received
 Other financing activities
Cash available for investment
 Investment activities
 Net borrowings
 Cash available to pay debt
 Required debt payments
 Shortfall/Cash remaining

	FY18	FY19	FY20	FY21	FY22
Opening balance	100,00	33,00	3,00	11,00	50,00
Cash from operations	90,00	120,00	170,00	200,00	210,00
Cash from financing activities	-127,00	-100,00	-127,00	-101,00	-198,50
<i>Total debt payments needed</i>	-130,00	-105,00	-130,00	-100,00	-210,00
<i>Required Repayment I</i>	-30,00	-25,00	-40,00	-60,00	-120,00
<i>Required Interest to b</i>	-100,00	-80,00	-90,00	-70,00	-110,00
Interest received	3,00	3,00	2,00	2,00	1,50
Other financing activities	-	2,00	1,00	-3,00	10,00
Cash available for investment	-37,00	20,00	43,00	99,00	11,50
Investment activities	-80,00	-100,00	-90,00	-110,00	-60,00
Net borrowings	50,00	50,00	55,00	50,00	60,00
Cash available to pay debt	163,00	108,00	141,00	150,00	271,50
Required debt payments	-130,00	-105,00	-130,00	-100,00	-210,00
Shortfall/Cash remaining	33,00	3,00	11,00	50,00	61,50

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Internal risk ratings are converted into probabilities of distress – next step to calculate expected loss

Probabilities of distress ...

	Moody's rating	Internal rating	Year 1 (%)	Year 2 (%)	Year 3 (%)	Year 4 (%)	Year 5 (%)
Investment Grade	Aaa	1	0.003	0.006	0.012	0.023	0.039
	Aa2	2	0.022	0.047	0.073	0.108	0.136
	A2	3	0.062	0.151	0.183	0.255	0.314
	Baa2	4	0.174	0.352	0.350	0.444	0.511
Sub-investment grade	Ba2	5	1.110	2.111	1.954	2.294	2.418
	B2	6	3.904	5.729	4.471	4.884	4.874
	Caa2	7	15.894	11.760	7.339	7.021	6.300
	Ca	8	54.147	10.977	5.315	4.427	3.569
	C	9	100.000	-	-	-	-

... can be used to calculate expected loss

1. If the counterpart defaults, how much is at risk?

Exposure at Default (*EAD*)

2. If defaults occurs, what percentage of exposure will be lost?

Loss Given Default (*LGD*)

$$\text{Loss} = EAD * LGD$$

3. What is the probability of a counterparty defaulting?

Probability of Default (*PD*)

$$\text{Expected Loss (EL)} = EAD * LGD * PD$$

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Risk assessment informs decision-making

Risk mitigation and management measures applied

- Fiscal Liabilities Committee meets quarterly to discuss evolution of risks, advise on risk mitigation measures, and recommend on the underwriting of new risks
- Strong practice of transparency of budget process and public finances – risk exposure reported internally and externally

Further measures considered

- Risk-based guarantee fees
- Contingency reserve account (i.e. fiscal buffer fund)

Risk rating across entities can be illustrated to understand portfolio of risks from key contingent liabilities

Illustration of risk assessment reports

1	2	3	4	5	6	7	8	9
Extremely Low	Low risk	Moderate risk	Marginal risk	Special Attention	Substandard	High risk	Very high risk	Imminent default/in default
			SOC 2		SOC 3	SOC 8		
			SOC 1			SOC 5	SOC 9	
			PPPs			SOC 6	SOC 10	
			DFI 2			SOC 7		
			DFI 1				SSF 5	
			SSF 4					
			SSF 2					
			SSF 3					

IPPs: Independent Power Producers, SSF: Social Security Fund, PPP: Public-Private Partnerships, SOC: State-Owned Company, DFI: Development Finance Institution

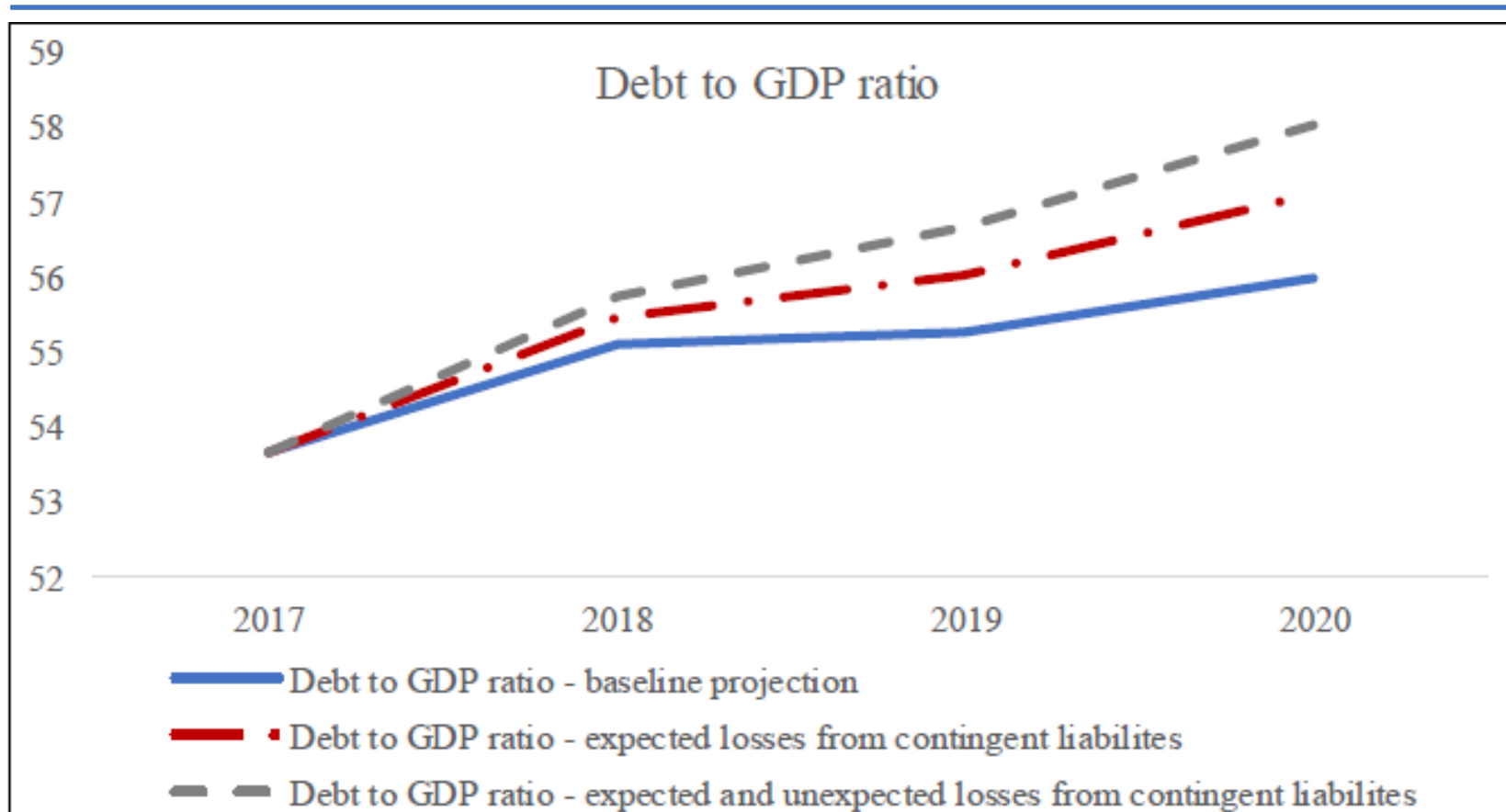
Assessing and managing guarantees cannot address underlying business challenges

Additional measures to be considered in assessing and managing guarantees to Eskom in South Africa

- Managing exposure from guarantees does not address underlying business challenges – if beneficiary provides essential services, performance will impact fiscus irrespective of explicit guarantee or not
- Understanding fundamental risk drivers through risk analysis can support development of turnaround plans
- Scenarios for the realization of risks could be more extensively used to inform macro-fiscal analysis and fiscal policy
 - Example: add potential realization of contingent liabilities to debt sustainability analysis

Realization of contingent liabilities may have cumulative impact of 1 - 3 percentage points on debt/GDP over 3 years

Impact of realization of contingent liability scenarios on debt to GDP ratio¹



¹ Based on debt sustainability analysis published in Budget Review of the Republic of South Africa published in February 2018
Source: Bachmair, Bogoev; Assessment of contingent liabilities and their impact on debt dynamics in South Africa, World Bank, 2018

South Africa's experience valuable to others

Valuable lessons for other countries to strengthen management of guarantees and fiscal risks

- Risks should be assessed before guarantees are issued or risks are underwritten
- Risk assessment methodologies should be used pragmatically: start easy; adapt to data limitations; know what staff are capable of; invest resources proportional to policy outcomes that can be obtained
- Focus on explicit risks may be short-sighted – implicit risks are often bigger, and governments may find it difficult not to step in
- Fiscal risk management best when top-down (macro-fiscal impact) and bottom-up analyses (fundamental understanding of specific risks) are combined

Further reading

- Bachmair, Aslan, Maseko. **Managing South Africa's Exposure to Eskom: How to Evaluate the Credit Risk from the Sovereign Guarantees?** 2019.
<http://documents.worldbank.org/curated/en/162801547570854145/Managing-South-Africas-Exposure-to-Eskom-How-to-Evaluate-the-Credit-Risk-from-the-Sovereign-Guarantees>
- Bachmair, Bogoev. **Assessment of contingent liabilities and their impact on debt dynamics in South Africa.** 2018. <http://documents.worldbank.org/curated/en/645381528134003501/Assessment-of-contingent-liabilities-and-their-impact-on-debt-dynamics-in-South-Africa>
- Bachmair. **Contingent liabilities risk management: a credit risk analysis framework for sovereign guarantees and on-lending—country experiences from Colombia, Indonesia, Sweden, and Turkey.** 2016.
<http://documents.worldbank.org/curated/en/138921468195001816/Contingent-liabilities-risk-management-a-credit-risk-analysis-framework-for-sovereign-guarantees-and-on-lending-country-experiences-from-Colombia-Indonesia-Sweden-and-Turkey>
- The World Bank Treasury – Debt Management Learning and Training Notes: **Assessing and Managing Credit Risk from Contingent Liabilities: A Focus on Government Guarantees**, August 2019.
<http://pubdocs.worldbank.org/en/294941565898518464/LearningandTrainingNotes-Assessing-and-Managing-Risk-from-CLs-Final-August152019.pdf>