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CONCEPTUAL FRAMEWORK OF CONTINGENT LIABILITIES AND GUIDELINES FOR MANAGING LOAN GUARANTEES AND ON-LENDING IN THE MEFMI REGION

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF BOXES

PREFACE

The subject of contingent liabilities has attracted a lot of attention among policy makers, researchers and international financial institutions. Contingent liabilities are increasingly becoming one of the largest sources of fiscal risks in most developing countries. Sovereign contingent liabilities are liabilities that materialise only when specific uncertain future events occur, which are generally outside the control of governments. When they materialise, they can represent a significant burden to public finances, and undermine debt sustainability.

To prevent or mitigate undesirable effects, contingent liabilities must be identified, measured, monitored and reported. A government's ability to respond to the risk of contingent liabilities materialising partly depends on the quality of its information about the magnitude and likelihood of potential shocks to the public finances. A comprehensive disclosure and analysis of contingent liabilities can help governments to ensure that (i) debt management settings can respond to potential future shocks; (ii) risks are actively monitored and managed, and (iii) abrupt and disruptive changes in policy are avoided. Better understanding of contingent liabilities, greater transparency and effective risk management practices can reduce the magnitude of the negative effect on public finances and the economy.

While the quality of contingent liabilities disclosure and analysis has improved in recent years in some countries, existing practices tend to be incomplete, fragmented and qualitative in nature.

Against this backdrop, MEFMI with the support of FSD Africa developed these guidelines for use by MEFMI member countries in identifying, measuring, managing, controlling and reporting risks posed by contingent liabilities.

The guidelines comprise two main components: (i) sources of contingent liabilities, and (ii) managing guarantees and on-lending. It is important to note that on-lending is not a source of contingent liability but a direct liability of the government. However, they pose similar credit risks as loan guarantees, hence their inclusion in these Guidelines.

ACRONYMS AND ABBREVIATIONS

ALM Asset and liability management

CGF Credit guarantee fund

DMO Debt management office

DOD Debt outstanding and disbursed

ECA Export credit agency

EL Expected loss

GFS Government finance statistics

IFRS International Financial Reporting Standards

IMF International Monetary Fund

IPP Independent power producer

IPSAS International Public Sector Accounting Standards

LGD Loss given default

MEFMI Macroeconomic and Financial Management Institute of Eastern and Southern Africa

OECD The Organisation for Economic Cooperation and Development

PD Probability of default

PPP Public-private partnership

SME Small and medium-sized enterprise

SNA System of National Accounts

SOE State-owned enterprise

SPV Special purpose vehicle

UL Unexpected loss

1. INTRODUCTION

1.1. Purpose of the Guidelines

The purpose of these Guidelines is to help countries build frameworks for managing loan guarantees and on-lending, by outlining standard structures and processes driven from sound practices, at regional and global level. A secondary purpose is to provide key information on identifying and monitoring selected sources of contingent liabilities.

The MEFMI member countries are expected to adapt the Guidelines to develop their own frameworks, considering their specific circumstances.

1.2. Managing contingent liabilities

Contingent liabilities are sources of fiscal risks due to the uncertainty that is structurally embedded in them. History has shown that if governments do not manage fiscal risks arising from contingent liabilities and take necessary measures in a timely manner, they can be caught unprepared for their fiscal burden. Therefore, the objective of contingent liability management is to mitigate and manage fiscal risks arising from these liabilities both at the instrument and portfolio level.

Contingent liability management also aims to ensure that the decision makers are well informed about the costs and risks of the contingent liabilities they are considering beforehand. The information assists in the assessment of the contingent liability against other forms of government financing modes, such as on-lending, capital injections and direct subsidies. This objective is applicable for contingent liabilities that are explicitly issued by the government, e.g. loan guarantees. To achieve this objective, the costs and risks of the contingent liabilities should be assessed ex ante.

A robust governance framework clearly defining the scope for risk management and allocating the roles and responsibilities among decision-making institutions ensures transparency and accountability of the government and the decision-making processes. A governance framework also brings about the necessary collaboration and coordination among relevant stakeholders involved in risk management and monitoring of contingent liabilities.

1.3. Conceptual framework

The United Nations System of National Accounts (SNA) 2008 describes contingent liabilities as: 'A possible obligation that arises from past events and whose existence will be confirmed only by the occurrence or non-occurrence of one or more uncertain future events not wholly within the control of the entity.'

Defining characteristics of contingent liabilities are:

— There is uncertainty on whether there will be a payment obligation required on the side of the government. For example, in case of a government loan guarantee, there is uncertainty whether the borrower will default, causing the government to step in to pay the guaranteed loan.

— Due to this uncertainty, the size of the obligation is not predetermined. Taking the government loan guarantee example, depending on the timing of the uncertain default, the amount that the government will have to pay changes. There are possibilities between '0' in the case of non-default and 'total loan amount and possibly accrued interest over this amount' in the case that the borrower uses the proceeds of the loan and does not make any repayments of principal and interest.

Contingent liability management also aims to ensure that the decision makers are well informed about the costs and risks of these liabilities beforehand.

— There is a specific event or condition generally defined beforehand, which is also called the 'triggering event'. In case of loan guarantees, this event is the borrower's default.

— The timing of the occurrence of this event is not known. The guaranteed borrower may default during any time within the agreed maturity with the creditor.

Uncertainties over the size of future budgetary expenditures are sometimes confused with contingent liabilities. If the government will make a payment yet the amount is dependent upon certain variables that are estimated at the time of budget making, such as a floating rate bond's interest payments, there is a direct liability because there is no doubt that the payment will be made (despite the fact the amount is not certain).

Government expenditure arrears, including those arising from payment obligations of interest, principal or other liabilities for public debt, are not contingent liabilities because they are unpaid direct liabilities of the government not bound by any condition. The existence of any possible uncertainties over the timing or size of payments out of existing arrears may cause them to be mistakenly considered as contingent liabilities.

Fiscal risk is defined as any potential difference between actual and expected fiscal outcomes, such as budget balance or public debt levels. Contingent liabilities are one source of fiscal risks, due to the uncertainty they create over the fiscal position of the government. Other sources of fiscal risk include shocks to macroeconomic variables (economic growth, commodity prices, interest rates or exchange rates) and calls on contingent liabilities.

Contingent liabilities are classified into two main groups based on the notion of 'obligation':

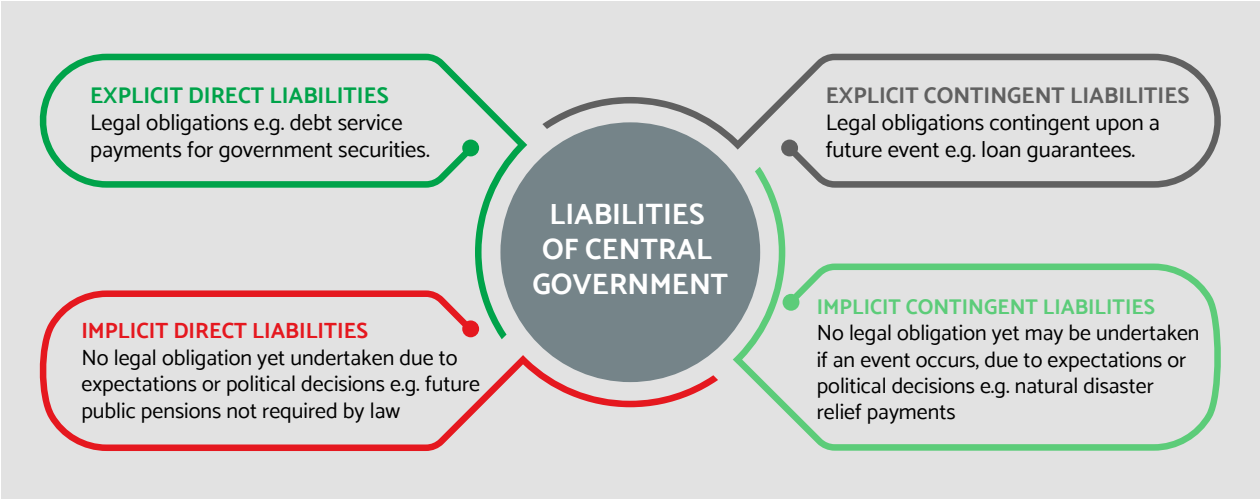
— Explicit contingent liabilities are legal commitments of a government to make certain payments if a particular event occurs based on contracts, laws or clear policy statements. The most common examples of such liabilities are government loan (or credit) guarantees, other types of explicit guarantees such as demand and exchange rate guarantees under public-private partnerships (PPPs), and government-sponsored insurance programmes.

— Implicit contingent liabilities are political or moral obligations of a government to intervene, which usually occur in times of crisis or natural disaster. Bank bail-outs, assumption of nonguaranteed debt of state-owned enterprises (SOEs) or subnational governments and disaster relief payments are the common types in this category. The figure below shows the major types of contingent liabilities.

A 'fiscal risk matrix'[1] classifying government liabilities into direct and indirect (contingent) as well as explicit and implicit categories is a recommended first step in fiscal risk management. Figure 1 illustrates this conceptual framework with examples for each category.

1 The fiscal risk matrix approach is based originally on the work of Polackova (1999), explaining contingent liabilities as sources of fiscal risk and their place in the sovereign balance sheet. See Polackova (1999) and Government at risk (2002) for this analysis.

Figure 1: Liabilities of Central Government



Source: Adopted from Polackova (1999)

On-lending is a financial support instrument like guarantees but it is not a contingent liability. In on-lending, a government contracts a loan directly from the creditor and on-lends this loan through a subsidiary agreement to the borrower institution. The government is then exposed directly to the borrower entity's ability to meet its payment obligations. In both loan guarantees and on-lending, the government assumes the whole or part of the credit risk of a loan. Therefore, proper assessment and management of this credit risk is crucial for the government.

1.4. Scope of the Guidelines

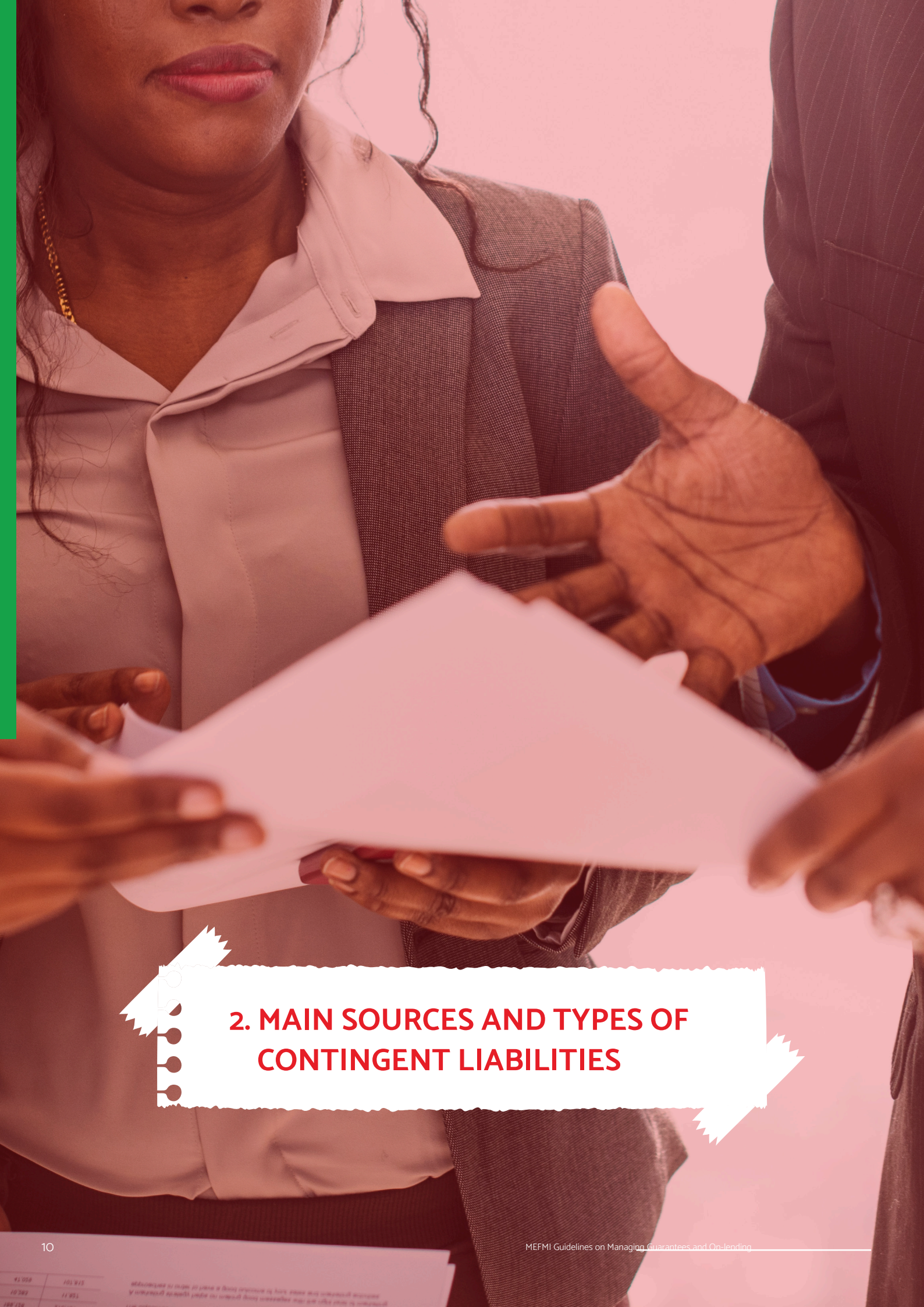
These Guidelines introduce explicit and implicit contingent liabilities of central government by providing key information about their characteristics and summary information on major requirements for their effective management.
Legal and institutional frameworks, issuance, risk management, monitoring, recording and reporting processes of loan guarantees and on-lending are given in a comprehensive manner.

1.5. Outline of the document

The remainder of the document is as follows:

- Section 2 defines the most prominent types of contingent liabilities and summarises their characteristics to help countries identify their exposures to these types and to better manage fiscal risks arising from them.

- Section 3 covers the guidelines pertaining to the management of loan guarantees and on-lending, outlined under the following sub-sections:
  - Legal and institutional framework for managing guarantees and on-lending
  - Issuance processes
  - Risk management framework
  - Monitoring
  - Recording data
  - Reporting and disclosure.



2. MAIN SOURCES AND TYPES OF CONTINGENT LIABILITIES

This section aims to provide basic and practical information to help understand different sources and types of contingent liabilities and identify their contingent liability exposures as a starting point for fiscal risk analysis. Identification of contingent liabilities is an essential process in efforts for their management. In these Guidelines, the focus is on the central government exposure to the contingent liability.

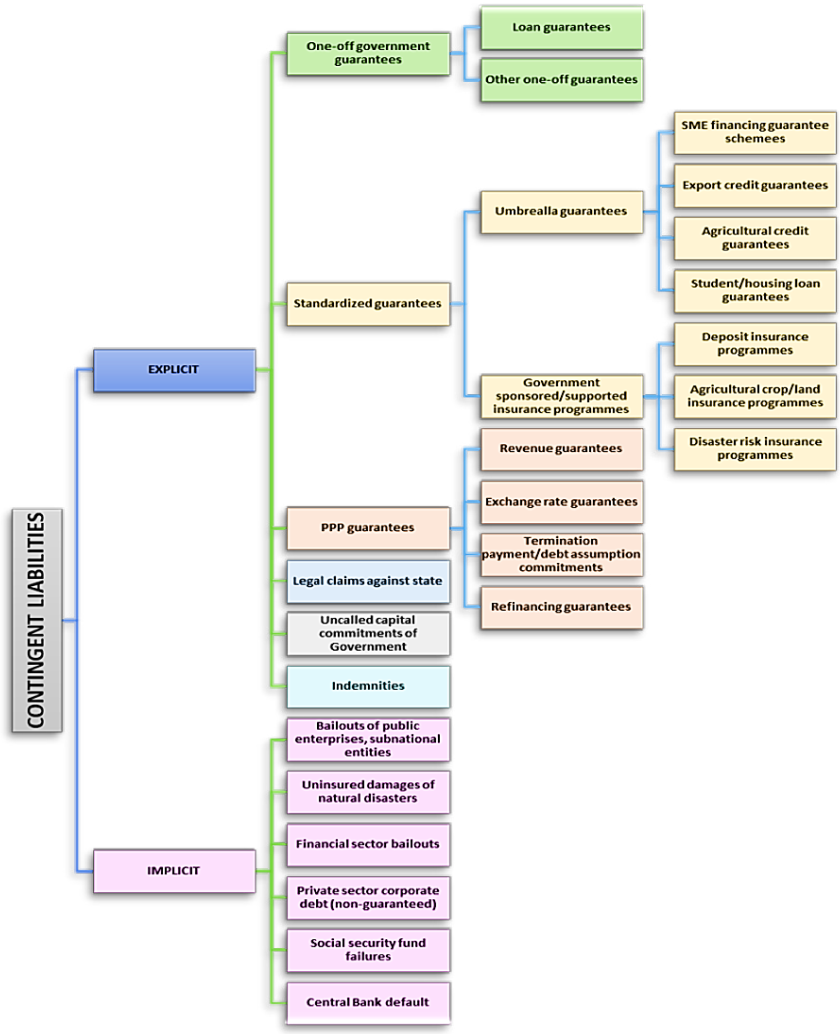
Table 1 below shows how direct and contingent liabilities of different levels of government and the private sector are categorised as contingent liabilities of the central government.
Table 1: Explicit and Implicit Contingent Liabilities of Central Government

Table 1: Explicit and Implicit Contingent Liabilities of Central Government

Contingent liabilities issued by contracts and laws by central government units	Explicit contingent liabilities of central government
Direct and contingent liabilities of subnational entities	Implicit contingent liabilities of central government (might turn into central government liabilities in exceptional circumstances)
Direct and contingent liabilities of SOEs	
Direct and contingent liabilities of central bank	
Direct and contingent liabilities of private sector and households	

Figure 2 below gives the main types and sources of contingent liabilities. The types given are based on the existing literature. It is acknowledged, however, that there can be certain contingent liabilities in a specific country contexts which might not fall precisely in these categories. Such sources unlisted or unspecified in these Guidelines should also be considered by each country.

Figure 2: Classification and Types of Contingent Liabilities



2.1. Explicit contingent liabilities

2.1.1. One-off[2] government guarantees

These are guarantees provided on a case-by-case basis with separate application processes evaluated at the central government level, by the related line ministries and the ministry of finance as the issuer of the guarantee. Loan guarantees are the most common form of one-off guarantees.

A loan guarantee is defined as a contingent liability based on a contract (guarantee agreement) through which the government assumes the whole or part of the credit risk (default risk) of a loan extended to another party. If the borrower fails to fulfil its obligations, the lender can turn to the government as guarantor and claim payment of interest and/or principal.

Table 2: Characteristics of Loan Guarantees

Guarantor	Ministry of finance (single authority) – common and recommended practice. Other ministries and units within central government – less common, mostly under exceptional circumstances.
Guaranteed beneficiary (borrower)	SOEs, subnational entities, public banks, investment and development banks, other public entities – common practice. Private parties, individuals – less common, mostly under exceptional circumstances.
Underlying instrument subject to guarantee	External loans from foreign lenders – common practice Domestic loans – less common, mostly under exceptional circumstances.
Triggering event crystalising the contingent liability	Borrower's default on its payment obligations (principal, interest or other) under the guaranteed loan.
Legal basis	Guarantee agreement between the government (guarantor) and the creditor signed and ratified in accordance with the legal framework.
Nominal exposure	Debt outstanding and disbursed (DOD) including any interest accrued and not paid at the time of reporting.

2.1.2 How to identify exposures from loan guarantees

The ministry of finance should develop a database to capture all guarantees, i.e. guarantees that are currently in force, and ongoing disbursement and repayment periods issued by the ministry of finance and any other central government institution or agency or individual representing the central government. The recommended database should at least capture, for each loan guaranteed, the following aspects:

- Agreement signature and effectiveness dates, lenders and beneficiaries of loan guarantees (qualitative information).
- Loan and guarantee terms – maturity, principal and interest repayment terms (term information), including the main clauses defining the step-in conditions.Nominal loan amounts and the guaranteed loan amounts (in case of partial guarantees), in domestic currency and foreign currency (for foreign currency loans).
- Disbursements, repayments and any undertakings by the government as guarantor in domestic currency and foreign currency (for foreign currency loans).
- Debt outstanding and disbursed in domestic currency and foreign currency (for foreign currency loans).

Records of historical data on closed guarantees should also be archived for analysing past payment performances of the beneficiaries when deciding over new guarantees. A centralised database consolidated under the sole issuer of guarantees (e.g. ministry of finance) is more effective and efficient.

2 One-off guarantees are also called 'individual guarantees', but this term is sometimes misunderstood as referring to guarantees provided to individuals.

2.1.3 Other one-off guarantees

The other common one-off guarantees are bond guarantees and **exchange rate guarantees**.

Bond guarantees are regarded as the same as loan guarantees. The only difference is that the underlying financial instrument is a bond or other government security instead of a loan. Nominal exposures to bond guarantees can be established in the same manner as the loan guarantees, i.e. by compiling the stock data (amounts to be redeemed by the issuer of the bond on the due date) of the active bond guarantees. In bond guarantees, the bond issuer's repayment obligations to the bondholders are guaranteed by the government.

Exchange rate guarantees are promises by the government to compensate a borrower – typically a public corporation or a financial institution – for losses on their foreign currency borrowings due to exchange rate fluctuations.

2.1.4 Standardised guarantees

Standardised guarantees (or guarantee/insurance schemes) are guarantees that are issued in large numbers, for relatively small amounts compared to loan guarantees, along similar loan and guarantee terms. These guarantees can be grouped into umbrella (programme) guarantees and government-sponsored insurance schemes.

2.1.5 Programme guarantees

Programme guarantees are guarantees provided to large groups of beneficiaries for specific types of loans – for example, mortgage (housing) loans, student loans, small and medium-sized enterprise (SME) loans, and export credits. By calculating the default rate from the pool of loan guarantees, the guarantor public entity should establish a debt liability and provision for this liability in the budget, rather than an off-budget contingent liability. In this regard, programme guarantees for which governments make provisions in the budget based on the default rates, should be treated as direct liabilities rather than contingent liabilities.

Programme guarantees are usually administered by specialised agencies or institutions, such as an external credit agency (ECA), a housing fund or a credit guarantee fund. These agencies act as intermediaries between the central government support and the banks, through which the end-beneficiaries use the guaranteed loans. Some programmes are run through the banks by the ministry of finance. As there are many beneficiaries involved, individual guarantee applications are evaluated within the programme parameters at the agency or participating bank level, rather than by the ministry of finance.

Table 3: Characteristics of programme (umbrella) guarantees

Guarantor/counter-guarantor	These are usually multi-level schemes where the central government through the ministry of finance can support the scheme as guarantor or counter-guarantor.
Guaranteed beneficiary (borrower)	The end-user/beneficiary is a student/exporter/SME/other household, depending on the programme. A specialised agency or fund such as an ECA for export credits or credit guarantee fund (CGF) for SME credits can intermediate the facility and/or be the beneficiary of the central government guarantee or counter-guarantee.
Underlying instrument subject to guarantee	Domestic loans for housing and student loans, domestic and external loans for export and SME credit facilities.
Triggering event crystallising the contingent liability	Default by the end-user is the triggering event. The mechanism triggering the actual payment from the central government depends on the specifics of the programme.
Legal basis	In the legal framework, usually a secondary legislation provides for the processes of programme administration.
Nominal exposure	DODs of programme loans on which a government guarantee is contracted. In the case of a cap over the government support to the programme, the exposure is limited with this amount even when the total amount of guarantees provided is higher.

2.1.6 Identify nominal exposures from programme guarantees

A database should be developed covering all umbrella guarantee programmes – i.e. programmes in effect, within ongoing programme periods – supported by the ministry of finance and/or any other central government institution.[3]

The database should at least provide for:

- The list of all programmes to which a central government guarantee or counter-guarantee is explicitly provided through legal framework.
- Nominal loan amounts guaranteed or counter-guaranteed by the central government.
- Disbursements, repayments and any undertakings by the government as guarantor.
- Debt Outstanding and Disbursed (DOD).

Some computer debt management systems have modules for capturing guarantees. The systems are recommended as they come with data protection mechanisms that are key to ensuring data protection and integrity.

2.1.7 How to manage fiscal risks from programme guarantees

Regardless of the existence of an intermediating agency, the ministry of finance should monitor the costs and risks of programme guarantees on behalf of the central government. The specialised agencies or banks should regularly report the data on issuance and cash flows on loans supported by the scheme, the defaults and the balance – the nominal exposure – of the guaranteed loans.

The programmes should have clearly set objectives. The guarantee support mechanism and any limit to it should be described clearly through the legislative documents enacted by the central government. The programmes' performances should be closely monitored, audited and shared with the public and parliament. To avoid any unexpected fiscal burden from these programmes, yearly provisioning for the expected losses through the budget process should be provided.

2.1.8 Government-sponsored insurance programmes

Government-sponsored insurance programmes are guarantee programmes designed to provide insurance coverage for low-frequency but high-impact events like bank failures, floods, earthquakes and terrorist activities, where the form and amount of government support or intervention are pre-described explicitly by law.

These events are sources of large implicit contingent liabilities as the government would have to make relief payments to different segments of the society even if these are not stipulated in the legal framework ex ante, e.g. before the earthquake. A disaster insurance programme provides ex ante financial measures aimed at increasing governments' readiness for and protection against losses expected from certain disastrous events.

In some insurance schemes, the government directly plays the role of an insurance provider (self-insurance) while in others it might choose to purchase insurance from private insurance companies (market insurance). In the latter case, the event risk is transferred to the private sector while the risk premiums are paid out of the government budget without creating any explicit contingent liability but direct commitments. However, there are various different forms of government insurance schemes falling between self-insurance and market insurance, depending on the source of risk, availability of market for providing insurance against this risk and the policy objectives of the government.

Government deposit insurance is one of the most important and widely applied mechanisms. Deposit insurance systems offer protection to the depositors' savings by guaranteeing deposits up to a certain amount, and help prevent the mass withdrawal of deposits in the case of a bank failure. In the last few decades, deposit insurance programmes have been run by autonomous or central bank-affiliated deposit insurance administrations and funded by the risk premiums collected from the banks. In other words, the system is funded by the banks themselves, rather than government funds.

Crop insurance is another common example of a government insurance scheme, where the government guarantees recovery, in full or part, of loss incurred by the beneficiary farmers under certain predetermined conditions.

[3] Umbrella guarantees issued by institutions outside of the central government, such as the central bank, create fiscal risk exposure for the central government as implicit contingent liabilities.

Table 4: Characteristics of Government-Sponsored Insurance Programmes

Guarantor/insurer/reinsurer	These are in most cases multi-level schemes where the central government through the ministry of finance or other ministry can support the scheme as guarantor/insurer/reinsurer directly or through an agency administering the programme.
Beneficiary	Depending on the specific insurance programme, the end beneficiary can be an individual or a firm.
Underlying instrument subject to guarantee/insurance	In most insurance programmes, there is no underlying financial instrument; post-damage support is provided mostly in cash outlays.
Triggering event crystallising the contingent liability	A crisis or catastrophic event whose extent is so large that it calls for government intervention, such as a systemic financial crisis, large-scale flood, or earthquakes.
Legal basis	The legal framework sets the central government support to the insurance programmes.
Nominal exposure	This depends on the specifics of the programme. Actuarial calculations can be reported to central government to estimate the exposures expected in the case of realisations.

2.1.9 Identifying nominal exposures from government-sponsored insurance programmes

A database should be developed covering all government-sponsored insurance programmes – i.e. programmes in effect, within ongoing programme periods – supported by the ministry of finance and/or any other central government institution.

The database should at least provide for:

- The list of all insurance programmes to which a central government guarantee/insurance/reinsurance is explicitly provided through the legal framework.
- Nominal amounts insured/reinsured per beneficiary, if applicable.
- Calculations of estimated exposures based on historic realisations or actuarial calculations taking into account the premium-based resources of the programmes.

2.1.10 How to manage fiscal risks from government-sponsored insurance programmes

Government-sponsored insurance programmes create uncertain financial obligations in public finances, as is the case for other contingent liabilities. The risk-bearing capacity of the government needs to be analysed before engaging it in government-sponsored insurance programmes. The government's fiscal position, budgetary flexibility and public debt sustainability, as well as the ability to have access to financing resources in post-disaster conditions, are important factors to consider before incurring the cost of insurance. In addition, a technical assessment is recommended to monitor and calculate the probability of the disastrous event occurring.

Clear legislative frameworks, defining the role of government within insurance programmes and ensuring regular co-ordination among relevant stakeholders and public debt managers, should be made.

2.1.11. PPP guarantees[4]

PPP is a model of procurement for public investment, which is an alternative method to traditional public procurement. There are various forms of government support embedded in complex PPP contracts, some of which are direct and some of which are contingent upon the occurrence of certain events. In this framework, PPP-explicit contingent liabilities cover those contingent commitments which are based on contracts signed by central government institutions for the PPPs.

The main contingent liabilities under PPPs are:

- Financial guarantees, in the form of loan guarantees covered above or refinancing guarantees extended to the project companies under which the government guarantees the lenders that it will service their debt if the PPP company fails to do so.
- Revenue guarantees, where the government guarantees the project company a certain level of usage of the services to be provided by the latter.
- Exchange rate guarantees, which means the government assumes the exchange rate risk of the project company.
- Termination payments, which are government commitments to pay the project company a certain amount

4 There are also non-contractual or implicit PPP liabilities, which materialise mostly when politically important projects are bailed out by governments, or when governments have to renegotiate PPP contracts. They also emerge from direct fiscal commitments of governments under PPPs. For example, upfront capital contributions or availability payments of governments committed during the life of the project are not covered on the grounds that these are not contingent but direct liabilities of the government. These long-term direct fiscal commitments are also important sources of fiscal risk and should be monitored closely for ensuring fiscal sustainability.

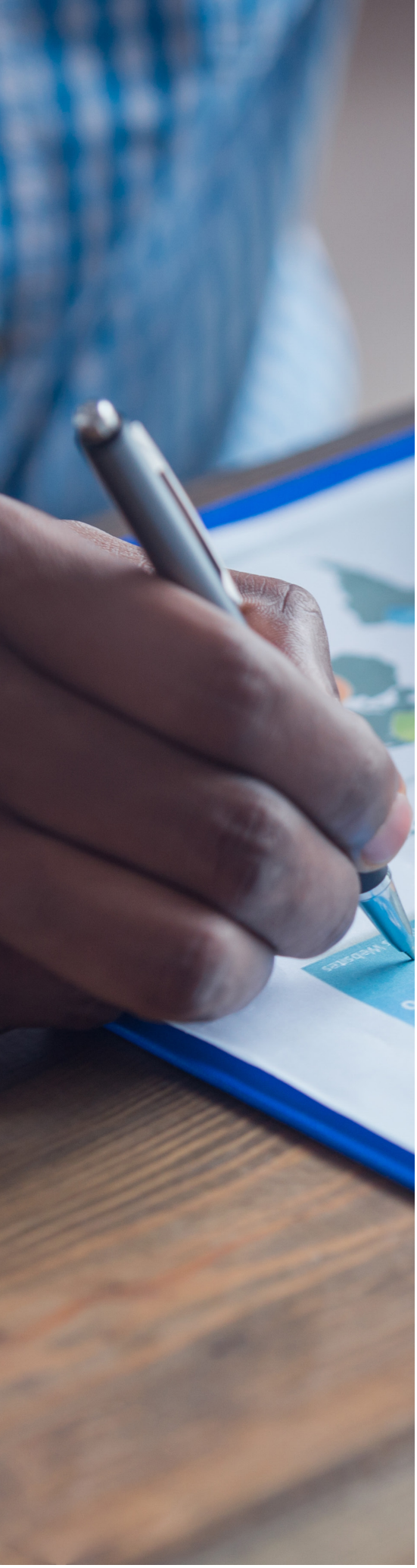
if the contract terminates prematurely. The principle is that this amount corresponds to the value of the project assets, but in some cases the government commits to pay a certain portion of the debt outstanding to the lenders. A fair contract should ensure the private party does not lose out if the public party chooses to default. Termination payments in this case are typically set to the value of debt plus some measure of equity, and may also include lost future profits (if any).

— Debt assumption commitments, where the government agrees to assume the debt obligations of the project company in the case that the PPP contract is terminated. Compared to the termination payments, the debt assumption commitments are towards the lenders, not the project company.

— Guarantees extended to the commitments provided by non-sovereigns (non-sovereign creditworthiness guarantees), which aim at increasing the creditworthiness of commitments provided by non-central government entities.

Table 5: Characteristics of PPP Guarantees

Guarantor/provider	Central government through ministry of finance – recommended practice. Other central government agencies/line ministries – observed in decentralised structures.
Guaranteed beneficiary (borrower)/ beneficiary	SPV (project company) or SOEs/subnational entities in the case of counter-guarantees.
Underlying instrument subject to guarantee	Loans and bonds in the case of refinancing guarantees and debt assumption commitments and in some sub-sovereign, guarantees, cash outlays in revenue, exchange rate and termination payment commitments.
Triggering event crystallising the contingent liability	SPV revenues falling under agreed threshold in revenue guarantees. Exchange rate rising above guaranteed level in exchange rate guarantees. Early termination of the project in termination payments and debt assumption commitments. Default by the sub-sovereign entity on its payment obligations in creditworthiness guarantees.
Legal basis	PPP legal framework and the financial and guarantee contracts signed among the implementing ministry, lenders, SPV and the government as guarantor.
Nominal exposure	Given the different characteristics of the guarantees provided under the PPPs, exposure under each project and the portfolio of the projects should be calculated accordingly. Nominal DODs of debt financing of the project if guaranteed and the maximum exposures for demand guarantees and exchange rate guarantees forms the total exposure amounts.



2.1.12 Identifying nominal exposures from PPP guarantees

A database should be developed covering all PPP projects with explicit government guarantees – i.e. projects within investment and operation periods – issued by the ministry of finance and/or any other central government institution. A central registry of all PPP commitments should be maintained.

The database should at least provide for:

Qualitative information about the PPP portfolio: projects, objectives, names of the lenders, project companies, line ministries, etc.

- Investment and operation periods of the projects.
- Guarantees and other contingent liabilities under each project.
- DODs of the guaranteed loans and bonds.
- Nominal debt stocks subject to debt assumption commitments.
- Nominal termination payment commitments.
- Nominal minimum revenue commitments.
- Current situation vis-à-vis exposures of exchange rate guarantees.

2.1.13 How to manage fiscal risks from PPP guarantees

PPP risks need to be mitigated and effectively managed. Contingent liabilities issued as part of the PPP contracts should be centrally monitored to ensure fiscal and debt sustainability. While the DMOs are less involved in practice in the management of PPPs, it is recommended that a central government unit should analyse the PPP guarantees to inform the decision-making authorities about the associated costs and risks. In this regard, the public debt manager's credit risk assessment, management and mitigation expertise might prove useful and complement the budget authority's perspective of fiscal affordability.

Guarantees and other contingent commitments such as termination payments or debt assumption commitments change the risk allocation between the public and the private parties. Therefore, the need for quantifying PPP guarantees is at the centre stage both at the decision-making (choice of PPP model over traditional public procurement) stage and the project implementation stage.

Key players and their roles in PPP governance[5] include the following:

- **Procuring/contracting authority:** Responsible for the project, including the preparation, negotiation and administration of the contract, and monitoring and evaluating contract performance during the construction and operation phases.
- **PPP unit:** Equipped with specific skills to ensure value for money and to help the authorities, especially the procuring authority, to design, manage and evaluate the project efficiently.
- **PPP company (SPV):** Private sector company responsible for undertaking the PPP project. The company is assigned this duty by the procuring authority through competitive bidding.
- **Audit institution:** Conducts the ex post auditing and assessment of the PPP and reports to the parliament.
- **Central budget authority:** Central budget institution to monitor and check the project throughout its key phases: planning, feasibility, design, bidding, contract execution, construction and operation. (In order to avoid conflict of interest, it should be the central budget authority that has the power to decide whether to go on with the project, not the PPP unit.)

5 Source: OECD, Recommendation of the Council on Principles for Public Governance of Public-Private Partnerships, 2012.

2.1.14 Legal claims against state

Legal claims against state refer to the contingent liabilities arising from court cases that feature claims against the government institutions. Individuals, companies and foreign investors may sue the governments for various reasons, to the effect of receiving financial claims. Governments may also face international arbitration cases based on the contracts they sign with foreign stakeholders in various sectors. Settlements ruled against the government in favour of the third parties result in unexpected payments from the budget. This is therefore a major source of fiscal risk and a source of contingent liability from the viewpoint of central government.

Table 6: Characteristics of Legal Claims against State

Guarantor/provider	Any central government unit/entity that has to pay out these liabilities in the case of court rulings.
Beneficiary (plaintiff)	The payment may occur to any individual/entity/company who wins a court case against the government.
Underlying instrument	No underlying instrument – cash layouts occur after the court ruling.
Triggering event crystalising the contingent liability	Decision by the court against central government.
Legal basis	The legal system in the country.
Nominal exposure	The total of the foreseeable amounts of all financial claims against the central government subject to open cases in courts.

2.1.15 Identifying nominal exposures from legal claims against state

A database should be developed covering all open court cases with financial claims from the central government agencies or ministries. This database should be updated at regular intervals. Regular reporting from the ministry of justice/attorney general's office can be provided for, ensuring the necessary data flow to the ministry of finance. Data also needs to be collected from tribunals and arbitration courts on impending cases. Legal branches of all central government ministries and agencies can be coordinated for, providing access for the ministry of finance to the related data.

2.1.16 How to manage fiscal risks from legal claims against state

Quantifying maximum exposures from the pending legal claims against government can be possible through data collection, at least for the cases where the claims are quantifiable. However, the high degree of subjectivity that might be involved in the probabilities of occurrence and their timing render the estimation efforts challenging. The government may employ statistical models to estimate the fiscal costs from their legal cases. It can make use of a registry of detailed historical data to estimate future probabilities through a regression. Developing and monitoring a database of ongoing legal proceedings can help anticipate the materialisations and provision for expected losses in a timely manner.

2.2. Implicit contingent liabilities

As per the definition given in the Introduction, governments do not recognise implicit contingent liabilities until a particular event occurs, which is mostly a large-scale crisis or a natural disaster. While the financial system constitutes the most common source for these liabilities, it is quite common to see governments covering losses or debt obligations of SOEs and subnational governments, and sometimes those of large private corporations or pension funds which are too big to fail for the economy. Disaster relief payments incurred following natural disasters is another important type of implicit contingent liabilities.

Fiscal risks from these liabilities are more difficult to quantify than those from explicit liabilities, because of their implicit nature. The most prominent sources of these liabilities will be introduced in this section of the Guidelines (there are also other sources that are not covered here).

2.2.1. Non-guaranteed debt of SOEs or subnational government

Non-guaranteed debt of SOEs is one of the main sources of contingent liabilities in countries within the MEFMI region. Non-guaranteed debt of subnational entities can be considered within the same category. These liabilities are defined as implicit contingent liabilities, as these institutions borrow on the strength of their own balance sheet in normal circumstances without any central government guarantee issued, yet may fail to fulfil their payment obligations causing the central government to step in through various forms of payment support or bail-out. In addition, when SOEs are privatised, some of the liabilities may be taken over by the Government. The liabilities may include expenses due, incurred debt, redundancy payments and pensions accrued for staff that would be made redundant under the private organisation. Thus, the privatisation results in a liability takeover of liabilities with no previous guarantees issued by the central government.

Table 7: Characteristics of Non-guaranteed Debt of SOEs or Subnational Governments

Guarantor/provider	No explicit guarantee or guarantor exists until the triggering event. Central government steps in to provide financial support or take-over liabilities in the process of privatisation ex post.
Guaranteed beneficiary (borrower)/beneficiary	SOEs or subnational entities that are in financial trouble, or SOEs in the process of privatisation.
Underlying instrument subject to guarantee	No underlying instrument guaranteed ex ante; direct transfers, capital injections, government securities or loan or bond guarantees, debt assumption may be provided.
Triggering event crystallising the contingent liability	SOE or subnational entering into serious financial trouble requiring step-in by central government or privatisation of the SOE.
Legal basis	No legal basis until the triggering event, legal framework is established after or during the step-in process.
Nominal exposure	The sum of direct and contingent debt liabilities of all the SOEs and subnationals.

2.2.2 Identifying nominal exposures from non-guaranteed debt of SOEs or subnational governments

A database should be developed covering all debt and contingent debt obligations, and all financial liabilities of the SOEs, subnational entities and other public entities that have the authority to borrow from both foreign sources and domestic financing sources and the authority to issue contingent liabilities of their own. The legal framework can also be designed to provide for the regular flow of financial data from the SOEs and subnational governments to the central government. The team managing the contingent liabilities in the ministry of finance can have access to the related data through the departments responsible for the SOE and subnational oversight within or outside the ministry.

2.2.3 How to manage fiscal risks from non-guaranteed debt of SOEs or subnational governments

Strengthening the financial and operational oversight of the SOEs and subnationals is key for mitigating the fiscal risks from these entities; both for managing guaranteed (explicit) and non-guaranteed (implicit) liabilities. The financial position and operational performances of these entities should be closely monitored through reports received at regular intervals.

Establishing fiscal rules to limit the borrowings of these entities from domestic and foreign financing sources is a recommended sound practice to provide direct controls over the fiscal risk. Setting a permission requirement from the ministry of finance for non-guaranteed borrowing on a case-by-case basis also helps governments ensure fiscal and debt sustainability of SOEs and subnationals. Credit risk assessment mechanisms employed for guaranteed loan applications from these entities can also be employed for non-guaranteed borrowing applications to provide for informed decision-making processes and fiscal discipline.

2.2.4. Uninsured Damages from Natural Disasters

The damages caused by natural disasters including pandemics and epidemics range from losses in human and physical capital to financial costs associated with emergency, rehabilitation and reconstruction efforts. These costs are to a large extent covered by the public resources both in the immediate aftermath of the event and during the recovery phase. Thus, it is important to be able to estimate the prospective fiscal costs of natural disasters to design strategies for risk mitigation and cost financing.

Table 8: Characteristics of Uninsured Damages from Natural Disasters

Guarantor/Provider	No explicit guarantee/guarantor exists until the triggering event, central government steps in as relief support provider ex-post
Guaranteed Beneficiary (Borrower) / Beneficiary	Any individual or economic agent can be the beneficiary of the disaster relief support depending on the specific consequences and the magnitude of damage beyond insurance coverage.
Underlying instrument	No underlying instrument ex-ante, relief measures can take the form of cash transfers, government securities transfers, credit lines or guarantees.
Triggering event crystallising the contingent liability	Natural disasters such as earthquakes, floods, droughts, health crisis such as pandemics
Legal basis	No legal basis until the triggering event, legal framework is established after or during the catastrophic event.
Nominal exposure	Disaster relief payments realized during past realized disasters and the disaster risk calculations conducted by the specialised agencies and the ministry of finance might set an estimated exposure.

2.2.5 Identifying uninsured damages from natural disasters.

Establish a database covering past realizations of natural disaster relief efforts, and uninsured damage estimations through disaster risk management strategy documents when available.

The responsibility of data collection is usually given to a specialised unit or administration within the government. This specialised administration ideally possesses the capacity to estimate the likelihood of future occurrences of disastrous event, based on technical expertise. Ministry of finance can collaborate with the related administration/administrations to prepare cost financing strategies and conduct debt sustainability analysis with stress tests including such events as shocks.

2.2.6 How to manage fiscal risks from uninsured damages from natural disasters

Disaster relief plans or strategies need to be prepared by the involvement of all the relevant stakeholders, including the ministry of finance with a fiscal risk and sustainability perspective. Before-event (ex ante) measures of the strategy may include government-sponsored or private insurance programmes covered above. Early warning systems at the country and regional level also increase preparedness for disasters. Preparation of a disaster risk financing plan with possible funding sources and instruments should be an important part of the after-event (ex post) measures including the financing of disaster risks.

2.2.7. Financial sector implicit contingent liabilities

Financial crises are among the costliest contingent liabilities as intense public interventions are required from bail-out packages for the banking sector to provide liquidity for the financial sector. Although this public intervention is very costly and causes large increases in budget deficits and debt stock, the cost of not intervening is much higher for the economy.

Table 9: Characteristics of Financial Sector Implicit Contingent Liabilities

Guarantor/provider	No explicit guarantee/guarantor exists until the triggering event, central government steps in as support provider ex post.
Guaranteed beneficiary (borrower)/beneficiary	Banks, financial intermediaries, individuals.
Underlying instrument	No underlying instrument guaranteed ex ante; direct transfers, government securities or loan/bond guarantees may be provided as part of the bail-out efforts.
Triggering event crystallising the contingent liability	Systemic banking system or larger financial system crisis, bank runs, single bank failures.
Legal basis	No legal basis until the triggering event, legal framework is established after or during the financial/banking crisis.
Nominal exposure	It is difficult to quantify the exposure of central government yet banking sector liabilities not covered by the deposit insurance funds can be reported as the gross exposure.

2.2.8 Identifying nominal exposures from financial sector implicit contingent liabilities

It is difficult to identify and quantify a gross exposure of the central government to the financial system. This is mainly due to the implicit nature of the liabilities that occur during systemic banking or financial crises. In addition, the fiscal cost of a financial crisis depends on the size of the financial sector, the likelihood of financial crises and their magnitude, and the time and nature of the government's intervention. However, central banks, banking sector prudential regulation and supervision agencies, and international financial institutions including the IMF and Basel Committee on Banking Supervision of the Bank for International Settlements (BIS) monitor prudential regulations and financial system stability in a particular country through various platforms and mechanisms.

There are certain risk indicators, such as capital adequacy ratios or non-performing loan ratios, monitored for assessing banking sector soundness. Considering that the banks are not the only players in the financial system, macro prudential monitoring needs to be institutionalised to provide for the monitoring of the financial system as a whole, in an integrated manner – including its products and markets – to identify vulnerabilities or events that represent potential risks to the stability and normal operation system.

2.2.9 Managing fiscal risks from financial sector implicit contingent liabilities

Management of fiscal risks that potentially arise from the financial system implicit contingent liabilities requires an orchestrated effort by the institutions – central bank, ministry of finance, prudential regulation and supervision administration, and deposit insurance administration, among others – and inter-agency committees established to this effect.

Macro prudential regulations aimed at increasing institutional capacity in financial markets and preventing excessively risky behaviour from financial institutions help reduce the frequency of financial system crises. Incorporating financial sector stress testing into the debt sustainability analysis as a source of contingent liability can provide for the preparedness of the government for a shock scenario over public debt sustainability.

2.2.10 Private sector non-guaranteed debt

In times of crisis certain corporations are supported and saved from liquidation when considered systemically important (too big to fail) to the economy. The government considers bailing out the business or even an entire sector, such as insurance companies or large car industries, to prevent wide-scale economic disaster. Some of the big corporations may be taken over and their future loan payments guaranteed by the government.

Table 10: Characteristics of Private Sector Debt (Non-guaranteed)

Guarantor/provider	No explicit guarantee/guarantor exists until the triggering event, central government steps in as support provider ex post.
Guaranteed beneficiary (borrower)/beneficiary	No explicit guarantee, beneficiary of support is the private company considered too big to fail.
Underlying instrument	No underlying instrument guaranteed ex ante; direct transfers, government securities or loan/bond guarantees may be provided as part of the bail-out efforts.
Triggering event crystallising the contingent liability	A privately owned company, which is considered systemically important by the government, falling into financial trouble.
Legal basis	No legal basis until the triggering event, legal framework is established after or during failure of the private company.
Nominal exposure	Due to moral hazard issues, it is not feasible to report on nominal exposures, yet critically important sectors and industries can be given strong oversight.

2.2.11 Identifying nominal exposures from non-guaranteed private sector corporate debt

Due to moral hazard issues, it is not feasible to report on nominal exposures. Private sector players should not be informed of the government's intentions to bail them out. Identification of nominal exposures requires close monitoring of the private sector domestic and external debt databases which are collected by the central bank or other government statistical units.

2.2.12 Managing risks from non-guaranteed private sector corporate debt

From a market development perspective, governments can aim at creating an enabling environment to ensure that markets develop in a diversified way that reduces instances of 'too big to fail'. It is important to monitor the financial performance and stability of large pension funds and life insurance corporations in the private sector as financial crises can also lead to insolvencies of these corporations. Reviewing and monitoring the actuarial or financial reports of these corporations on a regular basis will give the contingent liability manager some insights into the financial position of these corporations. It is the responsibility of the contingent liabilities manager to be aware of the current and likely future situation and work closely with the relevant institutions. This will help to reduce the number of failures and, when failure occurs, to estimate the consequential fiscal costs.

3. MANAGING LOAN GUARANTEES AND ON-LENDING

In this section, loan guarantees and on-lending will be examined to guide countries in their efforts to bring standards to and manage risks from these financial support instruments.

3.1 Legal and Institutional Framework for managing guarantees and on-lending

This section outlines the key components of legal frameworks and highlights the recommended institutional arrangements for the effective management of loan guarantees and on-lending.

3.1.1 Legal framework

Loan guarantees and on-lending are typically regulated through different levels of legislation, consisting of:

3.1.1.1 Constitution

A government's authority to borrow, lend and issue guarantee is vested in the constitution in most countries. In addition, the constitution of some of the MEFMI countries prescribes that there should be primary legislation that provides powers, conditions and other general principles related to the issuance of guarantees and on-lending.

3.1.1.2 Laws (or acts) made by the legislature (primary legislation)

General principles are provided by primary legislation, as well as the powers for further regulation which are enacted by parliament/congress. Provisions of acts can only be changed by new acts. The legal clauses pertaining to loan guarantees and on-lending are usually included in public debt management laws. These may appear in independent debt management laws or as part of other laws such as public financial management law, budget and accountability laws or fiscal responsibility laws. In some cases, there is a separate law for loan guarantees or loan guarantees and on-lending.

3.1.1.3 Subordinate regulations (secondary legislation)

Secondary legislation includes regulations with more detailed provisions than those of the laws, often formulated by the government department charged with implementation of these provisions to operationalise the primary legislation. The authority to prepare secondary legislation is determined in a country's base laws.

3.1.1.4 Directives, guidelines and policy statements

These can be considered as a fourth group which does not have legal effect, and as such they are not considered part of legislation but help governments establish the rules and standards for the management of loan guarantees and on-lending.

In general, the whole legislative framework should:

- include clear and precise clauses and sub clauses
- avoid duplication and excessive interpretations
- ensure clear mandates, responsibilities and accountability.

Figure 3: Legal Framework for Loan Guarantees and On-lending

3.1.2 Key provisions in the legal framework for loan guarantees

Major areas, roles and matters to be regulated in primary and secondary legislation pertaining to loan guarantees include the following:

3.1.2.1 Mandate (who has the authority to issue loan guarantees?)

The minister of finance or their designate is typically the authority to issue loan guarantees and other forms of guarantees on behalf of a government. The minister's mandate is given by a provision in law approved by the parliament and is based on a general authority of the government to borrow, lend and guarantee, typically mentioned in the constitution. In some countries, the guarantee or on-lending is issued by the line ministry with the final approval/concurrence mandated to the minister of finance.

3.1.2.2 Parliamentary/national assembly approval

Parliaments enact the legislation for government issuance of guarantees. Parliamentary approval is necessary to put into effect loan guarantee agreements. Approval from parliament may be required to waive any guarantee fee on an approved loan that may be normally levied.

3.1.2.3 Credit risk assessment

Recommended sound practice is to assess the credit risks prior to the issuance of any government loan guarantee. Thus, the primary legislation should include a clear provision for ensuring that this assessment will be conducted for each application by the issuing agency, typically the ministry of finance. The rules and procedures for the credit risk assessments shall be determined through a regulation to be issued by the ministry of finance.

3.1.2.4 Publication of the guarantee agreements

Publication of loan guarantee agreements in the official gazette provides for transparency in a government's guarantees and is recommended. Certain loan guarantees can be exempted from this requirement, such as guarantee agreements related to national defence and security.

3.1.2.5 Guarantee limits

An annual ceiling over nominal flow of new guaranteed issuances or stock of outstanding guarantees limits the credit risk exposure of the government and provides for fiscal discipline. Such ceilings can also be expressed in percentages of GDP/public debt/tax revenue of a certain year. To have the maximum binding effect, these limits can be set within budget laws.

3.1.2.6 Eligibility criteria for guarantee beneficiaries

The groups which are eligible to receive loan guarantees – private or public institutions or both – and what types of institutions or individuals are eligible should be clear. The list of eligible beneficiaries should be well defined and listed in the law.

3.1.2.7 Eligibility criteria for financial instruments to be guaranteed

The financial instruments eligible for guarantees, whether domestic or foreign financing, loans or bonds, or concessional or non-concessional facilities, should be indicated. Types and sources of financial instruments for which loan guarantees can be provided must be clearly stipulated by law.

3.1.2.8 Partial guarantees

The guarantee law usually provides for the government to provide loan guarantees in full or partially. The minister of finance may have the authority to decide whether to provide a guarantee for the whole or a certain part of the loan.

3.1.2.9 Collateral

The value and type of collateral to be placed as security should be indicated and is typically within the authority of the minister of finance in the legal framework, while the authority to decide whether to ask for collateral may rest with the parliament.

3.1.2.10 Purposes of guarantees

The purposes of providing government loan guarantees must be spelt out to cite, for example, supporting priority projects and increasing bankability of projects, which are otherwise not going to be financed by the lenders. Loan guarantees can be limited in the legal framework by their purpose.

3.1.2.11 Restrictions for issuance

Governments can restrict guarantee issuances by setting certain conditions. The conditions should be specified in the legislation, preferably in regulations. Legislation may also grant the minister of finance the powers to attach additional conditions when approving guarantees.

3.1.2.12 Guarantee fee

Ideally, a guarantee fee per annum on the disbursed outstanding balance should be charged to the beneficiaries, the level or percentage of which is determined by the credit risk assessment results of the particular guarantee. The law should make a clear provision for charging such a fee. The law should also provide for the waiver of fees and set out the conditions under which fees may be waived.

3.1.2.13 Expenses related to loan guarantee

The guarantee legislation should regulate the fee a beneficiary of a loan guarantee should pay to the government. This includes all expenses such as management fee, brokerage and arrangement fee, out of pocket expenses, etc. incurred by the government in arranging the guarantee.

3.1.2.14 Monitoring the loan guarantees

The legislation should compel the beneficiary of the guarantee, through its line ministry, to provide the ministry of finance with regular progress reports on the guaranteed loans, including disbursements, repayment projections and repaid amounts, to enable the monitoring of all the transactions on the guaranteed loans.

3.1.2.15 Recourse action when default takes place

Detailed rules governing the default should be included in the guarantee regulation. Recourse action to be taken when a default takes place should be indicated as within the authority of the minister in the legal framework, although default is regulated in detail in the guarantee agreements.

3.1.2.16 Application for a loan guarantee

The legal framework at the secondary legislation level, i.e. the guarantee regulation, should summarise the application process with clear provisions to standardise the application process.

3.1.2.17 Institutional mandates

The division of responsibility in the management of loan guarantees among different institutions involved should be clear in the legislation. If there are committees involved in the decision-making process, their roles and responsibilities must be provided for in the secondary legislation.

3.1.2.18 Authority to negotiate guarantee contracts

The institution, usually the ministry of finance, is given the authority of preparing, negotiating and amending the loan guarantee agreements by law. Typically, all kinds of preparations and negotiations relating to the loan guarantees, as well as amendments to the conditions of already provided guarantees, are executed and finalised by the ministry of finance.

3.1.2.19 Committees

In the case of committees in the institutional structure of managing contingent liabilities, the technical committee and a higher-level management committee should be clearly mandated by law, while their operating rules and procedures can be regulated by secondary legislation in the form of a regulation.

3.1.2.20 Responsibilities of the guarantee beneficiary

The responsibilities of the guaranteed beneficiaries should be established in the guarantee agreements signed with the government and also in the loan agreement signed with the lenders. All-important requirements from guarantee beneficiaries should be regulated in the legal framework, to provide for standards and increased compliance, including provision of data and reports by the beneficiaries. The data on the status on the guaranteed loan – disbursement, repayment schedules and actual cash flows – and any other should be required within a legislated timeframe.

3.1.2.21 Responsibilities of the ministry of finance

The different tasks in the guarantee management processes, such as conducting credit risk assessments, monitoring post-issuance credit risk profiles of beneficiaries, and recording and reporting cash flows and credit risk should be provided for in the secondary legislation. It should be set out in the law that the ministry of finance is the sole authorised entity to process, issue and manage central government contingent liabilities and on-lending. The ministry of finance should also be tasked with issuing guarantee regulation, by law. The regulation includes more detailed rules and procedures on the processes of loan guarantees. The regulation may be approved by the cabinet (council of ministers) or the parliament and should be published in the official gazette.

3.1.2.22 Receivables

The law should vest the power to administer receivables from loan guarantees to the minister of finance. The minister of finance should be authorised to determine the conditions for, to collect, to pursue and administer, by using all kinds of financial techniques, the claims arising from the loan guarantees undertaken by the ministry of finance.

3.1.2.23 Contingency reserve account

Contingency reserve accounts should be established by legally binding provisions and their working and administration arrangements should be stipulated in the regulations. These details could be in the public financial management laws and regulations. Contingency reserve accounts, where retained earnings could be set aside to guard against possible future losses, are useful risk management tools in the management of contingent liabilities.

3.1.2.24 Reporting and disclosure

The law should require reporting and disclosure by both the beneficiary and the issuer (ministry of finance), so that they regularly report to all stakeholders on the status of all previous and ongoing guarantees, as well as any future application on guarantees and any payment difficulties expected. The two bases of reporting – statistical and accounting – should be present in all countries as standard and enforced through the legal framework.

3.1.3 Legal framework for on-lending

The major areas to be regulated in primary and secondary legislation pertaining to on-lending transactions are largely similar to legislation for guarantees and are the following:

3.1.3.1 Mandate

It is typically the minister of finance who has the authority to on-lend loans to the parties who are eligible as would be provided in the legal framework. The minister's mandate is given by a provision in law approved by the parliament and is based on the general authority of the government to borrow, lend and issue guarantees, provisioned in the constitution.

3.1.3.2 Parliamentary/national assembly approval

Parliament enacts the law and may approve on-lending transactions. Approval may be required on the terms and conditions of the arrangement stipulated by the minister. Parliamentary approval is usually sought for all external loans either individually or collectively.

3.1.3.3 Credit risk assessment

The primary legislation should include a provision for ensuring that a credit risk assessment is conducted in each on-lending application. The assessment of the credit risks prior to the issuance on-lending is recommended. The rules and procedures for the credit risk assessments shall be determined through a regulation to be issued by the ministry of finance.

3.1.3.4 On-lending limits

The limit for on-lending can be formulated as a limit for 'loan guarantees and on-lending' through the provisions in the legal framework. However, the common practice is to limit on-lending through the general borrowing limit or public debt ceiling, rather than a separate on-lending limit. An annual ceiling over nominal flow of new on-lending or stock of outstanding on-lent loans limits the credit risk exposure of the government.

3.1.3.5 Terms of on-lending

The minister of finance should be authorised in secondary legislation to stipulate the terms and conditions of the on-lent loan agreement, which may be different from the original loan's terms and conditions. The government can on-lend the loans contracted from the lenders with the same conditions or with different conditionality to the on-lending beneficiary.

3.1.3.6 Eligibility criteria for on-lending beneficiaries

The list of eligible beneficiaries should be clearly defined and listed in the law.

3.1.3.7 Eligibility criteria for financial instruments to be on-lent

Types and sources of financial instruments for which on-lending can be provided should be clearly stipulated by law, whether domestic or foreign financing, loans or bonds, concessional or non-concessional facilities, etc.

3.1.3.8 Partial on-lending

Unlike loan guarantees, legislation should not provide for partial on-lending to single beneficiaries but be transferred to the on-lending beneficiary in full. However, legislation should provide for a loan to be on-lent to more than one on-lending beneficiary, through separate on-lending agreements with the beneficiaries, with fees charged that correspond to the on-lent amounts separately.

3.1.3.9 Collateral

In the legislation, the minister's authority in determining the amount and type of collateral to be placed as security against a background of potential default can be spelt out.

3.1.3.10 Purposes of on-lending

The legislation may prescribe the authorised purposes under which on-lending may be provided. These could include supporting priority projects, increasing bankability of projects which are otherwise not going to be financed by lenders. On-lending can be limited in legal framework by their purpose.

3.1.3.11 Restrictions for issuance

Governments can restrict on-lending through specification in the legislation of certain conditions.

3.1.3.12 On-lending fee

The secondary legislation should provide general guidance on the applicable fee and criteria of its computation. Ideally, an on-lending fee per annum on the disbursed outstanding balance should be charged to the beneficiaries, the level or percentage of which is determined based on cost of credit on private markets and the credit risk assessment of the particular on-lending transaction. An adjustable risk margin can also be added. Other expenses and fees such as management fee, brokerage and arrangement fee, out of pocket expenses, etc. can also be described and standardised in the on-lending regulation.

3.1.3.13 Application for an on-lent loan

The legal framework, at the secondary legislation level, should summarise the application process, with clear provisions to standardise the application process.

3.1.3.14 Institutional mandates

The legislation should clearly outline the division of responsibility in the management of on-lending among different institutions involved where they are not centralised in one institution.

3.1.3.15 Authority to negotiate on-lending contracts

The ministry of finance is typically given the authority in the law of preparing, negotiating and amending the loan agreements (primary loan) and on-lending agreements (subordinate loan).

3.1.3.16 Committees

Where committees, technical or managerial, are established in the on-lending process for activities such as credit risk assessments or assessment of and decision making on on-lending applications, their role and authority should be provided for in the legislation.

3.1.3.17 Responsibilities of the on-lending loan beneficiary

The responsibilities of the on-lending beneficiaries should be established in the on-lending agreements signed with the government. All-important requirements from on-lending beneficiaries should be regulated in legal framework, to provide for standards and increased compliance, including provision of data and reports by the beneficiaries. The data on the status of the on-lent loan – disbursement, repayment schedules and actual cash flows – and any other should be required within a legislated timeframe.

3.1.3.18 Responsibilities of the ministry of finance

The different tasks of the ministry of finance should be clearly written in on-lending management processes. The different tasks in on-lending management processes, such as conducting credit risk assessments, monitoring post-issuance credit risk profiles of beneficiaries, and recording and reporting cash flows and credit risk, should be provided for in the secondary legislation. It should be set out in the law that the ministry of finance is the sole authorised entity to process, issue and manage central government contingent liabilities and on-lending. The ministry of finance is also tasked with issuing on-lending regulation, in the law. The regulation includes more detailed rules and procedures on the processes of on-lending. The regulation is approved by the cabinet (council of ministers) or the parliament and should be published in the official gazette. The ministry should also have authority by law to issue on-lending regulation.

3.1.3.19 Monitoring the on-lent loan

The legislation should provide that the beneficiary of the on-lending, through its line ministry, is required to provide the ministry of finance with regular progress reports on the on-lent loans – including disbursements, repayment projections and repaid amounts – to enable the ministry of finance to monitor all the transactions on the on-lent loans.

3.1.3.20 Recourse action when default takes place

The legislation should vest authority in the minister of finance for recourse action to be taken when a default takes place, although default should be regulated in detail in the on-lending agreements.

3.1.3.21 Receivables

The law should vest the power to administer receivables from on-lent loans to the minister of finance.

3.1.3.22 Contingency reserve account

Contingency reserve accounts should be established by legally binding provisions and their working and administration arrangements should be stipulated in the regulations. These details could be in the public financial management laws and regulations. Contingency reserve accounts, where retained earnings could be set aside to guard against possible future losses, are useful risk management tools in the management of contingent liabilities.

3.1.3.23 Reporting and disclosure for on-lent loans

The law should require reporting and disclosure by both the beneficiary and the issuer (ministry of finance), so that they regularly report to all stakeholders on the status of all previous and ongoing guarantees, as well as any future application on guarantees and any payment difficulties expected. The two bases of reporting – statistical and accounting – should be present in all countries as standard and enforced through the legal framework.

3.1.4. Other guidelines or frameworks for managing loan guarantees and on-lent loans

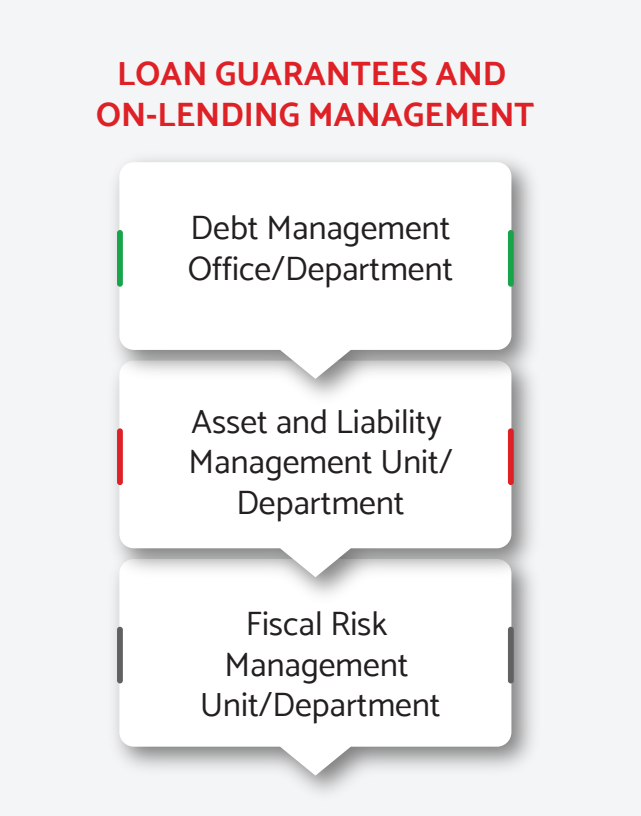
In addition to the legislative framework that consists of primary and secondary legislation, non-legally binding guidelines and frameworks must also be prepared to ensure well understood procedures and smooth implementation of obtaining a guaranteed or an on-lent loan. Related laws and regulations such as public financial and accounting laws must also be in place to complement laws and regulations of loan guarantees and on-lending.

3.1.5 Institutional framework

Institutional arrangements for contingent liability management in general, and loan guarantees and on-lending management specifically, should serve the desired functions and facilitate strong coordination within the government.

In broad terms, the responsibility of management of loan guarantees and on-lending may lay within three types of institutional structure: debt management offices (DMOs), either organised as autonomous bodies or as part of the ministry of finance; fiscal risk management units; and asset and liability management (ALM) structures. In all these structures intra and inter-ministerial committee structures can also be designed to increase efficiency and facilitate coordination.

Figure 4: Loan Guarantees and On-lending Management



3.1.5.1 Debt management office

The management of guarantees and on-lent loans is carried out in the debt management department (usually within the ministry of finance or scattered across the ministry of finance and other agencies), or within a quasi-independent DMO. Loan negotiations for guaranteed loans and on-lent loans are carried out in the front office of the DMO. This office is also partly responsible for preparing loan agreements (both loans and on-lent loans) and guarantee letters. The front office is responsible for presenting applications for new on-lending for approval. Credit risk assessment and guarantee fee calculations are carried out by the middle office of the DMO. The recording and monitoring of payments are carried out by the back office. In the event of default, any recourse action will be decided by the minister of finance with the technical advice of the front, middle and back offices (Figure 5).

Figure 5: Division of Responsibilities under the DMO Structure

3.1.5.2 Asset and liability management unit/ department

Sovereign asset liability management structure is based on a government balance sheet approach, where all assets and liabilities are identified and estimated. In addition to managing these stock values efficiently and effectively, the potential risks associated with each asset and liability are evaluated and balanced. This gives a holistic approach to managing the entire portfolio of a balance sheet.

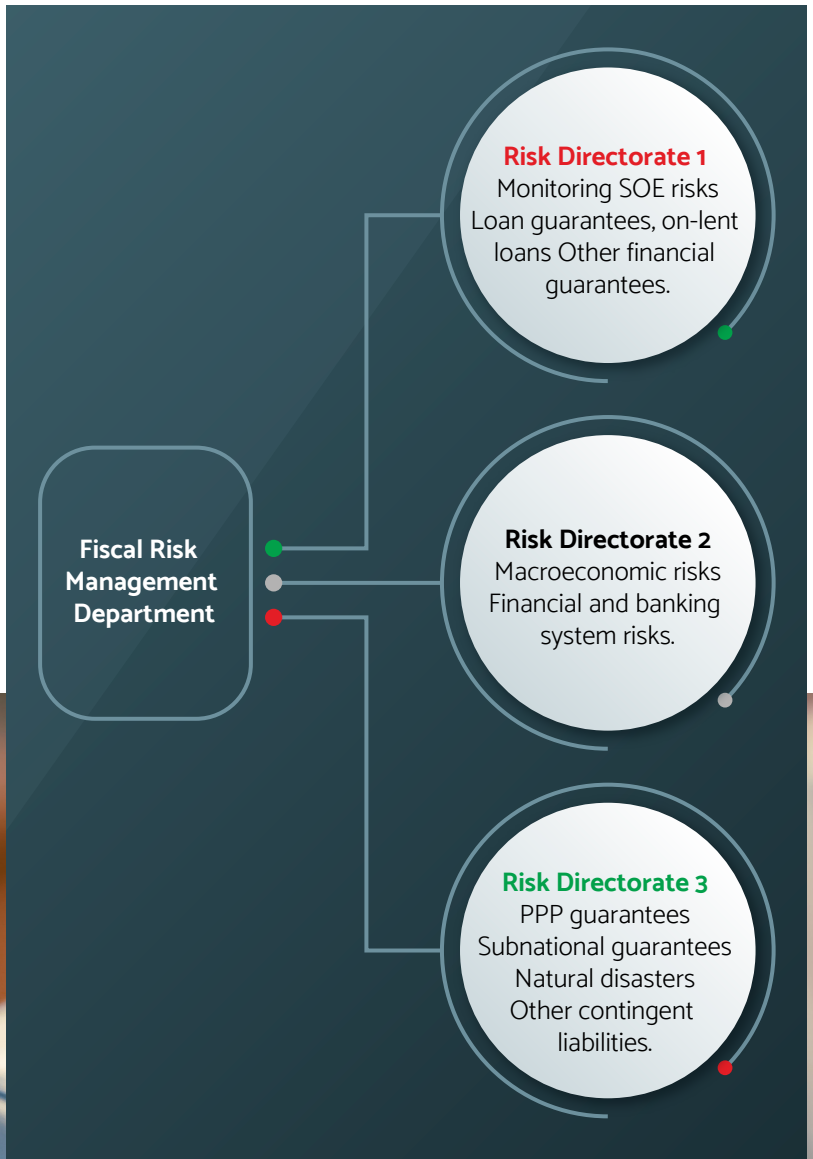
In countries where the government's debt portfolio is managed within an ALM framework, responsibilities and functions related to guarantees and lending are carried out within the directorates/offices of asset, liability, strategy and risk management. This type of arrangement is usually set within a national treasury management structure, an example of which is South Africa.

In the case of South Africa, a sustainable level of debt is replaced by a sustainable level of net liabilities to GDP. Liabilities are defined as including net debt, provisions and defined contingent liabilities. The management of contingent liabilities lies with the ALM division within the national treasury, which falls under the ministry of finance.

3.1.5.3 Fiscal risk unit/department

Fiscal risk management units have been gradually emerging in many countries, both advanced and developing. They are typically set up within the ministry of finance.
A typical fiscal risk management department is presented in Figure 6.

Figure 6: Fiscal Risk Management Department/Unit



The responsibilities and functions of the various risk directorates described above can be rearranged in any combination. The important point is that the loan guarantees and on-lending staff that are shown here are mainly responsible for carrying out the credit risk assessment, while the separate debt management department/office will carry out all the debt management functions.

Fiscal risk departments in collaboration with debt management departments can carry out in-depth risk-based sustainability analysis and medium-term debt strategies, taking into account credit risk impacts.

3.1.5.4 Inter-departmental/ministerial committees

Several countries have established inter-departmental and inter-agency committees with specific mandates of loan guarantees and on-lending management. Such committee structures provide helpful platforms for overcoming policy coordination issues and data consolidation problems. The committee's mandate is to identify and optimally manage contingent liabilities and quantify them, monitor risks and propose mitigating measures, and report on risks both for internal purposes and to the public.

The committee should be supported by a secretariat in the ministry of finance or the treasury. The committee makes recommendations to the minister of finance on whether to approve/concur with the issuance of guarantees or not. The committee may be composed of relevant offices dealing with issues including strategy formulation and financial analysis, as the minister deems fit and proper, and the minister will appoint them formally.

The terms of reference for the committee may include:

- Risk assessment of the counterparties' credit quality and to advise the minister of finance accordingly.
- Monitoring the concentration in contingent liability portfolio.
- Limiting total liabilities (debt plus contingent liabilities), setting conditions and monitoring adherence.
- Monitoring performance against the benchmark of total net debt, provisions and contingent liabilities as a percentage of GDP.
- Advising the minister of finance on approaches/policies and providing oversight on the implementation of the contingent liability policy of the ministry of finance.
- Considering applications and making appropriate recommendations.
- Determining appropriate fees and rules for non-payment.
- Monitoring utilisation of guarantees and adherence to conditions.
- Monitoring and reporting claims against the state due to the non-payment by counterparties and adopting rules to deal with non-payment.
- Operationalising and monitoring the funded contingency reserve account.

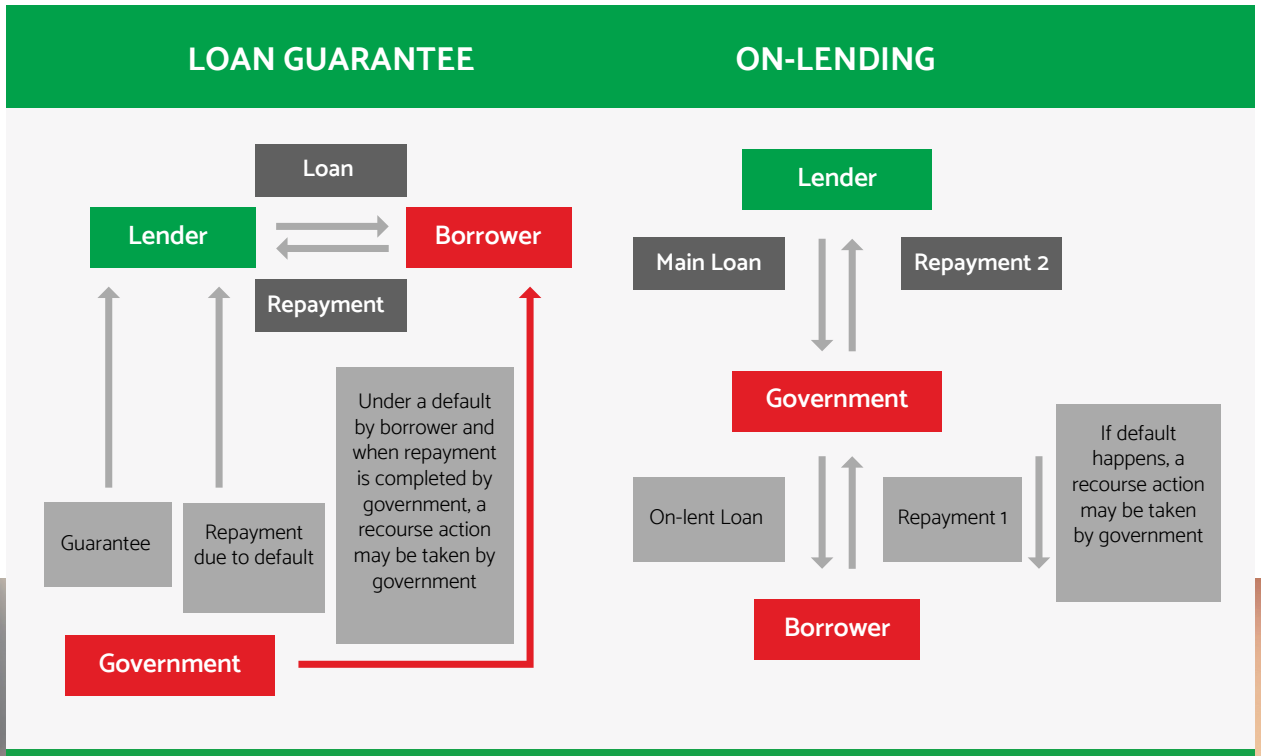
The committee's meetings could be convened quarterly with special meetings convened when required. The meeting would consider requests and the status of the portfolio as well as adherence to any conditions the minister may stipulate. The ministry of finance should perform the evaluation, review and monitoring activities and convey recommendations to the committee.

3.2 Issuance process

There are circumstances when the borrower is only able to obtain a loan from the lender if and only if the government provides a guarantee. The lender wants to ensure that, in the event of default, the government will take on the responsibility of repaying the loan. In the case of on-lending, the government through the ministry of finance receives a loan from a lender or raises funds via a security issuance and then lends these funds to the final borrower. The government can on-lend directly or through an agent. Some countries appoint special on-lending agencies and banks to carry out the management of on-lending activities.

The typical flows between the three parties – lender, borrower and government – are shown in Figure 7.

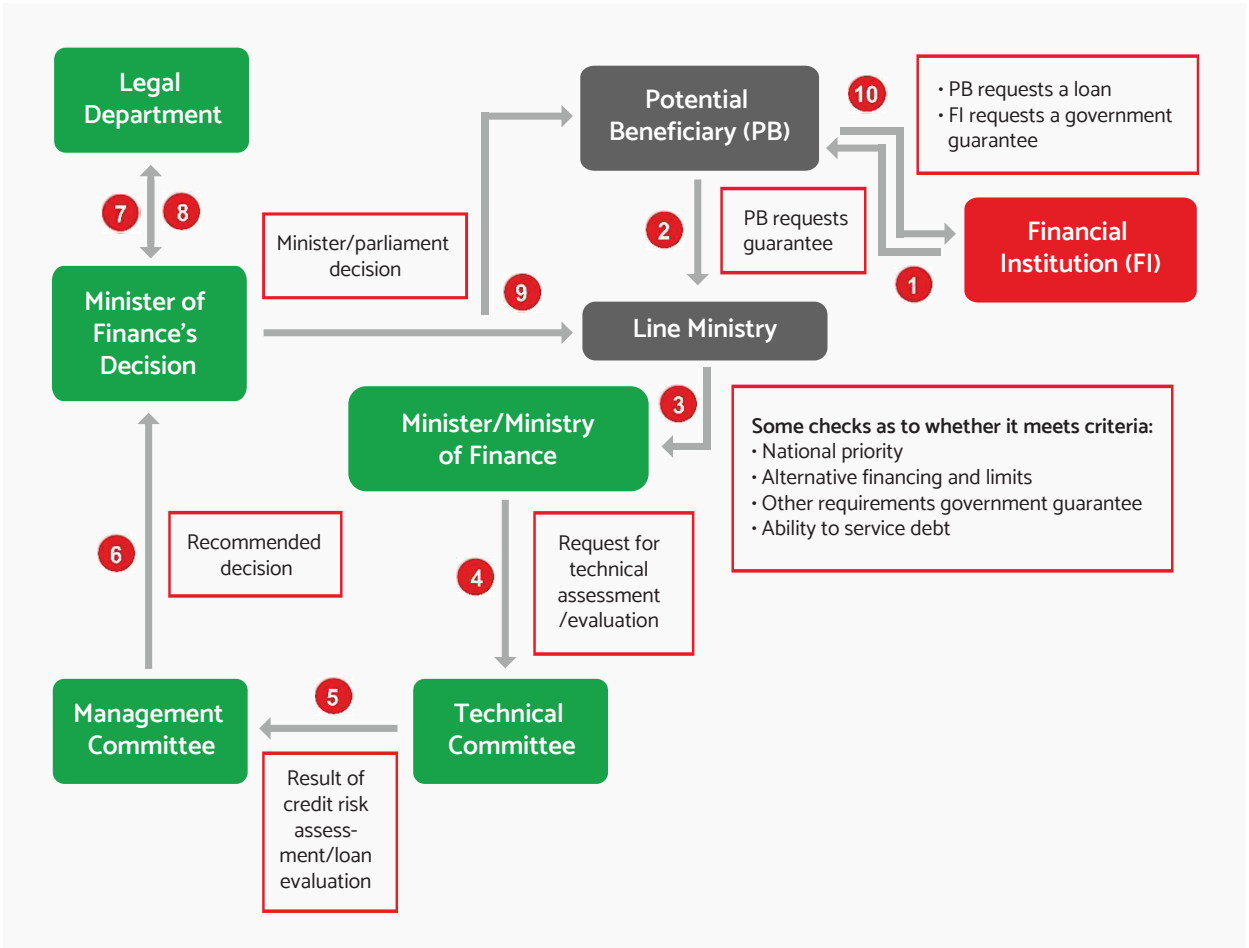
Figure 7: Flows among the Parties – Loan Guarantees and On-lending

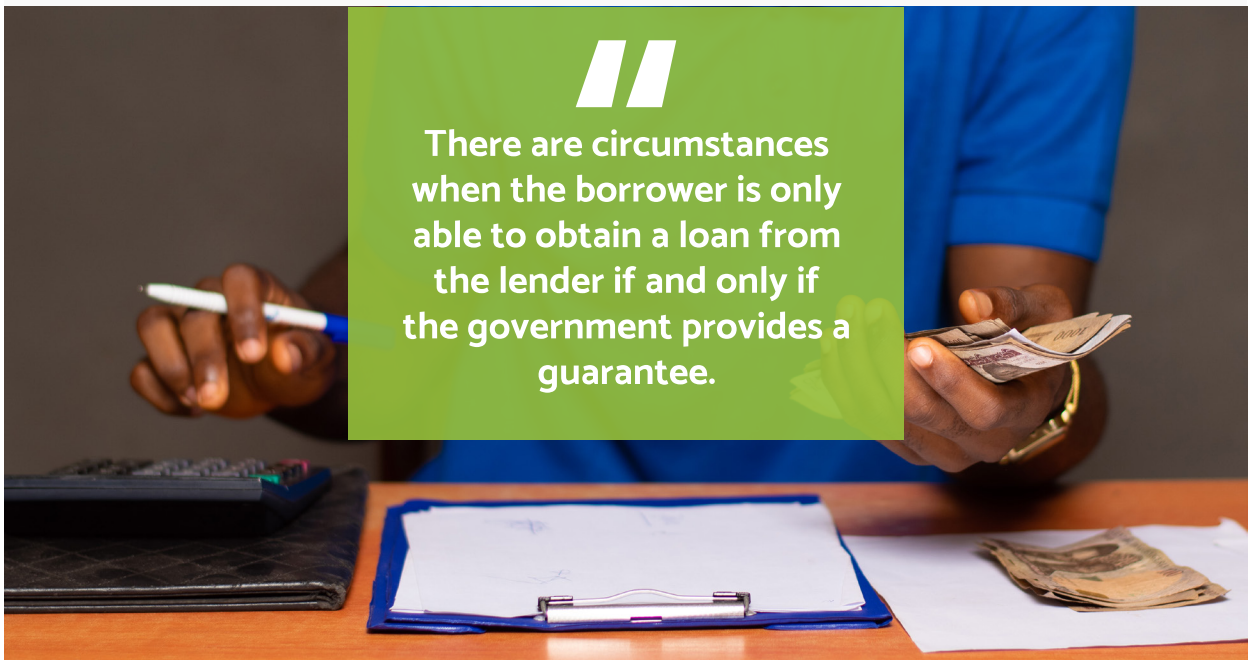


3.2.1 The process of a loan guarantee application

Figure 8 illustrates the main processes followed throughout applications for government loan guarantees. In specific country contexts, there may be differences in the institutional structures which may produce different process flows. The important issue, however, is the key functions and checks to be performed by the players.

Figure 8: Loan Guarantee Application Process Flow Chart





The process flow chart given in Figure 8 above can be summarised in the following steps.

3.2.2 Identification of a potential loan facility from a financial institution (creditor) that requires a government guarantee

The need for a guarantee may be established during the multilateral Country Assistance Strategy (CAS) meetings between the beneficiary's sector (line) ministry, ministry of finance and the multilateral agency, between line ministry and export credit agencies, or between the beneficiary and commercial creditors, in which a need for a government-guaranteed loan can be discussed.

The feasibility studies for particular projects, initiated by public entities and/or mandated and approved by line ministries, may also stipulate that a government guarantee will be required to enable access to funding.

3.2.3 Potential beneficiary/line ministry discussion prior to guarantee request

If the potential beneficiary of a loan is a public enterprise, the enterprise has to apply for a guarantee through its line/sector ministry. However, there are certain strategic corporations which operate directly under a superior authority other than ministries like the President's office or Vice President's office. In this case, the entity may apply for a loan guarantee directly with the approval of the authorities. Subnational entities apply through the line ministry of local government and development banks apply usually through the ministry of finance.

3.2.4 Criteria fulfilment and verification by beneficiary/line ministry consultation

The related line ministry or other authorised institution checks whether the application for a government loan guarantee satisfies the basic requirements that have been provided in the legal framework. Some of the basic requirements are as follows:

- The project/programmes for which the loan is sought must be a priority of the national development plan. This may also include priority within priority. For example, in the electricity sector, hydroelectric generation may be preferred to coal-based electricity generation.
- All other potential funding opportunities must have been well examined before the guarantee option was chosen.
- The public entity or project to be funded must have sufficient cash flows to service the debt.
- The terms and conditions of the loan must be satisfactory and in accordance with the legislative framework.
- The applicant must not have any unpaid arrears with the ministry of finance/treasury.
- The applicant may have to provide collateral or a counter-guarantee.
- The financial positions of all potential beneficiaries must be sound.

3.2.5 Application for a guarantee by the potential beneficiary via the line ministry

Having verified the criteria and requirements for a guarantee, the line ministry on behalf of the beneficiary will submit an application/request for a guarantee.

3.2.6 Relevant documents to be submitted by the potential beneficiary for loan evaluation and credit risk assessment and request for a guarantee

The relevant documents are required to be submitted by a potential beneficiary to the ministry of finance for loan evaluation for a guarantee. These include loan details and potential agreements consisting of terms and conditions, and relevant financial statements representing past performance of the beneficiary for credit risk assessment. Financial statements comprising income accounts, cash flow statements and balance sheets of the past three or more years would also be required to carry out the assessment.

The annual reports of the beneficiary may also be required. Annual reports give other performance-related information such as organisational structure, staff strength, sector performance etc. used in credit risk assessment. Other reports/ information may be stipulated as necessary to enable the credit risk assessment.

The request for a guarantee must be sent on time and a response should be received within a stipulated time. The ministry will stipulate the timeframes for submission of guarantee requests in the legislation.

3.2.7 Loan evaluation and credit risk assessment carried out by technical committee and outcome conveyed to management committee

The technical committee will be responsible for carrying out assessments/evaluation on mainly two issues: loan evaluation and credit risk assessment.

- On loan evaluation: national priority criteria, alternative funding opportunities, debt limits and terms and conditions are evaluated.
- On credit risk assessment: a scoring method should be adopted, with scores and weighting to be allocated to financial and non-financial indicators, project feasibility (i.e. economic and financial rate of returns, and debt servicing capacity). Ultimately, this step seeks to determine the credit quality of the entity and its willingness and ability to absorb the potential outflows related to the debt that would be acquired on the back of the guarantee.

The technical team may be constituted from the DMO/ministry of finance to perform the technical evaluation process.

3.2.8 Assessment/evaluation by the management committee

The management committee should undertake the following:

- Process the results of the evaluation and decision on acceptance – if minor changes regarding assumptions are required, highlight these in the evaluation result.
- Make the decision on the guarantee –positive, negative or undecided for further clarification and reconsideration.
- In the case of no clear decision, hold further discussions and analysis between the management committee and technical committee.
- Details of the guarantee fee, other fees and expenses, probability of default and expected loss estimate, if possible, should be provided by the technical committee. The expected loss estimate can be used as a guide to allocate contingency reserve amounts.

3.2.9 Decision from the management committee submitted to the minister

- A summarised version of the decision made regarding the guarantee and credit risk assessment will be sent to the minister of finance by the management committee.
- For successful cases on the guarantee, legal inputs (and in some cases drafting) of the letter of guarantee should be provided by the legal office. The terms and conditions (i.e. guaranteed amount and fee) including the recourse action to be taken in the event of default and collateral pledging will be stipulated in the letter of guarantee.

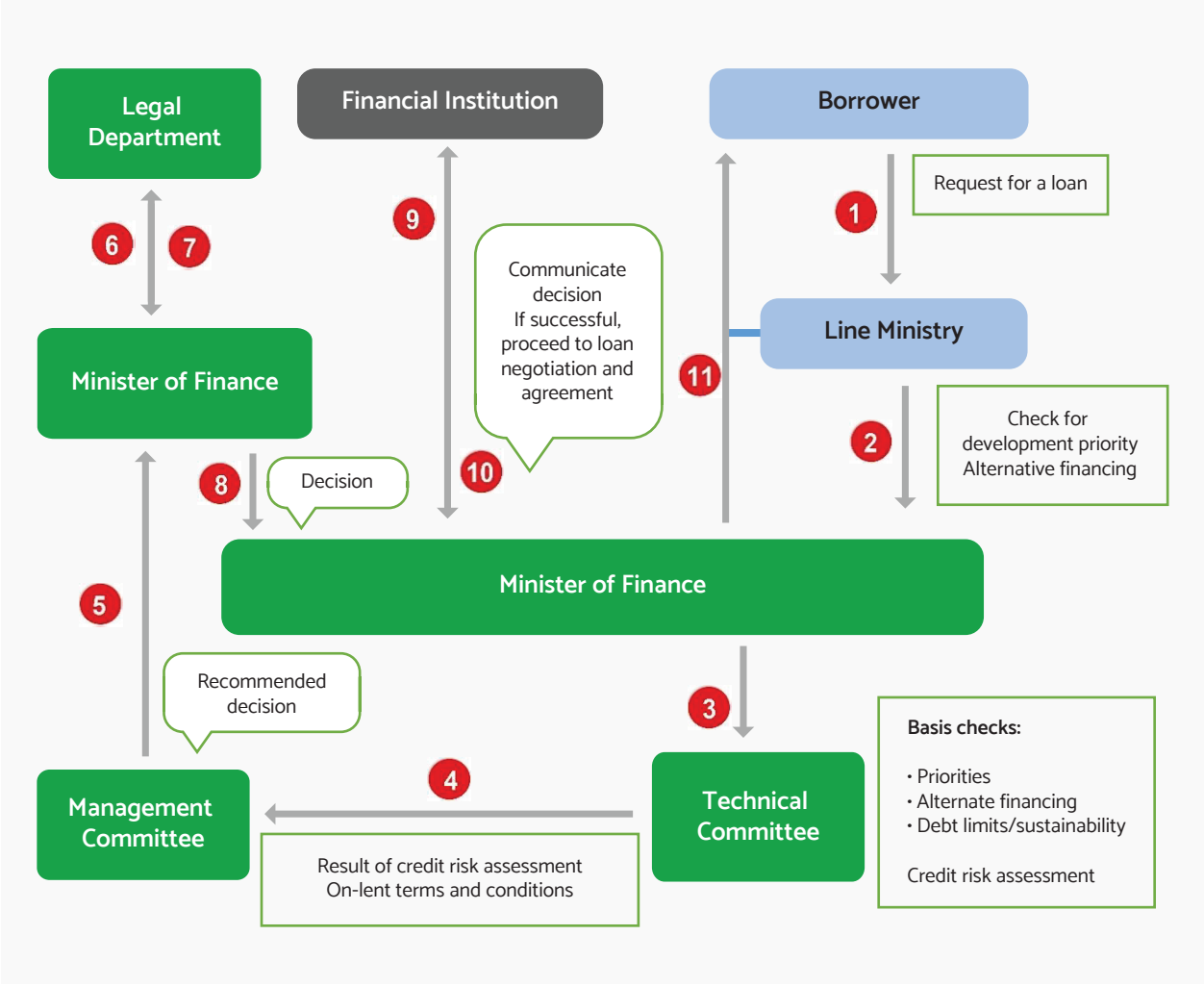
3.2.10 Decision notification to the beneficiary and line ministry

- The decision (positive or negative) of the ministry of finance about the loan agreement and the guarantee will be sent to the line ministry and the beneficiary. In the absence of a line ministry the decision will be sent to the beneficiary.
- If the decision is positive, a letter of guarantee (with all the terms and conditions) will be sent to the line ministry, with a copy of the loan agreement and the offer of guarantee sent from the minister of finance to the beneficiary/line ministry. A similar approach is adopted for those direct beneficiaries with authorising bodies.
- In some cases, parliamentary/national assembly approval may be required to finalise the decision.

3.2.11 The process of an on-lending application

The most common form of on-lending is when a government borrows a loan and then re-lends that loan to the final borrower. However, other forms of on-lending can also take place. For example, a government can raise a security externally (international sovereign bonds) or domestically (treasury bonds) and offer this as a loan to a final borrower. Figure 9 illustrates the process flows in the case of an on-lending of a primary loan contracted by the government.

Figure 9: On-lending Application Process Flow Chart

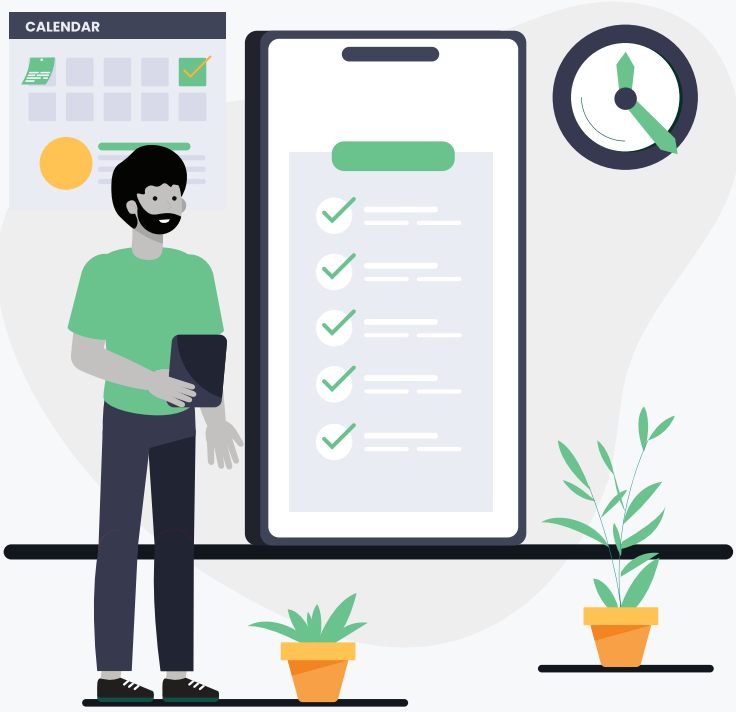


The process flow chart given in Figure 9 above is summarised in the following steps:

3.2.12 Identification of potential for securing a loan that has to be borrowed indirectly (on-lent loan)

- If the potential final borrower of a loan is a public enterprise, it has to apply for a loan via its line ministry.
- The initial needs assessments of projects and programmes are carried out by beneficiaries and line ministries. When identified, the required financing needs must be requested through national budget consultations with the ministry of finance.
- However, there are certain strategic corporations which come under an authority like the President/ Vice President's office, which with the approval of the authorities may apply for a loan directly and will be considered during national budget preparation.
- Indirect borrowing through on-lending arrangements can be due to several reasons of which the following are the most common:

1. The legal framework may not allow borrowing, especially external borrowing directly by the final borrower.
2. The creditor may only be willing to lend via the government.
3. The government's relatively lower borrowing costs may make the on-lending a preferable option to other forms of financing.



3.2.13 Potential final borrower/line ministry discussion

- Borrowing needs are discussed during national budget preparations.
- Financing needs for both recurrent and development budget projects and programmes are prepared.
- When preparing the development budget, project/ programme appraisals may be included.

3.2.14 Criteria fulfilment and verification by potential beneficiary/line ministry consultation

- The role of the line ministry or authorities (e.g. President's Office) is to check whether the loan satisfies the criteria requirements.
- Some example criteria are as follows:

1. The project/programmes for which a loan is sought should be within the priority list of a national development plan. This may also include priority within priority. For example, in the electricity sector, hydroelectric generation may be preferred to coal-based electricity generation.
2. The loan should be within debt sustainability considerations and overall debt limits.
3. The public entity or project to be funded should generate sufficient cash flows to service the debt.
4. The terms and conditions of the loan should be satisfactory and in accordance with the legislative framework.
5. The applicant should not have any unpaid arrears with the ministry of finance/treasury.
6. The applicant may have to provide collateral or a counter-guarantee.
7. The financial positions of all potential beneficiaries should be sound.
8. Alternative financing arrangements should have been investigated.

3.2.15 Mobilising a loan by the ministry of finance

The ministry of finance is expected to mobilise a primary loan from external or domestic creditors. Before signing, among other things, the ministry of finance will i) obtain a legal opinion from the legal department, ii) check the beneficiary is creditworthy and iii) decide what recourse action should be taken in case of default.

3.2.16 Documents to be submitted by the beneficiary for a credit risk assessment

For a credit risk assessment, the relevant financial statements representing the past performance of the beneficiary should be submitted. Financial statements comprising income accounts, cash flow statements and balance sheets from the past three or more years are required to carry out the assessment. In addition, the annual reports of the beneficiary may also be required. Annual reports give other performance-related

A credit scoring method should be adopted, with scores and weighting allocated to financial and non-financial indicators, and potential project feasibility.

information, such as organisational structure, staff strength, sector performance, etc. that may be used in credit risk assessments. The ministry of finance may also stipulate any additional information that may be necessary to enable the performance of the credit risk assessment.

A request for a loan must be sent on time to arrive before budget discussions begin and a response should be received within a stipulated time period. The ministry will stipulate the timeframes for submission of guarantee requests.

3.2.17 Credit risk assessment carried out by technical committee

The technical committee in the ministry of finance will be responsible for carrying out the credit risk assessment to determine creditworthiness.

A credit scoring method should be adopted, with scores and weighting allocated to financial and non-financial indicators, and potential project feasibility (i.e. economic and financial rate of returns, potential debt servicing capacity).

Details of this exercise will include, among others, i) probability of default and ii) an expected loss estimate. This will help the ministry of finance to set out the terms and conditions of the on-lent loan. In the absence of a formal technical committee, a technical team from the DMO/ministry of finance should perform the technical evaluation mentioned in this process.

3.2.18 Result sent to management committee for decision making

This should involve the following steps:

- The result of the evaluation and decision on whether to offer an on-lent loan should be articulated. The decision is usually more about setting the terms and conditions rather than whether to offer or not to offer.
- The probability of default and expected loss estimate, if possible, should be provided by the technical committee. The expected loss estimate can be used as a guide to allocating contingency reserve amounts.
- The details of potential loan terms, conditions and risk margins, applicable on-lent fee, and other fees and expenses should be provided.
- Further discussions may take place between the management committee and technical committee to reach a definitive decision.

3.2.19 Management committee decision sent to the minister of finance

- If the decision is negative, it is conveyed to the minister who, after agreeing to this decision, will inform the line ministry and the final borrower. A similar decision is sent to the final borrower (in the absence of a line ministry) and the relevant authority.
- If the decision is positive, then the minister will first inform the final borrower/line ministry of this decision. The minister will then ask the ministry team to negotiate for a primary loan from the creditor and an on-lent loan with the final borrower/line ministry.
- The primary loan negotiations are similar to the ones carried out by the ministry of finance when negotiating for direct government loans that are repaid by the ministry of finance.
- In both these loans legal inputs and advice will be required and therefore the legal office/department has to be consulted.

3.2.20 Loan agreements prepared and signed

- Having secured the loan, the ministry of finance will prepare an on-lent loan agreement in which it will stipulate the terms and conditions for the on-lent loan.
- The on-lent (subsidiary) loan may have terms and conditions that are different from the primary loan.

1. The ministry of finance will share the loan details with the beneficiary/line ministry and when all parties are satisfied the ministry of finance will formally prepare a final draft of the loan agreement.

2. The main copy of the primary loan signed by the lender and the minister will be stored in the ministry of finance, usually in the debt management department. Another copy may be stored in the accountant general's department.
3. The on-lent (subsidiary) agreement will be stored at the ministry of finance and copies will be held by the final borrower/line ministry.

3.3 Risk management framework

The risk posed by government loan guarantees and on-lent loans is that the beneficiary entities may not be able to meet their repayment obligations, in which case the government will have to settle them on behalf of the respective beneficiary. The occurrence of such events would have a negative impact on the government's fiscal position. History has shown that if the fiscal risks arising from these exposures are not properly managed and the necessary risk management strategies are not implemented in a timely manner, the government can be caught unprepared for the fiscal burden created by the materialisation of such risk events. This is especially critical if the beneficiary is suffering as part of a general economic downturn when the government also has lower tax receipts and other increased expenses.

Therefore, loan guarantees and on-lending need to be approved with a clear understanding of the risks involved. It is critically important that logical and effective risk management frameworks are developed to ensure that these risks are managed prudently and in such a way that their potential negative impact on the government's fiscal position is reduced as much as possible. An effective risk management framework for managing government loan guarantees and on-lending transactions enables better decision making with regard to which risks to assume as well as how each of the transactions may be structured to reduce risks to acceptable levels.

This section seeks to provide countries with the principles required to develop a risk management framework for loan guarantees and on-lent loans. These two forms of government support expose governments to credit risk. As such, they can be managed by an integrated risk management framework applied to both instruments.

In developing this framework, a credit risk management approach should be adopted. The steps incorporated into the risk management framework are illustrated in Figure 10 and are explained in detail in the following sections.

Figure 10: Risk Management Framework – Steps

3.3.1 Risk identification and quantification

Risk identification and, most importantly, quantification of the volume of exposure form an integral part of the risk management process in relation to loan guarantees and on-lending. They represent the starting point of the risk management process and form the basis upon which all the other steps follow. Before determining how to manage the government's risk exposures it is critical that they are identified and the volume of these risk exposures is determined. It is therefore important that the credit risk administration records and reports the different counterparties, the amount of exposure for each counterparty and the type of that exposure (e.g. types of loans, currency, interest rate basis, term of exposure, etc.).

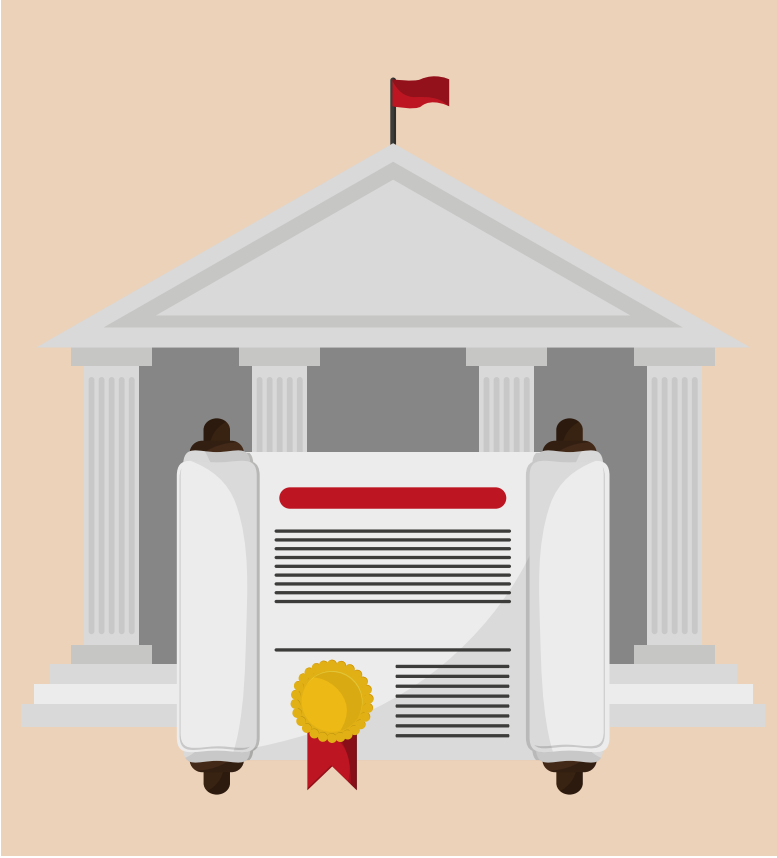
Understanding the character of the existing guarantee and on-lent portfolios allows governments to better manage the existing portfolio and make better-informed decisions when deciding whether to issue new guarantees or loans. In managing the current portfolio, the information can be used to focus attention on the sources of greatest risk and minimise the possibility of being surprised by calls on the treasury or the budget. In considering new guarantees and loans, the government needs to know the existing risks so that it can understand whether the new risks would exceed the government's capacity and risk tolerance. The existing portfolio may also influence the structure of the new risks, e.g. whether to take on additional floating-rate debt.

Having information on the existing portfolio also influences and enables the design of credit risk models for monitoring risks. Identifying risk exposure is not always straightforward and can be complicated by the issuance of loan guarantees and on-lending by different government entities, lack of updated and centralised information on the issued loan guarantees and on-lending, lack of information on the nature of the beneficiaries' operations and risks, and uncertainty about the types of risks assumed by the government.

Efficient and up-to-date risk exposure identification can be facilitated by:

- clear designation of authority as to who may underwrite new risks
- requirements in the loan documentation for the beneficiary to provide sufficient information for risk assessment if they want to receive a guarantee
- standardised processes to record, update and centralise information
- expertise to assess the legal and economic implications of risk-sharing agreements.

In order to facilitate efficient identification of the risk exposure as well as to understand the characteristics of the guarantee and on-lent portfolio, it is important to answer the following questions:



- **Who/what does the government have recourse to, in case of default?**

1. Corporate finance: recourse to beneficiary's overall cash flows.
2. Project finance: recourse to cash flows generated by project.

- **What types of risks has the government underwritten?**

1. Credit risk.
2. Interest rate.
3. Commodity risk.
4. Construction risk (if costs are higher than expected, does that mean more debt?).
5. Foreign currency risk.
6. Specific risks, such as revenue risk, demand risk, early termination risk for specific causes, etc.

- **Do risks materialise at once or over time?**

1. Full exposure materialises at once when creditors accelerate loans (i.e. actual default occurs).
2. The government may undertake periodic debt service payment on behalf of the borrower (i.e. no default occurs vis-à-vis the creditor).

It is also important to define what constitutes a credit event or default from the point of view of the government, and for the framework to clearly articulate how the government would deal with these credit events. Credit events would result when the beneficiary is to be unable to pay its debt obligations. When faced with a credit event, the following options are available to the government:

- Taking over debt service obligations of the entity in distress.
- Payment of the full guaranteed debt of the entity (debt outstanding and disbursed).
- Taking over a single debt service payment.
- Unexpected/unplanned capital injection.

As the government enters into new transactions, these would need to be articulated in the guarantee and on-lending agreements.

In addition, for existing guarantees and on-lent loans, the following data will have to be collected in order to identify the risk exposure to government:

3.3.1.1 Current stock of exposure by:

- individual beneficiary entity and the respective industry
- lender and currency
- type of support (e.g. loan guarantee, on-lending, specific guarantee (such as in PPPs and IPPs)).

3.3.1.2 Evolution of exposure/maturity profile

- Past.
- Future (e.g. when does the guarantee/on-lent debt mature?).
- 3.3.1.3 Payment performance
- Arrears by entity and type of support.
- Past government support.

3.3.2 Credit risk assessment

An important step in the credit risk management process is the credit risk assessment.

'The credit assessment process is a holdover from traditional credit risk management, which is grounded in fundamental credit analysis to identify and control risks by determining the borrower's probability of repaying the debt. Through credit analysis, an assessment is made of the borrower's income statement, balance sheet and cash flow statements, along with character, capacity and capital adequacy, all of which are dependent upon data that are provided by the obligor. The second goal of credit assessment is to identify a borrower's primary source of debt repayment that will be available to repay an extended credit obligation. Similarly, the third goal of credit assessment is to evaluate the probability that a secondary repayment source will be available in the event that the primary source becomes unavailable.'[6]

Credit risk assessment, which is an integral part of the credit risk monitoring process, seeks to determine the credit quality of the different beneficiaries of guarantees and on-lending by determining their ability and willingness to service their guaranteed and on-lent debt. This part of the process is

therefore very important, as it informs the mitigation strategies and the risk management tools to be applied.

There are various approaches that can be adopted to conduct credit risk assessments, which can be customised to suit the environment in each country. The type of model used depends on the nature of the company (e.g. traded, non-traded or project finance), the amount of default data available historically, the financial data available on the current companies, and the purpose of the assessment (e.g. to understand the risk of the single loan or the correlated risk of the portfolio as a whole). The most common methodologies used in practice are the following:

- Credit rating/scoring: Scoring and aggregating an entity's key risk drivers to arrive at an ordinal risk rating (e.g. credit rating agencies' method).
- Statistical models: Econometric analysis to estimate the likelihood of default using observable firm characteristics (e.g. financial ratios) and historic credit performance. Default is estimated by regressing historic outcomes on historic performance, e.g. financial ratios.
- Scenario analysis: Scenarios are constructed and the impact on beneficiaries' cash flows and ability to service debt is estimated. Scenarios of specific risk drivers such as cost-over runs and commodity prices are determined and their impact on the financial performance and credit quality of the beneficiary are forecasted.
- Structural models: These use insights from option pricing theory to estimate the probability of default. Structural models assume that default occurs when an entity's asset value reaches a significantly low level compared to its liabilities. Essentially, the model determines the level of the entity's assets at which default occurs or the default point (strike price in option pricing).

6 Colquitt, J, Credit Risk Management: How to Manage Lending Disasters and Maximize Earnings, 2007.

For the purposes of these Guidelines, a credit scoring model – which appears to be more practically applicable to many of the MEFMI countries – is recommended and will be expanded upon.

3.3.3 Credit scoring methodology

The model uses a scorecard to weigh and score individual risk indicators to determine a weighted risk rating for a beneficiary of a guarantee or on-lending. The choice of indicators is important, to ensure that the model robustly captures and reflects the business of the entity and is able, as far as possible, to determine the ability and willingness of the beneficiary to service its obligations. The risk indicators can be thought of as falling into two categories: qualitative and quantitative. Generally, qualitative risk indicators are driven by the subjective consideration of macroeconomic factors, governance-related issues and industry-specific microeconomic factors, whereas the quantitative risk indicators are driven by objective measures such as financial ratios.

Qualitative indicators primarily speak to the quality of the management systems and the company's position in the economy or market. These indicators have to be chosen carefully in order to incorporate the issues that are important in a sector and in the country. The qualitative indicators are important because, in most cases, beneficiaries of guarantees and on-lending are regulated, legislated, and impacted by government policy and economic developments (industry prospects). Their size and the role they are required by government to play in their respective sectors may also have an impact on their financial performance (market position). How the management of an entity performs relative to maintaining and growing the business, how it is structured and how it complies with legislation and government policy is indicative of the quality of the governance structure (corporate governance). It is therefore important that these indicators are selected carefully.

Quantitative indicators are typically derived from financial statements or cash flow projections. The use of objective financial ratios is important to determining the credit quality of the beneficiary. The ratios help to determine how far the company is from being in distress. They assist in determining the ability of the beneficiary to generate revenue and the ability to grow revenue. It is important to determine how efficient the beneficiary is in generating revenue and how efficient the operations are, because this leads to profitability and the more the beneficiary generates profits, the more it is able to fund its debt service obligations. If the beneficiary is unable to generate revenues and adverse events occur, it is important to determine whether there are other sources with which it could fund debt service obligations, such as whether the sale of the beneficiary's assets would be enough to fund these obligations should the beneficiary fail. Typically, the core assets of state-owned enterprises cannot be sold without impacting the services being provided, however there may be some non-core or under-utilised assets that could be sold to support the debt.

There are also ratios that can be used to determine whether the beneficiary has sufficient liquidity or cash flows to cover short-term debt service obligations. Liquidity and short-term cash flows are important because even though the beneficiary may be profitable and have sufficient assets, it may not have enough cash on hand to meet its short-term obligations when they arise.

The choice of ratios when developing a credit scoring model should therefore take these objectives into account so that the ratios used are able to provide answers to pertinent credit risk questions such as:

- Does the beneficiary generate sufficient revenues to fund debt service obligations and what are the sources of this revenue (revenue generation)?
- Is the beneficiary efficient in generating this revenue and managing its costs (efficiency)?
- Is the beneficiary profitable and are these profits enough to fund the debt service obligations (profitability/debt service[7] or profitability/revenue)?
- Should an adverse event occur, what are the beneficiary's alternative sources of funds with which to finance debt service obligations (leverage/debt capacity)?
- Does the beneficiary have readily available liquid assets such as cash on hand to service its short-term debt obligations when they fall due (liquidity)?

> **The use of objective financial ratios is important to determining the credit quality of the beneficiary.**

7 Profitability/debt service is often called the debt service coverage ratio (DSCR). DSCR gives a good indication of the robustness of the cash flows. For example, if DSCR is 2, net income could drop 50 per cent before affecting debt payments, but if DSCR is 1.1, a small drop in revenue or increase in costs will cause default.

These are the main issues that must be considered when deciding on which ratios to incorporate into the credit scoring model. There are many ratios that have been developed and adopted for use in credit risk assessments by various institutions but in government credit risk assessment frameworks, some of the considerations also have to be country-specific as well as sector-specific as each country and sector might have its own particular conditions.

Once the choice of indicators is determined, ranges for each indicator are set. Typically, there are five ranges, and each range corresponds to indicate the level of risk.

The risk rating scale should be driven by the extent of the entity's exposure to the risk as well as the likelihood of the risk materialising. Table 11 gives an example of a possible rating scale.[8]

Table 11: Rating Scale

RISK RATINGS	EXTENT OF RISK EXPOSURE	LIKELIHOOD OF MATERIALISATION	RATING DEFINITIONS
1 2	Very low risk Low risk	**Remote**	Highest credit quality with the smallest degree of risk High credit quality and are subject to low credit risk
3	Moderate risk	**Possible**	Medium grade and are subject to moderate credit risk
4 5	High Risk Very High risk	**Probable**	Obligations are speculative and subject to high credit risk Obligations are of poor standing and subject to very high credit risk

Once the ranges are set for each indicator, weights are assigned to both qualitative and quantitative indicators based on their importance and effectiveness in assessing the credit quality of a beneficiary. The sum of the weights assigned to all the indicators should be 100 per cent. The overall weighted risk rating of the entity should be equal to the aggregate of all the weighted risk ratings of the individual risk indicators.

If each of the individual indicators is rated on a scale of 1 to 5, the overall score will be between 1 and 5. The application of the credit scoring model will be illustrated in Appendix B. Table 12 below illustrates how a typical scorecard will look.

Table 12: Scorecard

SCORECARD			
INDICATORS	**WEIGHTS**	**RATINGS**	**WEIGHTED RATINGS**
Business risk indicators Industry	20%	2	0.40
Profitability Net profit margin	15%	2	0.15
Debt capacity ratios Debt service coverage ratio	15%	3	0.45
Efficiency Cost to income	15%	2	0.30
Liquidity Cash flow adequacy	20%	1	0.20
Quick ratio	15%	1	0.15
Total weighted risk rating	100%		1.7
Description			Moderate Risk

8 In defining the rating scale, it may be useful to implicitly link the rating to credit rating agencies, e.g. 'very low risk' could correspond to a rating of BBB and 'high risk' could correspond to a rating of CCC. This has the later advantage of linking each risk rating to a probability of default, as published by the rating agencies.

3.3.4 Credit risk quantification

The previous section discussed the scorecard approach for assessing the risk of an entity being unable to service its debt. This section describes how that score can be used to quantify the amount of risk and to support risk management decisions.

Credit risk measurement is used to support credit risk management decisions, with three major goals:

1. Limiting the credit risk exposure that the government accepts when issuing a guarantee or on-lending funds to an entity. By determining the probability of a loss and the loss exposure amount over a period of time, the guarantee or loan can be better structured and managed.
2. Ensuring that adequate compensation is earned for the risk undertaken. Credit risk measurement tools and techniques are used to ensure that the credit risks on guarantees and on-lending are appropriately priced by charging fees to the beneficiaries.
3. Mitigating the credit risk exposure by structuring guarantees and loans to protect against loss.

There are various credit risk measurements, which include expected loss, loss of market value, unexpected loss and maximum probable loss. In these Guidelines, expected loss measurement is recommended as a useful measure to form the basis of different risk management tools. However, in order to apply this measure a number of variables need to be determined. The basic formula for the determination of expected loss (EL) is:

EL = PD x EAD x LGD

Where:
PD = Probability of default or probability of distress.
EAD = Exposure at default.
LGD = Loss given default.

EAD is the amount of exposure at the time of default. The exposure includes the guaranteed/on-lent loan utilised and not repaid plus interest where applicable.

LGD is determined as a percentage and may be estimated from the historical losses incurred in relation to the entity (or similar entities) and the amounts that were recovered by the government. Most governments do not recover from entities after credit events so the LGD is typically 100 per cent.

The probability of default is determined as a percentage and can be estimated based on the entity's risk rating. The probability of default for each rating is inferred from the default studies of ratings agencies and translating the internal credit score/rating to a rating agency rating. Based on the concepts of PD, EAD and LGD, Appendix A provides basic information on how to calculate expected loss for a loan.

3.3.5 Design and implementation of risk management policy tools

The previous sections discussed approaches to quantifying risk. This section discusses how those results can be used in risk management decisions.

Credit risk measurements enable the government to quantify the likelihood of credit events occurring, and if they were to occur, what the impact would be on the government's fiscal position. This knowledge informs decision making by risk managers with regard to which risk management policy tools or mitigation strategies to design and implement in order to reduce the likelihood of credit events occurring and to reduce their impact on the government's fiscal position if they were to occur.

The following policy tools may be available to risk managers to mitigate the government's risk exposure:

- Linking decisions on issuing new guarantees or on-lending to credit risk assessments.
- Limits on the total amount of guarantee and on-lending.
- Fees/risk pricing.
- Risk provisioning/contingency reserve.
- Partial guarantees/partial loans (structuring of agreements).

3.3.6 Linking decisions on issuing guarantees or on-lending to credit risk

Decisions on whether to issue guarantees or on-lend funds to an entity should be based on the credit quality of the specific applicant and the subsequent expected loss compared with other ways of supporting the project. In that way, the likelihood of distress can be determined from the onset and in order to shield the government from a credit event, some other form of government support, such as a direct grant or appropriation, may be deemed to be more appropriate, especially if the credit risk assessment shows that the entity will be unable to service the obligation.

3.3.7 Guarantee and on-lending limits

Generally, limits may be based on the appetite or overall ability of the government to absorb the guarantees and on-lent portfolios. In this way, the government is able to limit the exposure and its likely impact on the government balance sheet in times of crisis. The limits may be based on the nominal amount of exposure and/or incorporated in the overall debt limit of government that includes direct government debt and other forms of contingent liabilities.

Limits may also be set per entity, based on the credit quality of the entity. In this case, higher limits may be set for less risky entities, with entities that pose a higher risk to the government being allocated lower limits. The risk level of each entity is determined through the individual credit risk assessments.

3.3.8 Fees/risk pricing

1. compensate the government for the risk that it undertakes by granting guarantees and on-lending funds to entities
2. deter moral hazard by equalising the benefits of guarantees and on-lending where the entity can borrow on the strength of their own balance sheet
3. encourage the improvement of the entity's balance sheet through levying lower fees on good credit quality
4. fund for possible credit events by provisioning for a contingency reserve account.

3.3.9 Risk provisioning/contingency reserve account

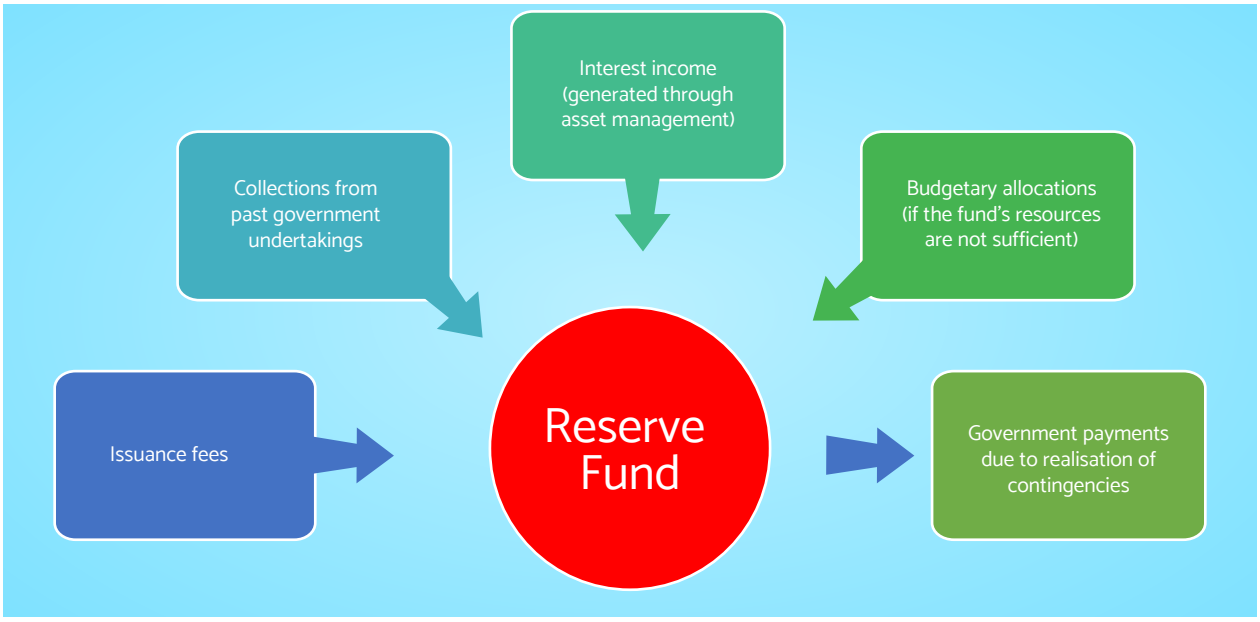
Risk provisioning may be used as a tool to mitigate the impact of credit events where entities are unable to service their guaranteed or on-lent obligations. This also adds transparency and discipline to the process of agreeing to take on new risks. Some governments have a policy that all fees go into the fund and the government must also allocate funds from the budget equal to the difference between the fees and expected loss.

The size of the reserve account or fund may be determined using the portfolio expected losses as determined through the credit risk assessments and measurements of the beneficiary entities on an annual basis. The reserve account can also be a notional (non-cash) fund, in the sense that it is a reporting item rather than an actual fund invested in specific financial assets.

Contingency reserve accounts are useful risk mitigation tools that help governments monitor and be prepared for the fiscal costs created by loan guarantees and on-lending. Figure 11 gives the financial flows of a typical actual reserve account.

Guarantee and on-lending fees are implemented as part of the credit risk management framework and they seek to:

Figure 11: Typical Financial Flows under an Actual Contingency Reserve Account



3.3.10 Partial guarantees/loans (structuring of agreements)

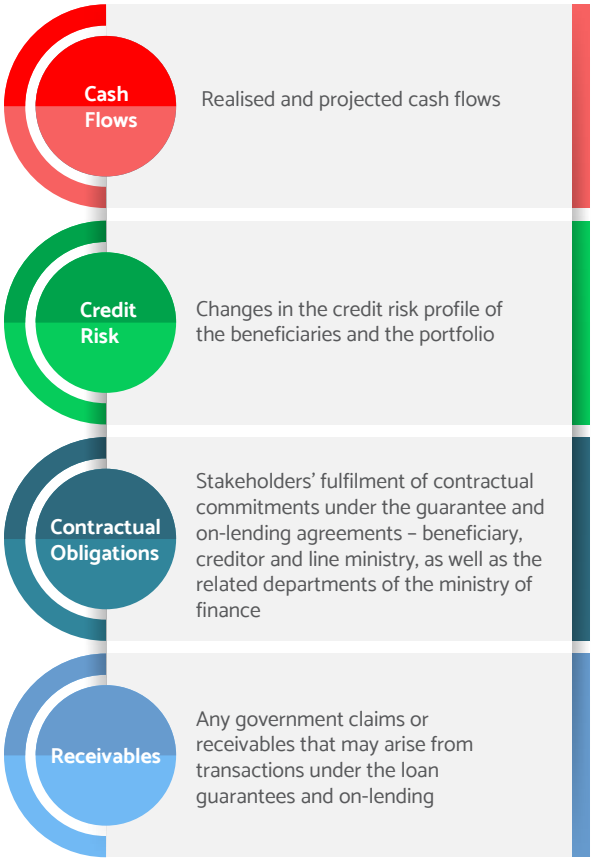
Once the credit quality of entities and the likely impact of the risk to be assumed is determined, governments may structure guarantee and on-lending agreements in such a way that the risk is minimised as much as possible. This may be achieved by providing partial guarantees or loans, and choosing debt instruments to be issued based on the credit quality of the entity. In structuring partial risk guarantees, it is important to take into account what would happen if a risk occurs that is outside the scope of the explicit guarantee: does another party, e.g. the lender, take the loss, or is there an implicit guarantee that means the government must pay so that the entity can keep operating?

It is therefore recommended that as part of their credit risk management frameworks for the management of loan guarantees and on-lending, countries should seek to design these risk management tools to reduce the likelihood of credit events as well as their potential impact on government finances.

3.4 Monitoring

Government loan guarantees and on-lent loans should be monitored regularly at both instrument and portfolio level. Monitoring can help demonstrate how risk exposure is changing over time, and allow governments to react to deteriorating situations, including proposing corrective measures to beneficiaries and planning for the potential materialisation of risks. Effective monitoring is also essential for collating data needed for statistical reports, risk bulletins and budgetary reporting. In practice, monitoring of loan guarantees and on-lending can be mapped into the monitoring of cash flows, credit risk profiles, and the fulfilment of contractual obligations by the parties and receivables (Figure 12).

Figure 12: Monitoring Loan Guarantees and On-lending



- establishing and reporting the government's exposure vis-à-vis loan guarantees and on-lending
- enabling the monitoring of the portfolio against any limits set for issuances or stocks of loan guarantees and on-lending
- determining the appropriations needed from the budget for expenditures under guarantees and on-lending
- providing data for credit risk monitoring, since the more data on past payment performances is available to the public debt managers, the more options they have for using different approaches to credit risk analysis and assessing the current and future credit risk statuses of the borrowers.

Tables 13 and Table 14 give standard cash flows that occur under loan guarantees and on-lending respectively.

Table 13: Main Cash Flows under Loan Guarantees

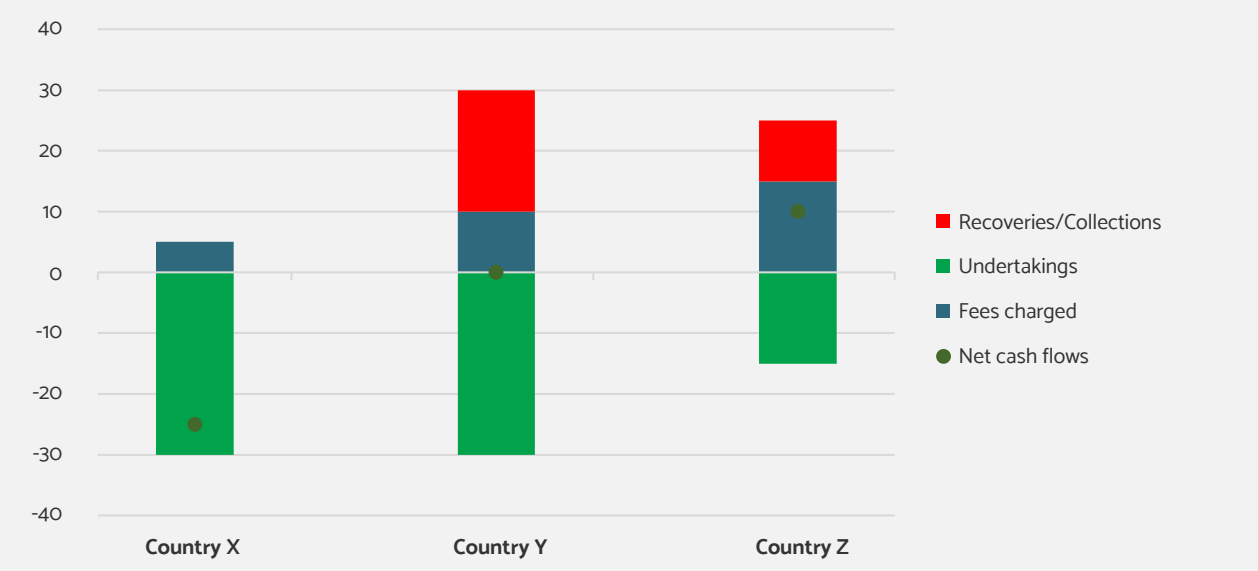
Cash inflows		
Guarantee fee	From borrower to the government as guarantor	
Administrative fee	From borrower to the government as guarantor	
Collections (cash or through collateral) from undertaken guarantee payments	From borrower/borrower's collateral to the government as guarantor	
Cash outflows		
Undertaken payments when guarantee is called	From government as guarantor to the lender	
Other costs incurred by the government when issuing the guarantee, not charged or revoked from the borrower	From government as guarantor to the lender	
Other cash flows		
Disbursements under the loan	From lender to the borrower	Do not directly affect government finances yet increase government's credit risk exposure
Repayments under the loan	From borrower to the lender	Do not directly affect government finances yet decrease government's credit risk exposure

Table 14 : Main Cash Flows under On-lent Loans

Cash inflows		
On-lending fee	From borrower to the government as lender of the on-lent loan	
Administrative fee	From borrower to the government as lender of the on-lent loan	
Repayments under the on-lent loan	From borrower to the government as lender of the on-lent loan	
Collections (cash or through collateral) from past defaults by the borrower	From borrower/borrower's collateral to the government as lender of the on-lent loan	
Cash outflows		
Repayments under the main loan	From government as borrower to the lender	
Other costs incurred by the government when contracting the loan not charged or revoked from the final borrower	From government as borrower to the lender	
Other cash flows		
Disbursements under the loan	From lender to the borrower (government)	Increase government's public debt
Disbursements under the on-lent loan	From lender (government) to the borrower	Increase government's receivables

The government's net position can be monitored by reporting the cash flows on a regular basis. Figure 13 gives hypothetical country examples with different levels of fee collections, undertakings from guarantees and recoveries from these. A similar analysis can be made for the on-lent loans, or loan guarantees and on-lending can be analysed together.

Figure 13: Cash Flow Monitoring



3.4.2 Monitoring credit risk

Monitoring the financial health and creditworthiness of borrowers throughout the life of the guaranteed or on-lent loans is more challenging than monitoring the actual cash flows. Credit risk models, which are utilised for initial assessment and follow-up monitoring, are covered in Section 3.3 and Appendices B and C. Monitoring beneficiaries that operate in different sectors of the economy may require sectoral expertise which may not be available in debt management departments. Here, coordination and information sharing among sectoral oversight departments and ministries and the ministry of finance is crucial.

Having access to adequate information is an important prerequisite for regular monitoring of credit risk. Guarantee beneficiaries should provide the required information on a regular basis to the line ministry and the ministry of finance's risk monitoring team. The information to be shared can be grouped into:

- Information about the beneficiary's financial position.
- Information about the project being financed with the loan proceedings.
- Information about the loan.

Recording data on loan guarantees and on-lent loans is covered in the next section in more detail. Here, it is important to emphasise that recording the cash flows with a reasonable time lag provides for exposure at default, an important parameter for calculating the expected and unexpected losses from the loan guarantees and on-lending. In order to calculate the probabilities that the borrower institutions might default on their payment obligations, the financial health of these institutions, including any developments under the project being financed through these loans, should be evaluated.

At the portfolio level, the credit risk posed by the loan guarantees and on-lent loans should be monitored closely by the ministry of finance, as discussed in Section 3.3 of these Guidelines. Here, it is worth highlighting that risk reporting is key to monitoring the portfolio credit risk. The parts reserved for portfolio credit risk from loan guarantees and on-lending in fiscal risk statements or risk bulletins analysing the evolution of credit risk enable the decision makers and other stakeholders to see the overall picture of the loan guarantees and on-lending provided to various beneficiaries.

3.4.3 Monitoring stakeholders' fulfilment of contractual commitments under the guarantee and on-lending agreements

The guarantee contract between the lender and the government and the agreement between the lender and the borrower institution for the underlying loan are parts of the same financial package. There is usually a third agreement (or protocol) concluded between the government and the borrower regulating mostly the charging of fees and recovery issues. In the case of on-lending, the main loan agreement and the on-lending agreement are concluded between the parties. Being as such, the terms of these agreements are highly correlated including cross-references to each other. The governments should play an active role in drafting the whole package of agreements to ensure proper clauses are in place regarding issues such as:

- Collateral and counter-guarantee (if there are any).
- Guarantee fee and administrative costs to be charged to the borrower.
- Rules and procedures to be followed when the guarantee is called.
- Financial and information-sharing obligations of the lender and the borrower towards the government as the guarantor.
- Sanctions for noncompliance.
- Recovery (collection procedures for government payouts, etc.).

Following the registration of the contracts, the contractual obligations of the parties should be monitored closely to take measures and legal action when necessary, in cases of noncompliance.

3.4.4 Collections/receivables that arise from transactions under loan guarantees and on-lending

The legal framework should enable the government to monitor and collect its receivables arising from loan guarantees and on-lending – any unpaid fees, penalty interest, expenses and receivables from the payments made for calls on guarantees, collateral, etc. In the case of default by the borrower, under both loan guarantees and on-lending, the central government should pursue the necessary legal process for obtaining recoveries stipulated under the agreements.

It is recommended that there is a department or team managing and monitoring the receivables stock and cash flows.

3.5 Recording data

Recording is an integral part of the framework for the management of loan guarantees and on-lending. It is the launchpad for the effective identification of the government's exposure, which improves the effectiveness of the credit risk management framework. Without proper recording of the loan guarantee and on-lending data, it would not be possible to monitor or to report on these portfolios.

It is therefore imperative that the government's loan guarantee and on-lending portfolios are properly recorded. Comprehensive registers of government loan guarantees and on-lending must be developed and kept up to date in order to ensure the effective management of exposure. The coverage of information kept in these registers should be designed so as to enable credit risk managers to easily identify the characteristics of the portfolios, the volume of the exposure and the type of risks that the government faces from these portfolios. The registers, kept either in Excel or in other data systems, should be easy to use in the credit risk management framework and should enable effective reporting and informed decision making.

3.5.1 Type of data to be recorded for loan guarantees and on-lent loans

Table 15 gives the key information to be recorded in order to ensure that the government's exposure is appropriately captured for both forms of financial support.

In the case of on-lending, qualitative and other data, including the cash flows of the original (primary) loan, is recorded as part of the public debt recording and monitoring systems, because the government is the borrower of these loans. In the on-lending register, this link with the public debt database should be provided for monitoring, reporting and portfolio risk analysis purposes.

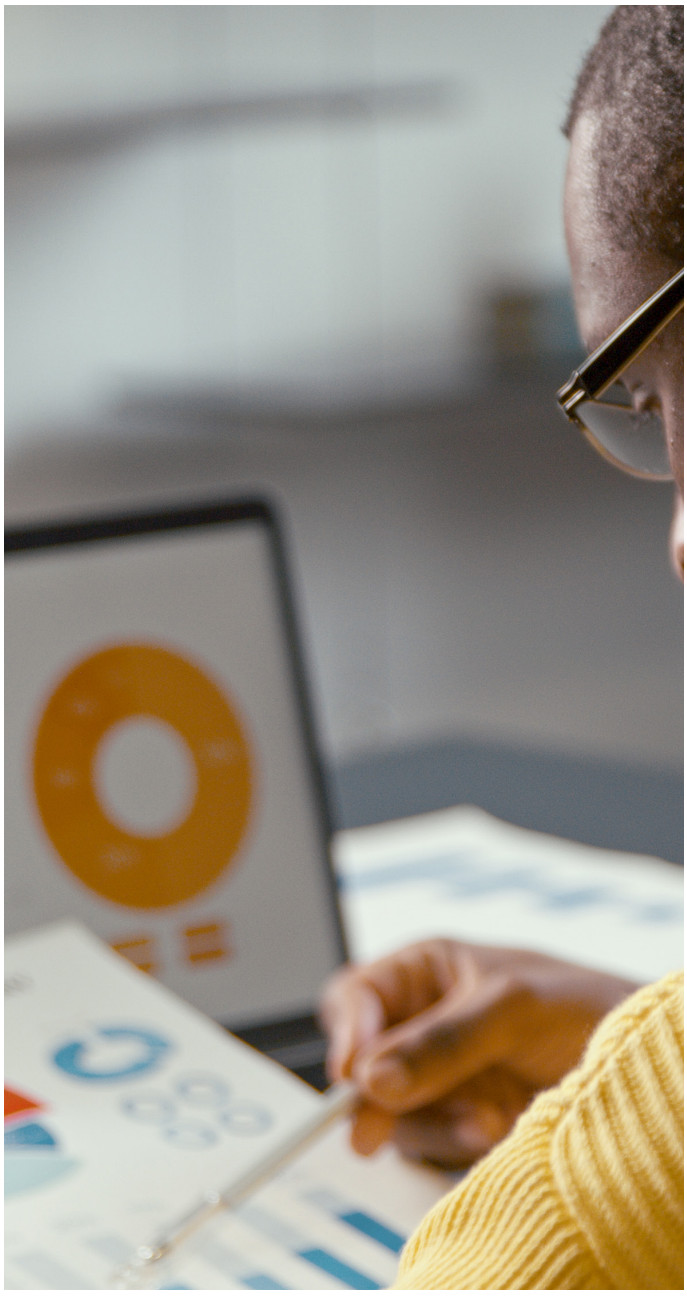


Table 15 : Data to be recorded – loan Guarantees and on-lending

	Loan guarantees	On-lending
Qualitative (descriptive) information	Beneficiary entity utilising the guaranteed loan.	Beneficiary entity utilising the on-lent loan.
	Name and type of lender (e.g. commercial creditor, public creditor, multilateral institution, etc.) providing the guaranteed loan.	Name and type of original lender (e.g. commercial creditor, public creditor, multilateral institution, etc.) providing the primary loan which is on-lent (government is the lender of the on-lent loan).
	Project information – name of the project, line ministry, investment amount, etc. – if the guaranteed loan is provided for project financing.	Project information – name of the project, line ministry, investment amount, etc. – if the on-lending is provided for project financing.
	Programme information – name of the programme, line ministry, etc. – if the guarantee is provided for programme financing.	Programme information – name of the programme, line ministry, etc. – if the on-lending is provided for programme financing.
	Issuing institution/authority – ministry of finance or other institution legally authorised to contract guarantees.	Issuing institution/authority – ministry of finance or other institution legally authorised to provide on-lending loans.
	Signature and effectiveness (the date when the guarantee agreement enters into effect after the 'conditions precedent' set are fulfilled) dates of loan guarantee agreement.	Signature and effectiveness (the date when the on-lending agreement enters into effect after the 'conditions precedent' set are fulfilled) dates of on-lending agreement.
Terms and conditions under the agreements	Type of debt linked to the guarantee (bond, direct loan, etc.).	Type of debt linked to the on-lent loan (bond, direct loan, etc.).
	Nominal debt/loan amount contracted.	Nominal debt/loan amount contracted.
	Nominal loan amount subject to guarantee if it is different from the nominal loan amount contracted (if there is a partial guarantee).	Nominal loan amount subject to on-lending if it is different from the nominal loan/debt amount contracted (if there is partial on-lending).
	Currency denomination of the guaranteed loan.	Currency denomination of the primary and on-lent loan (if the currency of the primary loan and on-lent loan is different, this information should also be recorded).
	Main terms of debt – interest rate, interest payment dates, grace period, maturity, principal payment dates, etc.	Main terms of on-lent loan – interest rate, interest payment dates, grace period, maturity, principal payment dates, etc. (Terms of on-lent loan can be the same as or different from the terms of the primary loan contracted by the government – if they are different, the on-lending register can record both.)
	Guarantee fees payable by beneficiary, as well as other fees such as commitment fee, administrative fee, penalty fee etc.	On-lending fees payable by beneficiary, as well as other fees such as commitment fee, administrative fee, penalty fee etc.
	Conditions attached to the guarantee.	Conditions attached to the on-lending loan.
Actual cash flow information	Disbursement amounts, i.e. amounts utilised, under the guaranteed loan, with the actual disbursement dates.	Disbursement amounts, i.e. amounts utilised, under the primary and on-lent loan, with the actual disbursement dates.
	Repayments of interest and principal, with the actual dates – to the lender.	Repayments of interest and principal, with the actual dates – to the government.
	Payments of fees with the actual dates.	Payments of fees with the actual dates.
	Payments made due to the credit events (defaults) that resulted in the government servicing the obligations on behalf of the entity.	Payment arrears due to the credit events (defaults) where the beneficiary of the on-lent loan was not able to service the debt to government.
	Collections from the beneficiary which are received in the aftermath of defaults.	Collections from the beneficiary which are received in the aftermath of defaults.
Projected cash flow information	Disbursement projections. Repayment projections.	Disbursement projections. Repayment projections.

The above data should be recorded upon the issuance of loan guarantees and on-lending. It should be updated at least quarterly by the beneficiary entity and responsible department and reported to the DMO.

Timely and accurate recording of data is important as it enables risk managers within the DMO to know who the government is exposed to as well as whom to conduct the credit risk assessment on. The type of support provided enables identification of the risk that government is exposed to. The nominal amount and the accrued interest enable risk managers to quantify the government's volume of exposure. Currency denomination provides knowledge on the level of the government's foreign currency risk exposure. Keeping the lender's name in the database enables risk managers to know who government would need to engage should there be a default. It is also helpful to keep historical data of defaults in order to assist in assessing the risk should there be additional requests for government assistance from various entities. In addition, historical default data is crucial for efforts to forecast probabilities of default internally. Figure 14 provides the areas in which the data recorded can be used under the loan guarantees and on-lending.

Figure 14 : Use of Recorded Data on Loan Guarantees and On-lending

DESCRIPTIVE INFORMATION	TERMS & CONDITIONS OF THE AGREEMENTS	ACTUAL CASH FLOWS	PROJECTED CASH FLOWS
• To whom is the government exposed? • Who are the lenders / primary lenders? • Which projects / programmes are supported? • How many loan guarantees/on-lent loans are provided in a given time period?	• Maturity profile of the guarantee/onlending portfolio • Interest rate and currency profile of the guarantee/on-lending portfolio • Issuance amounts of the loan guarantees/ on-lending	• How is the payment performance of the beneficiary? • What is the stock of the guarantee/on-lending portfolio in a given time period? • How much guarantee/on-lending fees are charged to the beneficiaries? • What is the amount of government undertakings from called guarantees or claims from defaults under the on-lent loans? • What is the amount of claims and collections from the guarantee/on-lending beneficiaries?	• What are the projected disbursements under the agreements? • What is the profile of future payments during the lifetime of the loan guarantees and on-lending?

3.5.2 Initial recording of data for loan guarantees and on-lending

Upon approval of a guarantee, the documents (loan guarantee agreements or on-lending agreements) must be submitted to the DMO so that the transaction is recorded in the related register. The approved documents should also be provided to the beneficiary entity and the line ministry for both institutions to record the same data in their systems. Tables 16 and 17 are illustrative examples of how the recording template may be structured in order to record the initial data. For recording purposes, a template that resembles the register should be developed to allow beneficiary entities to submit data to the line ministry and to the DMO.

Table 16 : Loan Guarantee Register Template

Borrower (Guarantee Beneficiary Entity)	Programme Project Name	Issuer	Lender	Underlying Instrument	Guarantee Agreement Date	Guarantee Effectiveness Date	Nominal Loan Commitment Amount (US$)	Guarantee %	Maturity	Grace Period	Interest Type	Interest Rate	Guarantee Fee
SOE 1	High Capacity Rail Corridor Project	Ministry of Finance	World Bank	Loan	15.03.2020	15.04.2020	1,000,000	100%	12 Years	5 Years	Fixed	2%	Flat 1% of Nominal Quarantee Amount per Annum

Table 17 : On-lending Register Template

Borrower (On-lent loan Beneficiary Entity)	Programme Project Name	Issuer/ Lender	Origi-nal-Lender	Underlying Instrument	On-lending Agreement Date	On-lending Effectiveness Date	Nominal Loan Commitment Amount (US$)	On-lending %	Maturity	Grace Period	Interest Type	Interest Rate	On-lending Fee
SOE 1	COVID-19 Support Programme	Ministry of Finance	KFW	Loan	15.04.2020	25.05.2020	750,000	100%	10 Years	3 Years	Fixed	2%	None

If the DMO uses debt management systems such as DMFAS, CS-DMRS/CS-Meridian or another in-house system, these systems should be used to record the loan guarantees and on-lending data. Cash flow data captured through these systems can also be used by the DMOs for the purposes of proper recording. Excel-based recording should support data system recording if the latter does not allow the recording of all the necessary data items.

3.5.3 Periodic recording of data for loan guarantees and on-lending

Once the initial recording has taken place, it becomes critically important that the data gets updated regularly so as to ensure proper monitoring of the portfolios. Therefore, risk managers need to have a process in place to ensure that the registers are updated regularly with all the relevant data. Most importantly, this process needs to be institutionalised such that the submission of those regular updates to the line ministry and ultimately to the DMO are structured and are guided by policy. This may be achieved by issuing a practice note or through a ministerial or parliamentary decree.

Tables 18 and 19 are examples of how the periodic (usually quarterly) reporting templates may be structured to enable beneficiary entities to report utilisations and payments under the loan guarantees and on-lent loans. Besides this periodic reporting, the contracts should also oblige the beneficiary entities and lenders to send copies of payment and disbursement notices to the DMOs for timely record keeping and cross-checking of data.

Table 18 : Quarterly Loan Guarantee Status Report Template

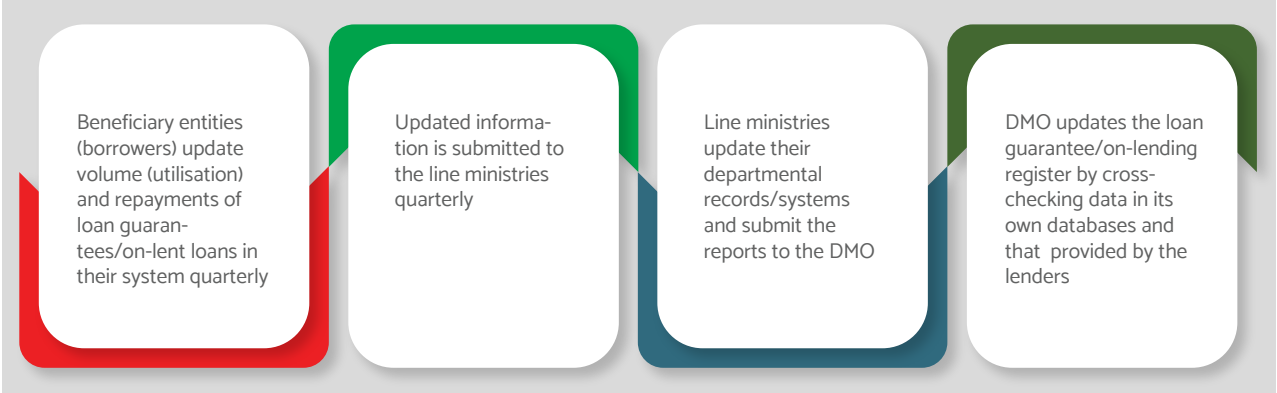
Borrower (Guarantee Beneficiary Entity)	Programme Name/Proj-ect Name	Issuer	Lender	Underlying Instrument	Guarantee Agree-ment Date	Guarantee Effective-ness Date	Nominal Loan Commit-ment Amount (US$)	Disburse-ment Amount (Cumulative as of March 2022	Principal Repay-ment Amount	Interest Accrued paid	DOD (Debt Out-standing Dis-bursed	Guaran-teee Fee Paid Cumulative as of March 2022	Default Events to date
SOE 1	High Capacity Rail Corridor project between Silverton and Gqeberha	Ministry of Finance	World Bank Multilat-eral Official Creditor	Loan	15.03.2020	15.04.2020	1,000,000	500,000	0	9,375	500,000	20,000	Interest payment obligation was taken over by government on 31.12.2021

Table 19 : Quarterly On-lending Status Report Template

Borrower (On-lent loan Beneficiary Entity)	Programme Name / Project Name	Issuer/ Lender	Original-Lender	Underlying Instrument	On-lending Agreement Date	On-lending Effectiveness Date	Nominal Loan Commitment Amount (US$)	Disbursement Amount (Cumulative as of 31 March 2022	Principal Repayment Amount (Cumula-tive as of 31 March 2022	Interest Accrued Not Paid	DOD (Debt Out-standing Disbursed	On-lending Fee Paid (Cumula-tive as of March 2022	Default Events to date
Industrial develop-ment Bank	COVID-19 Support Programme	Ministry of Finance	KFW - Bilateral Investment Bank	Loan	10.04.2020	25.04.2020	750,000	250,000	83,833	3,531	166,167	15000	None

Figure 15 below is an illustration of the process that can be institutionalised for the submission of periodic reports to the DMO for monitoring and updating the guarantee register.

Figure 15: Institutionalisation of Data Flows – Loan Guarantees and On-lending



3.6 Reporting and disclosure

Reporting and disclosure of contingent liabilities is crucial for their effective management. For the purposes of this section, the main definitions, principles and standards pertaining to the reporting and disclosure of guaranteed and on-lent loans will be provided.

3.6.1 General principles and benefits of reporting

- Reporting and disclosure practices vary across countries. They are determined largely by each country's existing budgeting and accounting frameworks, ability to access relevant data and capacity of monitoring. However, it is recommended that the following general principles are followed by all governments:
- Reporting and disclosure should be based on internationally accepted accounting and fiscal transparency standards. Although complete adherence to these standards is preferable, when this is not achievable, gradual approaches are suggested.
- Data must be reported in a timely manner and must be accurate, complete and clear, for both statistical and accounting purposes.
- The inclusion of provisions governing reporting and disclosure obligations with distinct responsibilities in national legislation provides security for consistency and accountability.

The main benefits of reporting on government loan guarantees and on-lending are as follows:

- Increasing the transparency of all liabilities of the government, including loan guarantees and on-lent loans, helps the government to better manage them and to avoid surprises.
- Reporting on the magnitude of these liabilities provides for better budgetary planning, debt sustainability analysis and preparation of fiscal policies and strategies.
- Improved credibility of the government can lead to an increase in new financial inflows, increase in market access and reduced risk margins.

Publicly shared information should be presented in such a way as to provide the public with an understanding of the government's fiscal position towards loan guarantees and on-lending, as well as its policy for managing and mitigating credit risk and other types of risks of this position.

3.6.2 Reporting frameworks

The following parameters should be clarified in meeting reporting requirements:

1. Accounting basis

The accounting basis to be adopted in reporting loan guarantees and on-lending depends on the accounting methodology adopted by the public sector in the country; cash-based, accrual-based or a methodology that falls between these two approaches. In cash-based accounting, transactions are recorded when cash is received or paid. In accrual accounting economic commitments are recorded during the period they are generated and not when paid as in the cash basis. For example, in cash basis, only when interest is paid is it recorded. In accrual basis, interest accruing during the reporting period is recorded as interest payable. Though accrual basis of accounting may better reflect the financial position of the governments, many developing countries are facing difficulties in compiling data on an accrual basis. In such cases a gradual approach from cash to accrual accounting is recommended.

2. Valuation methods for loans

There are different measures used in contingent liability valuation. Face value or nominal value is the most widely used measure by countries in their fiscal and statistical reporting, mostly because it is the easiest and requires no quantification. However, the face value approach does not

provide any information either about the probability of default/the contingency occurring, or the level of loss that the government expects from its guaranteed loan exposure. For a loan guarantee, face value is the nominal loan amount covered by the government guarantee. Statistical reports usually present debt outstanding for guaranteed and on-lent loans in nominal terms. There are some countries calculating and reporting expected loss estimates of their portfolios.

3. Gross and net

Net liabilities are obtained by subtracting financial liabilities from financial assets for each corresponding item. In reporting the government's financial position vis-à-vis loan guarantees and on-lending, fees collected from the beneficiaries and any cash or out-of-collateral reimbursements made for called guarantees should be reported to give the net position of the government.

4. Flows and stocks

Flows represent liquidity positions and amounts due as opposed to stocks that represent burden or solvency positions. Flows are measured between two time periods and stocks are measured at a particular time point. In measuring flows, statisticians and accountants use the same methods, as they both move progressively towards accrual-based accounting. However, stock measurements can differ between the two disciplines and therefore different values may be seen in the two statements. Disbursements and repayments under loan guarantees and on-lending represent the main flow data while the outstanding stocks of guaranteed and on-lent loans as of the reporting date represent the main stock data.

Examples of public debt and contingent liabilities reports that include data on loan guarantees and on-lending are given in Table 20. The first two columns show 'direct' reporting while the third column shows 'indirect' reporting. Indirect reporting, unlike direct reporting which is based on legislative requirements, is in accordance with agreements reached between governments and international financial institutions.

Table 20 : Reports Containing Information on Loan Guarantees and On-lending

Internal reporting within the ministry of finance	External reporting by or outside of the ministry of finance – other agencies, ministries and the parliament	International reporting frameworks
▪ Monthly/quarterly/ad hoc internal reports ▪ Supporting reports for budget preparation and analysis ▪ Supporting reports for debt management strategy design and implementation ▪ Risk status – ongoing assessment reports on the quality of the portfolio	▪ Regular reporting from a guarantee beneficiary or final borrower of an on-lent loan to the ministry of finance ▪ Statistical reporting published on the web page of the ministry of finance ▪ Periodic published reporting of public debt ▪ Reports supporting budget submission and queries ▪ Fiscal risk statements/ fiscal risk report ▪ Reports – ad hoc requests	▪ Quarterly Public Sector Debt Statistics (World Bank and IMF) ▪ Quarterly External Debt Statistics (World Bank and IMF) ▪ Government Financial Statistics (IMF) ▪ Enhanced – General Data Dissemination Standards (IMF) ▪ International Debt Statistics (World Bank)

3.6.3 Reporting of loan guarantees and on-lending – statistical presentation

Debt and guarantees reporting, in essence, can be presented in accordance with either statistical definitions or accounting conventions. The most accepted statistical definitions are based on either SNA (System of National Accounts, 2008) or GFS (Government Finance Statistics, 2014). Public sector accounting is largely based on IPSAS (International Public Sector Accounting Standards, latest version 2021), which is derived from IFRS (International Financial Reporting Standards).

According to GFS 2014, which is an international statistical reporting framework developed by the IMF, a guarantee is not recognised in macroeconomic statistics unless it is called in the case of loan guarantees. However, there is an exception to this rule: if a guarantee is provided by a government to an entity which is already in financial distress and there is a very high probability that it will be called, this guarantee is to be treated as public debt from the beginning. According to the GFS Manual (IMF 2014), a government must include publicly guaranteed debt and other one-off guarantees in its balance sheet as a memorandum item with a nominal value.

On the basis of the same rationale, budget statements which are termed as 'Statement of Government Operations' for countries that adopt GFS (2014) do not record the potential default of guarantees as an expense or refinancing of amortisation items. Guarantees are simply acknowledged as a memorandum item. Guarantee payments would only appear in the statement if default actually takes place and if the government has to meet the expenses.

However, for on-lent loans, there are two sets of transactions: one for the original loan and the other for the on-lent loan. For the on-lent loan, the government will act as a lender. Therefore, interest received from the final borrower will be treated as a revenue item and repayments of principal received as an acquisition of capital. It is important to emphasise again that on-lending is not an instrument in the form of contingent liability. The loan on-lent is a direct borrowing by the government, and is recorded and reported as public debt.

3.6.4 Reporting of a guaranteed and on-lent loan – accounting presentation

Accounting-based presentation of loan guarantees and on-lent loans can be different from statistical presentation. Therefore, the values that are observed and how they are recorded (i.e. expense item or memorandum item) can be different in statistical and accounting presentations.

Accounting interpretation (in accordance with International Public Sector Accounting Standards, IPSAS 19) and recording contingent liabilities (as flows) in the income statement must satisfy two conditions. First, they must recognise that guarantees, at present or in the future, will probably give rise to an outflow of resources. Second, a provision has to be made to match the outflow of resources. When these two conditions are satisfied the contingent liability can be reported as an expense in the 'income' statement. If these conditions are not satisfied, the liability will be considered as a statistical value and will be reported as a memorandum item.

A similar procedure is followed when compiling the stock values in the balance sheet. When the above two conditions are satisfied, the guarantee will be recorded in the government's balance sheet (IMF, Government Finance Accounts 2014). Otherwise, it will be only recorded in the beneficiary's balance sheet. The government is a creditor when an on-lent operation takes place. Therefore, an on-lent loan is treated as an asset by the government.

IPSAS 19 is an accrual-based framework where revenues and expenses are recognised and recorded as they contractually originate. Contrarily, with cash-based accounting systems, no recording or recognition is done until transactions are realised; hence contingent liabilities, like loan guarantees, are not recorded until they are called.

APPENDICES

APPENDIX A. Basic Calculation of Expected Loss

The main measures that are used by government risk managers in practice for quantifying credit risk from loan guarantees and on-lending include maximum loss, probability of default, expected loss, unexpected loss and volatility of market values. In this appendix, expected loss will be explained, as it is the most widely used measure in sovereign credit risk management after the maximum losses (face values) of guaranteed and on-lent loans.

Expected loss measure and its parameters

Expected loss (EL) gives information about the average amount of loss, taking into account the probability of loss, the amount of exposure and the percentage of loss in the case of default.

It is calculated as the present value of government payments (expected exposure) under the guarantees, multiplied by their respective probabilities. If there are expected recoveries from these guarantees, they are added to the calculation through 'loss given default' (LGD), which is calculated as '1 minus the recovery rate (RR)'.

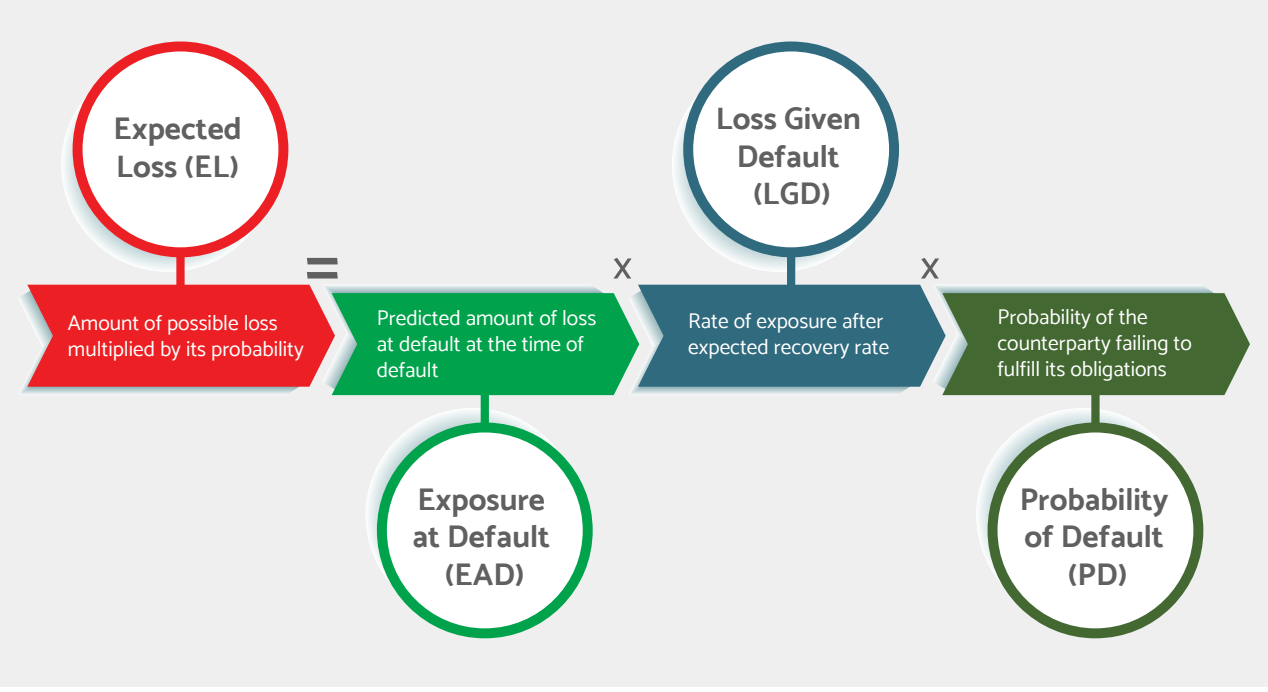
To illustrate EL as a formula:

EL = EAD x LGD x PD

Where:

EL = Expected loss.
EAD = Exposure at default = The amount the government is exposed to the guarantee/on-lent loan beneficiary at the time of default.
LGD = Loss given default = 1 – Recovery rate (RR). LGD may be estimated on the historical losses incurred in relation to similar entities and the amounts that were recovered by the government.
PD = Probability of default = Probability of the counterparty failing to fulfil its obligations.

Figure 16 : Expected loss measure and its parameters



EL equals zero if the PD is zero. This would occur, for example, if a ministry of finance issued a loan guarantee to an AAA-rated bank with a 100 per cent expectation that this bank will repay the loan as a borrower. In this case, the PD and expected loss are zero, irrespective of the EAD and LGD.

EL is highest – equals maximum loss – for cases where the guarantee is provided with a 100 per cent probability that the borrower will not be able to repay the loan, as in cases of some troubled SOEs and where there is no collateral or hope for recovery. This makes RR 0 and LGD 100 per cent. Thus, EL equals EAD, which in most cases is the maximum loss.
The term 'expected loss' can be misleading to non-technical audiences. EL is an 'average loss' measure that takes into account the probability of a default and the average amount that will be lost if a default happens. Expected loss in this context is a statistical term, being the probability-weighted outcome. It is not 'what we expect to happen' as used in normal conversation. For example, if we had a loan for US$100 million with a 1 per cent chance of default, in normal conversation we would say that we don't expect it to default or have a loss. But its expected loss would be US$1 million (assuming a 100

per cent LGD). Furthermore, the loss expected when a default occurs is US$100 million, not US$1 million, so managers should be prepared for that possibility and not be reassured by the lower US$1 million expected loss.

In efforts to calculate EL, the most challenging prediction is PD for the loan. In order to estimate PD, debt managers use a variety of techniques and statistical tools. Table 21 illustrates how the ratings may be translated.

Table 21 : Default Probabilities by Letter Rating: 1970 to 2013

Source: Moody's Investors Service – Exhibit 33, https://www.moodys.com/research/Annual-Default-Study-Corporate-Default-and-Recovery-Rates-1920-2013--PBC_166292.

Example of a basic calculation of expected loss for a loan

An SOE asks for a government loan guarantee to be able to borrow from a foreign lender a loan of US$100 million. The maturity of the loan is six years with a two-year grace period and the interest rate is 5 per cent per annum. Principal repayments are made annually. If the SOE defaults, a 20 per cent recovery is expected thanks to the collateral secured by the guarantee protocol. The credit risk department conducts a risk assessment and estimates the probability of default as 5 per cent during the grace period and 15 per cent during the repayment period.

Table 22 : Expected Losses during the Lifetime of a Loan

Years	Disbursement (at the start of year)	Principal repayment (at end of year)	Interest payment (at end of year)	Stock outstanding	EAD	PD	RR	LGD	EL	EL (PV)
1	100	0	5	100	105	0.05	0.2	0.8	4.20	4.00
2	0	0	5	100	105	0.05	0.2	0.8	4.20	3.81
3	0	25	5	75	105	0.15	0.2	0.8	12.60	10.88
4	0	25	3.75	50	78.75	0.15	0.2	0.8	9.45	7.77
5	0	25	2.5	25	52.5	0.15	0.2	0.8	6.30	4.94
6	0	25	1.25	0	26.25	0.15	0.2	0.8	3.15	2.35

Table 23 : Expected Losses during the Lifetime of a Loan (Formulas)

Years	Disbursement (at the start of year)	Principal repayment (at end of year)	Interest payment (at end of year)	Stock outstanding	EAD	PD	RR	LGD	EL	EL (PV)
1	100	0	=C3*0.05	=+C3-D3	=F3+E3+D3	0.05	0.2	=1-13	=XG3*H3*J3	=K3/(1+(0.05))^1
2	0	0	=F3*0.05	=F3-D4	=F4+E4+D4	0.05	0.2	=1-14	=G4*H4*J4	=K4/(1+(0.05))^2
3	0	25	=F4*0.05	=F4-D5	=F5+E5+D5	0.15	0.2	=1-15	=G5*H5*J5	=K5/(1+(0.05))^3
4	0	25	=F5*0.05	=F5-D6	=F6+E6+D6	0.15	0.2	=1-16	=G6*H6*J6	=K6/(1+(0.05))^4
5	0	25	=F6*0.05	=F6-D7	=F7+E7+D7	0.15	0.2	=1-17	=G7*H7*J7	=K7/(1+(0.05))^5
6	0	25	=F7*0.05	=F7-D8	=F8+E8+D8	0.15	0.2	=1-18	=G8*H8*J8	=K8/(1+(0.05))^6

In this simplified example, EAD is taken as the outstanding stock of the loan and the interest due at the year of default. This may not be the case, as the entity may default only on the principal instalment and the government can step in only for this particular tranche. The contractual clause definitions determine the defaulted amounts and the actual exposure of the government due to default.

Expected loss has limitations as an average measure. The government's actual payments under any single guarantee may deviate substantially from its expected loss calculated at year zero. For example, in case of the above SOE, if default occurs in year four, the government will have to assume at least the whole principal plus interest payment (if not the whole stock outstanding) minus any recoveries, which will definitely be higher than 7.77, the PV of expected loss calculated for year four. (It will be the PV of 28.75; 25 for the principal payment and 3.75 for the interest due in year four). Alternatively, if the SOE does not default in that particular year, the loss will be zero. Despite its limitations, expected loss provides an assessment of the (expected) fiscal burden of the contingent liability portfolio. It can be used in risk management frameworks in different ways, such as for determining guarantee and on-lending limits, guarantee fees, the effectiveness of partial guarantees and the planning for contingency reserve fund appropriations. If the government does not have a contingency reserve fund, the outcome of the expected loss determination may be used in the budget process.

The sum of the expected losses for each loan in the portfolio gives the expected loss of the portfolio.

Expected loss has limitations as an average measure. The government's actual payments under any single guarantee may deviate substantially from its expected loss calculated at year zero

APPENDIX B. Credit Risk Analysis Models

There are four main types of model used in sovereign credit risk analysis. These are: i) credit scoring models, ii) statistical models, iii) financial scenario models and iv) structural models. In essence, these models have been developed primarily to estimate the probability of default by the beneficiary entities. However, financial scenario models can also be used to estimate the loss given default.

As stated earlier in Appendix A, estimating a unique value for probability of default is more difficult than forecasting its likelihood in broad ranges such as 'possible, probable and remote'. Each model has advantages and disadvantages, so DMOs may utilise either one or a combination of these models to get different perspectives on credit risks. The choice of model depends primarily on the profile of the borrower, the availability of data and the purpose of the analysis (e.g. to estimate probability of default or loss given default). The sections below describe the characteristics of each approach.

1. Credit rating/scoring models

The credit scoring approach is similar to the methodology used by independent rating agencies like Standard & Poor's, Moody's or Fitch. In a scoring model, the risk of an entity is assessed by means of qualitative and quantitative information collected about this entity. The aim is to come up with a rating which can be used to quantify an entity's ability and willingness to service its debt.

A credit risk assessment is conducted by looking at pre-defined financial performance indicators of the debt servicing ability of the potential beneficiaries. Typically the most recent financial performance indicators are used, but future projections on the entity may be included if the project is new or future operations are expected to be significantly different from the recent state.

Loan repayments from an entity come from four primary sources:

- Net operating income
- Reserves
- New debt
- One-off sales of assets.

Ideally the entity will have net operating income that is comfortably higher than the debt servicing required and has sufficient liquidity to enable payments to be made on time. If there is a shortfall in net operating income, it may be possible to use reserves and savings, but these will eventually be exhausted. Lenders will generally be happy to offer new debt even if there is not current liquidity, if it is clear that the long-term value of the entity is significantly greater than the debt so that the new debt can be expected to be paid reliably. As a last resort, the entity may be able to raise funds from one-off sales of non-core assets such as land.

Given these different ways of paying debt, given that the internal workings of one organisation will be different from the next, and given that there may be short-term fluctuations in some of the financial indicators, scorecards look at multiple indicators, and then take a weighted average of the risk indicated by each.

Therefore, a credit scoring methodology can be designed using the following groups of indicators:

- Assessment of recent financial performance: By examining the financial statements and extracting relevant data, the important financial ratios are calculated for each year and averages are obtained. The ratios are then compared with benchmark values and the performance of the borrower is given weighted scores for each indicator. Examples of these financial ratios are highlighted in Appendix C.

- **Non-financial factors:** These are factors that influence the performance of the borrower and may be either external or internal to the borrower, e.g. sector status, economic background, organisation structure, governance, etc. These factors help to assess whether the financial position is likely to improve or worsen. As with the financial factors, each non-financial factor/indicator is given a score that is weighted to contribute to the overall score.

- **Project feasibility analysis:** For a new project, and for large new initiatives within existing entities, there are no existing financial ratios that reflect the expected outcomes. The ratios must therefore come from a feasibility study. The study typically consists of a number of projections,

such as baseline and stress-based scenarios. The analysis includes various cash flows (revenue and expenditure) as well as economic and financial rates of return of the project. Debt service (a flow measurement) coverage and debt (a stock measurement) coverage indicators are calculated and scores are given based on these indicators. The financial ratios from such a study can be used in a scorecard, but new projects generally have more uncertain cash flows than existing projects. One way to adjust for this is to use the financial ratios from a prudent stress scenario. Another way is to change the ranges required to score well. For example, a debt service coverage ratio of 4 might be scored as Risk Rating 1 for a normal company, but it may only score as Risk Rating 3 for a proposed project.

A weighted (in accordance with different levels of importance/ priorities) final score can be calculated.

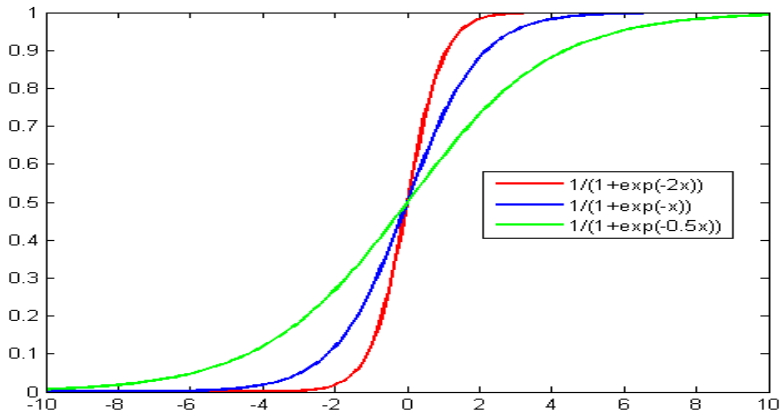
These scores can be used for estimating the probability of default. One of the simple models for converting a credit score to a probability of default is through a logistic distribution curve (Sigmoid curve, sometimes referred to as the 'S' curve) that plots credit score on the horizontal axis and PDs on the vertical axis. After estimating a score, a corresponding PD can be read from the curve.

The equation that represents this curve and the variety of curves that can be obtained are as follows:

$$PD \text{ of Score } X = \frac{1}{(1 + e^{-\lambda X})}$$

By changing the values of λ (shape parameter), different 'S' curves can be obtained, as seen in Figure 18. The vertical axis represents the 'probability of default'.

Figure 17: Building an S Curve



Having carried out the scoring for individual financial and business indicators, an overall average score can be obtained. Let us assume that the scores were between 0 (very poor) and 5 (excellent). A rescaled score (subtracting the obtained score from the average of 2.5) can be obtained. The formula can be applied to the rescaled score.

This can be seen in Table 24 with probability of defaults when λ = 1.5 and 2.

Table 24 : Estimating PDs Using the S Curve

Original Score	Rescaled Score (2.5 – score)	Probability of Default (λ = 1.5)	Probability of Default (λ =2.0)
0	2.5	98%	99%
0.5	2	95%	98%
1	1.5	90%	95%
1.5	1	82%	88%
2	0.5	68%	73%
2.5	0	50%	50%
3	-0.5	32%	27%
3.5	-1	18%	12%
4	-1.5	10%	5%
4.5	-2	5%	2%
5	-2.5	2%	1%

Another approach to estimating the PDs once the credit scores are estimated is to associate each risk rating with a credit rating agency grade, then read the PD for that grade.[9] For example, the risk ratings for SOEs may be chosen to be associated as below:

Table 25: Estimating PDs Using Credit Rating Agency Grades

Risk Rating	S&P Grade	Probability of Default
1	BBB	0.15%
2	BB	0.5%
3	B	3%
4	CCC	28%
5	D	100%

Some countries prefer the scorecard approach because it does not require historical default data. Credit scoring is considered to offer a flexible approach to credit risk analysis since it can be tailored to reflect the specific risk exposure and facilitate a standardised evaluation of credit risk among entities in the same industry. A disadvantage of scorecards is that it can be time consuming for experts to agree and justify the ranges to be set for each indicator, and to agree on the weighting of the individual scores to get the final score.

2. Statistical models

If historical default data is available, the weights and ranges can be set by using statistical analysis. The probability of default (PD), defined as a percentage measure of the likelihood over a specified period that a borrower will not be able to fulfil its scheduled repayment obligations, is the dependent variable in the regression to be statistically estimated, and the characteristics of the borrower or the beneficiary institution, such as its financial ratios, are independent variables.

This method allocates a credit rating score or a probability of default using various established/estimated variables and indicators. The most referred to models are the Altman 'Z' score (using discriminant analysis) models.

Altman in his original 'Z' Score Model, research paper (1968) looked at financial variables and ratios of 66 public manufacturing companies in the USA to determine score ranges to classify the companies in the following categories: in a safe zone, in a vulnerable position, or in a grey area where they were neither safe nor vulnerable.

Box 1. Altman Z Score Model

Altman Z Score Model

Altman's original model, represented by the discriminant function Z, is as follows:

Z = 1.2X1 + 1.4X2 + 3.3X3 + 0.6X4 + 0.99X5

Where:

X1 = Working Capital/Total Assets
X2 = Retained Earnings/Total Assets
X3 =Earnings before Interest and Taxes/ Total Assets
X4 =Market Value of Equity/Total Liabilities
X5 = Sales/Total Assets

Z less than 1.8 represents 'default region'
Z between 1.8 and 3 represents the grey area of 'neither safe nor vulnerable'
Z over 3 represents a 'no default region'

9 PD per grade are given in Table 26 here: https://www.spglobal.com/ratings/en/research/articles/210407-default-transition-and-recovery-2020-annual-global-corporate-default-and-rating-transition-study-11900573.

In addition to discriminant analysis like Altman's, there are other regression models employed to predict the default probabilities in various sectors. Logit and probit regression analysis are among these, where the multivariate techniques allow for estimating the probability that an event occurs or not, by predicting a binary dependent outcome from a set of independent variables. The response is equal to 0 if default occurs (with probability Pi) and to 1 if default does not occur (with probability 1 – Pi).

Logit analysis is characterised by prediction of the probability that an event either occurs or does not. The calculated probability is thus equal to either 1 or 0. The main difference of probit analysis is that it assumes normal distribution of random variables (independent variables in the model).

3. Financial scenario models

Financial models aim at estimating how certain scenarios impact the financial performance of the beneficiary's ability to meet its debt service obligations. Financial scenario or forecasting models look at various financial variables and indicators under the various assumptions used. The variables and ratios examined are similar to those used in the credit scoring model, except that in scenario models, forecasted ratios and indicators are examined. Indicators are examined under typical categories such as liquidity, solvency, leverage, profitability and efficiency. One advantage of financial scenario models is that the model exactly calculates whether there will be sufficient income to pay the debt in any given scenario, as well as the amount of loss in that scenario.

The basic forecasting analysis requires the corporation's income statement, balance sheet and cash flow statements. In addition, forecasts should also take into consideration the future changes in the economic, social, environmental and general governance environment.

Since it is necessary to forecast the future financial flows – both inflows and outlays – the concept of net present value with chosen discount rates plays a prominent role in the estimation of ratios and indicators. The discounted cash flow (DCF) method is a popular model in financial scenario analysis models. It is also important to forecast stocks, such as capital and assets, at various time points as they are also used in the analysis of ratios, estimating indicators, calculation of net worth etc. The estimated ratios and indicators when compared to benchmark values will imply whether the corporation is financially sound and has the capability of repaying the debt payments due.

Scenarios can be constructed using deterministic or stochastic processes. Scenario analysis based on deterministic processes usually uses a smaller number of discrete scenarios and often no probabilities are attached to the respective scenarios. Risk managers may define a base case (most likely scenario) and several risk scenarios defined by an adverse development in individual risk drivers, or a combination of a few risk drivers.

Scenario analysis can capture project and context-specific situations and can be employed to model particular risks. Financial scenario models can range from being very simple to very complex. For example, in a simple model for an electric utility there might be just three cash flows projected per year: gross income, operating costs and debt servicing cost.

Each cash flow can then be stressed according to the main factors driving the cash flow, e.g. tariff level, fuel costs and changes in debt payments due to FX and interest rates. For each scenario, the amount to be paid by the government in each year is approximately given by:

Payment = max {0, Debt Servicing x md + Operating Costs x mc - Gross Income x mi}

Where md, mc and mi are the multipliers for the given cash flow and scenario.

As an alternative to this simple model, organisations like electricity utilities typically have very detailed budget projection models. Rather than building a new model for scenario analysis, the government may present the scenarios and ask the company to make the calculations. It may ask, for example:

- 'What will the debt service coverage ratio be if tariffs remain flat, fuel prices rise 20 per cent, FX rates change 10 per cent and staff costs rise 5 per cent?'
- 'How much of a change in the FX rates can the company survive before it has to call on the guarantee?'
- 'Look at the worst case that has happened over the last 10 years. If that happens again, what would your business look like and how much would be required from the government?'

The scenarios can be based on previous experience, e.g. what was the worse cost over-run for a project like this, or the worst FX shock over the last 20 years? Alternatively, some governments have macroeconomic units creating scenarios for fiscal analysis and these scenarios may be borrowed to understand what would happen to the guarantees in those scenarios.

The answers from scenario analysis can be used in several ways:

- Given a range of possible scenarios, how much would the government need to pay?
- How bad does a scenario have to get before the government has to pay?
- Are there any management decisions we can make now to reduce the risk, e.g. by hedging commodity prices, funding more of the project in local currency, or delaying new projects?

Stochastic simulation models may be based on the same cash flow models used for scenario analysis. To use stochastic scenario generation, a probability distribution for the key risk drivers and their dependent relationships is estimated. A large number of scenarios can then be simulated (e.g. using Monte Carlo simulation). The outcome of scenario analysis can be an estimate of the frequency of default events. A PD and loss distribution may be estimated if stochastic modelling of risk drivers has been employed. However, the correct generation of scenarios can be complex and demanding in terms of resources, so simulation models are generally only worthwhile for making decisions on very large projects.

4. Structural models

Under structural models and their variations, default is expected to occur if the value of a firm's assets (usually book value of debt plus market value of equity) falls below its liabilities. The maximum amount the debt holder can receive is the agreed payments. However, the borrower will only repay the loan if the value of its assets exceeds the value of promised debt repayments. Thus, the payoff function for the debt holder resembles that of writing a 'put option' on the value of the borrower's assets, with an exercise price equal to the face value of the debt and a maturity equal to the life of the debt. If the value of the borrower's assets exceeds the value of promised debt repayments, the loan is repaid and the debt holder earns a small fixed return (analogous to the premium on a put option). If the borrower defaults, the debt holder may lose both interest and principal. At the extreme end, for the borrower with no remaining assets, debt holders may lose all interest and principal.

The pioneering model of Merton (1974)[10] asserts that the lender should adjust the required risk premium as the borrower's leverage and asset risk change. Theoretically, this enables the estimation of risk premiums and default probabilities. This infers that the borrower's market value of

assets and its volatility are key variables in the estimation of credit risk. However, it is worth pointing out that operationalising this concept has practical difficulties since the market value of a firm's assets and its volatility are not directly observable.

Among the commercial users of this modelling approach are Moody's KMV[11] model, which uses an option pricing approach to extract the implied market value of a firm's assets and the asset volatility. This methodology relies heavily on equity market information. The KMV model treats the value of equity in a firm (from a stockholder's perspective) as equivalent to holding a 'call option' on the assets of the firm. It uses the stock market value of the firm's shares and its volatility to estimate the 'implied' market value of the firm's assets and its volatility. From this, a likely distribution of possible asset values of the firm, relative to its current debt obligations, can be calculated. The expected default

10 Merton, R. C., 'On the Pricing of Corporate Debt: Risk Structure of Interest Rate', Journal of Finance, Vol 29, 1974.
11 The Keaholfer, McQuown and Vasicek (KMV) model was developed initially in 1974.

frequency (EDF) reflects the probability that the market value of the firm's assets will fall below the promised repayments on its short-term debt liabilities within one year. If the value of a firm's assets falls below its debt liabilities, then the firm becomes financially insolvent.

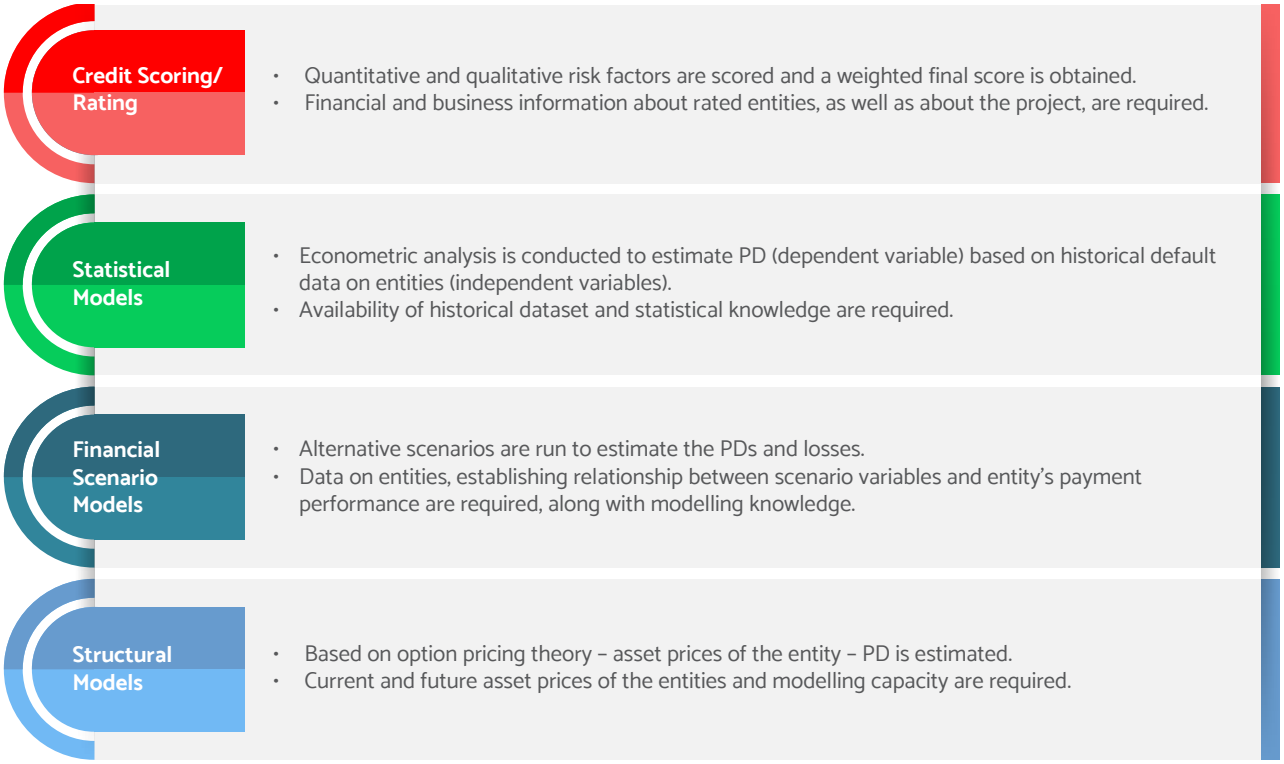
An advantage of applying option models is that they provide analytical solutions. The availability of analytical solutions, however, rests on somewhat restrictive model assumptions, that may not be applicable to specific guarantees. Furthermore, lack of suitable data may, in practice, impede the use of the option valuation approach.

There are many refinements to these models but in its simplest form the expected default frequency can be estimated from the annual standard deviation of the stock price, the current stock price, and the normal distribution.[12] For this approach to be used there should be a sufficient history of the stock price to estimate the standard deviation. This is rarely available to government-guaranteed entities.

Which model should be used?

The above summarised credit risk analysis methods can be used by risk managers in combination in different contexts and for different types of contingent liabilities. In general, a credit scoring methodology is recommended for countries at the early stages of designing their risk management practices, as they are less demanding and the methodology can be easily constructed by learning from the methodologies used by the credit rating agencies. To give a secondary view of the risk, and to estimate the potential payments, financial scenario modelling should be used, either using simple models or by giving scenarios to be run by the beneficiaries. For more complex guarantees such as new projects and PPP demand guarantees, financial modelling should be used. Irrespective of the credit risk analysis approach used, risk managers should critically assess the results obtained, and reflect on the assumptions made and modelling techniques employed.

Figure 18: Descriptions and Major Requirements for Credit Risk Analysis Methodologies



12 In Excel, EDF = NORMDIST(0, Price, Annual Standard Deviation, 1), i.e. the probability of the value falling below zero.

APPENDIX C. Credit Risk Assessment Scorecard Model

To assist member countries in developing their own credit risk assessment models, this appendix gives additional information on the process of building scorecards by presenting the indicators that can be used in the design of the model, how those indicators are selected and how weights are assigned. The appendix will also illustrate the design of a scorecard, how this scorecard is used to assign ratings to the indicators, and ultimately how an aggregate weighted risk rating for an entity is determined.

Background

In order to develop the model, thorough research has to be conducted to identify and select business and financial risk indicators that are relevant and important in conducting credit risk assessment on entities operating within the various sectors in the country.

The choice of indicators

The objective of a credit risk assessment is to determine the willingness and ability of an entity to service its guaranteed or on-lent loans. This assessment requires an examination of the entity's performance from a behavioural and financial point of view, by using qualitative (business) and quantitative (financial) risk indicators.

Qualitative risk indicators primarily speak to the willingness to service debt and are an indicator of whether the management has in place sufficient and effective systems that will help the company or entity to sustain good credit quality. Therefore, these indicators should be chosen carefully in order to incorporate the issues that are important in any sector and ultimately any entity into the credit risk assessment.

The use of financial ratios is important in determining the financial performance and thereby the credit quality of the entity. These indicators help to determine the entity's ability to service the debt that is guaranteed or on-lent. The choice of ratios when developing a credit risk assessment model should therefore assist in determining this ability to service the debt.

The following qualitative and financial risk indicators may be considered and a final selection of indicators to be used in the credit risk assessment of the entity may be made from the list.

Table 26: Credit Risk Assessment Indicators

FINANCIAL RISK INDICATORS	BUSINESS RISK INDICATORS
Profitability	Industry Prospects
Profits	Credit ratings
Revenue growth	Operating environment
Net interest revenue	Regulatory framework
EBITDA margin	Corporate Governance
Operating margin	Management quality
Net profit margin	Adherence to applicable legislation
Net interest margin	Market Position
Return on asset ratio	Diversification
Return on equity ratio	Size (capacity)
Debt Capacity	
Total assets	
Total liabilities	
Total equity	
Debt to equity ratio	
Debt to assets ratio	
Interest cover ratio	
Debt service cover ratio	
Net operating income/debt outstanding	
Efficiency	
Cost to income ratio	
Asset turnover	

Non-interest income to total income ratio	
Cash Flow Adequacy	
Funds from operations/debt ratio	
Capital adequacy	
Liquidity	
Cash ratio	
Quick ratio	
Current ratio	
Liquid assets to deposits ratio	
Loans to deposits ratio	
Asset Quality	
Loan impairment charge to gross loans (credit loss) ratio	
Non-performing loans to gross loans ratio	

The final selection of the different risk indicators should be based on their importance and relevance in assessing the entity's ability and willingness to service their debt obligations.

Below is a brief description of most of the indicators included in the table. The descriptions do not cover all the indicators but are rather an illustration of how they may be covered in the model.

- ## Business risk indicators

Assigning weights and ratings to business risk indicators is, by nature, very intuitive, given that there are no clear numbers to determine. It is therefore imperative to understand how each indicator impacts the entity either directly or indirectly, positively or negatively. For example, a utility may be heavily regulated and as such its ability to set prices, and determine when and by how much those prices may be increased, will be limited. Regulation might therefore be very important in such a sector, thus requiring a higher weighting. In a particular year, a utility might get a tariff increase that is significantly lower than what was requested. In that year, therefore, the rating may be extremely high. Given the impact of oil prices on some of the entities, a rapid increase in oil prices might be negative or positive – this would then influence the rating.

Industry prospects

Operating environment refers to the business environment within which the entity operates. The factors that should be considered when assessing operating environment include macroeconomic factors such as inflation, interest rates, fuel prices, economic growth, demand for the entity's product offering, competition within the sector and supply of raw material utilised by the entity. These factors should be assessed because they affect the business of the entity.

Regulatory framework is the foundation on which all the decisions that affect the sector are made (including setting of rates), as well as the supportiveness, predictability and consistency of the regulatory decisions. Regulatory support underpins the industry's ability to earn fair returns on invested capital and generate stable operating cash flows through timely cost recovery. Therefore, the main factors that should be considered when assessing this indicator are the ability of the entity to recover costs on a timely basis and earn returns over a period of time, i.e. during different market and economic conditions – which have a direct effect on the entity's ability to generate cash flow and service debt.

Corporate governance

Adherence to applicable legislation refers to the extent to which the entities adhere to the legislation that governs them. Over and above their compliance, the effect of legislative changes on the performance of the sector should also be considered when assessing this indicator.

Management quality refers to the extent to which management is able to take and implement decisions that enable the entity to meet its mandate and generate profits that enable it to operate without financial support from the government. Profitability and the achievement of the strategic objectives of the entity are the main factors that should be considered when assessing this indicator.

Market position

- Diversification refers to whether or not the entity has a wide variety of material operations, or whether it relies on just one input to produce its product offering or one recipient of its production. Diversification helps to mitigate the risks that economic cycles, material changes in production methods or commodity price movements will have on the cash flow and credit quality of the entity. The diversity of operations, especially when there are material operations in more than one area, and the number of different raw materials that the entity uses as a substitute for its main raw material should be considered when assessing this indicator. Another form of important diversification is that of customer profiles.
-
- Size (capacity) refers to the population, size and breadth of the territory that the entity services and whether or not its capacity allows it to expand and take advantage of new markets. The availability of new markets that can be taken advantage of, as well as the availability of spare capacity within the entity, should be considered when assessing this indicator.

Financial risk indicators

Financial risk assessment should encompass indicators related to profitability, debt capacity, operational efficiency, cash flow adequacy and liquidity. The measures used in this regard are explained below.

Profitability

- **Operating margin** is a ratio used to measure the operating efficiency of an entity (i.e. whether the entity manages its costs well enough to be able to turn its revenue into profits). The ratio is calculated as operating profit of the entity (i.e. before fair value gains or losses) as a percentage of the entity's total revenue.
- **Net profit margin** is a ratio used to measure the profitability of an entity. It is a percentage of revenue after all operating expenses, interest expenses and tax have been deducted from total revenue. The ratio is calculated as the profit of the entity for the year as a percentage of the total revenue of the entity.
- **Revenue growth** is used to measure the year-on-year growth of the entity's revenue. The ratio is calculated as the annual percentage growth in the entity's revenue.
- **Return on assets** is a financial ratio that shows the percentage of profit a company earns in relation to its total assets. The ratio is calculated as the bank's headline earnings divided by its total assets.
- **Return on equity** is a measure of profitability that calculates how many dollars of profit a company generates with each dollar of shareholders' equity. The ratio is calculated as the bank's net profit as a percentage of its total equity.
- **Net interest margin** is a measure of the difference between the interest income generated by a bank and the amount of interest paid out to its lenders (for example, deposits), relative to the amount of its interest-earning assets. The ratio is calculated as the bank's net interest income as a percentage of its interest-earning assets.

Debt capacity

- **Debt to assets ratio** measures the extent of the entity's leverage. The indicator is calculated as the entity's total liabilities as a percentage of its total assets.
- **Debt to equity ratio** measures the relative proportion of the entity's total debt to shareholders' equity used to finance the entity's total assets. The indicator is calculated as total debt divided by total equity.
- **Interest cover ratio** measures the entity's ability to settle its interest costs on its outstanding debt. The ratio is calculated as the entity's profit before depreciation, amortisation, tax and interest (i.e. both interest income and expense) divided by its net interest expense.
- **Debt service cover ratio** measures the entity's ability to settle its interest and principal costs on its outstanding debt. The ratio is calculated as the entity's profit before depreciation, amortisation, tax and interest, divided by the total debt service payment required.
- **Net operating income/debt outstanding** is the maximum interest rate that the entity could pay. The ratio is calculated as the entity's profit before depreciation, amortisation, tax and interest, divided by the balance of the debt.

Operational efficiency

- **Cost to income ratio,** like operating margin, is a ratio used to measure the operating efficiency of an entity. The ratio is calculated as the total operating costs of the entity as a percentage of its total operating income.

- **Asset turnover** is an efficiency measure based on the revenues relative to the assets.

Cash flow adequacy

- **Funds from operations to debt ratio** measures whether the entity's cash inflows from its operations are sufficient to meet its financial obligations. The ratio is calculated as the entity's net cash inflows from operations divided by its total liabilities.
- **Non-interest income to total income** is a financial ratio that shows the percentage of the bank's non-interest income in relation to its total income. The ratio is calculated as the bank's non-interest income divided by its total income.

Liquidity

- **Cash ratio** measures whether the entity's cash and cash equivalents are sufficient to settle its short-term liabilities (i.e. maturing in 12 months or less). The ratio is calculated as the total cash and cash equivalents of the entity divided by its current liabilities.
- **Quick ratio** measures whether the entity's total current assets less its inventory are sufficient to settle its short-term liabilities. The ratio is calculated as the entity's total current assets minus inventory, divided by its total current liabilities.
- **Current ratios** measures whether the entity's total current assets are sufficient to settle its short-term liabilities. The ratio is calculated as the total current assets of the entity divided by its total current liabilities.

These indicators are not exhaustive but rather are indicative, and the choice of the indicators needs to be clearly thought through and explained in the credit risk model document.

Assignment of ratings to indicators

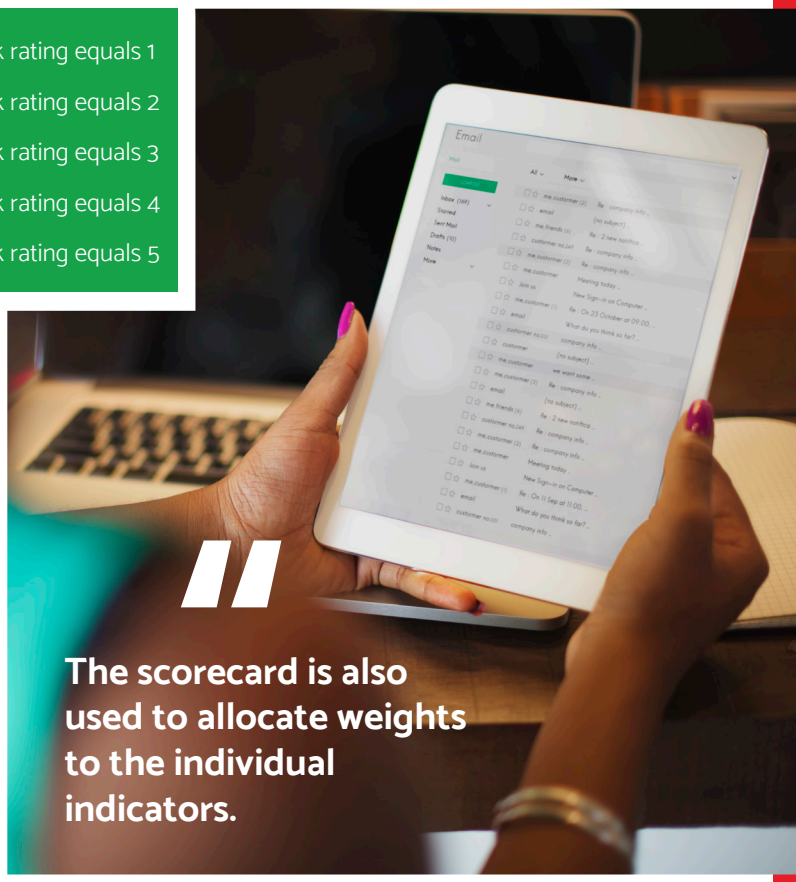
The risk ratings are driven by the extent of the exposure as well as the likelihood of the risk materialising as shown by the indicator. The risk ratings are arranged in such a way that a rating of 1 indicates a very low risk while a rating of 5 indicates a very high risk. The assignment of risk ratings to business risk indicators is subjective and therefore should be based on the analyst's assessment of the indicator, while the assignment of risk ratings to financial risk indicators should be in accordance with the understanding of the indicator and what the indicator outcomes illustrate as far as the financial performance and credit quality of the entity is concerned. For example, a cost to income ratio of 50 per cent is generally very good because it means that an entity is efficient in generating revenue and therefore deserves a rating of 1 or 2. Higher cost to income ratios imply a lower ability to service debt. Ultimately a cost to income ratio of 1 implies that there is no net income to service debt and the entity would be given a risk rating of 5. This could be formalised into defining ranges for the cost to income ratio corresponding to each risk rating, for example:[13]

Cost to income less than 50%	Risk rating equals 1
Cost to income between 50% and 65%	Risk rating equals 2
Cost to income between 65% and 80%	Risk rating equals 3
Cost to income between 80% and 95%	Risk rating equals 4
Cost to income greater than 95%	Risk rating equals 5

Scorecard application

The ratings assigned to the indicators are captured on the scorecard. The scorecard is also used to allocate weights to the individual indicators. The assignment of weights is based on the power of the indicator to illustrate the credit quality of the entity. Once weights are assigned to the indicators, they can be reviewed at least annually or whenever required, depending on the changes in the environment.

After the assignment of the weights is captured on the scorecard, the ratings assigned to the indicators based on the outcome of the financial indicators and the assessment of the qualitative indicators are also captured on the scorecard. Thereafter, the ratings are weighted (ratings multiplied by the weights) and an aggregate/weighted rating assigned to the entity. This would constitute the final outcome of the credit risk assessment.



13 This example is given to illustrate the structure of linking ranges to risk ratings. The numbers are illustrative only and not based on analysis.

APPENDIX D. Probability of Default and Level of Impact Matrix – Heatmap

This section of the Guidelines provides users with a basic heatmap that can be used as a visual illustration of the likelihood of credit events and their likely impact from each of the entities within the guarantee and on-lent loan portfolios. Heatmaps are helpful in making reporting easier, especially from a government point of view when reporting to non-technical readers such as politicians.

Background

When reporting the results of the credit risk assessment on entities that have been granted guarantees or on-lent loans, it is valuable to also provide a view of the risks in the portfolio. While this may be achieved through a weighted portfolio risk rating, it is extremely helpful to provide a visual illustration of the outcomes of the credit risk assessment for each of the entities within the portfolio. A credit risk assessment heatmap is a very useful tool in providing this visual illustration of the risks that a government faces from its guarantee and on-lent loan portfolio. The heatmap may also be used to present the various entities applying for guarantees or on-lent loans for the first time.

Using the heatmap

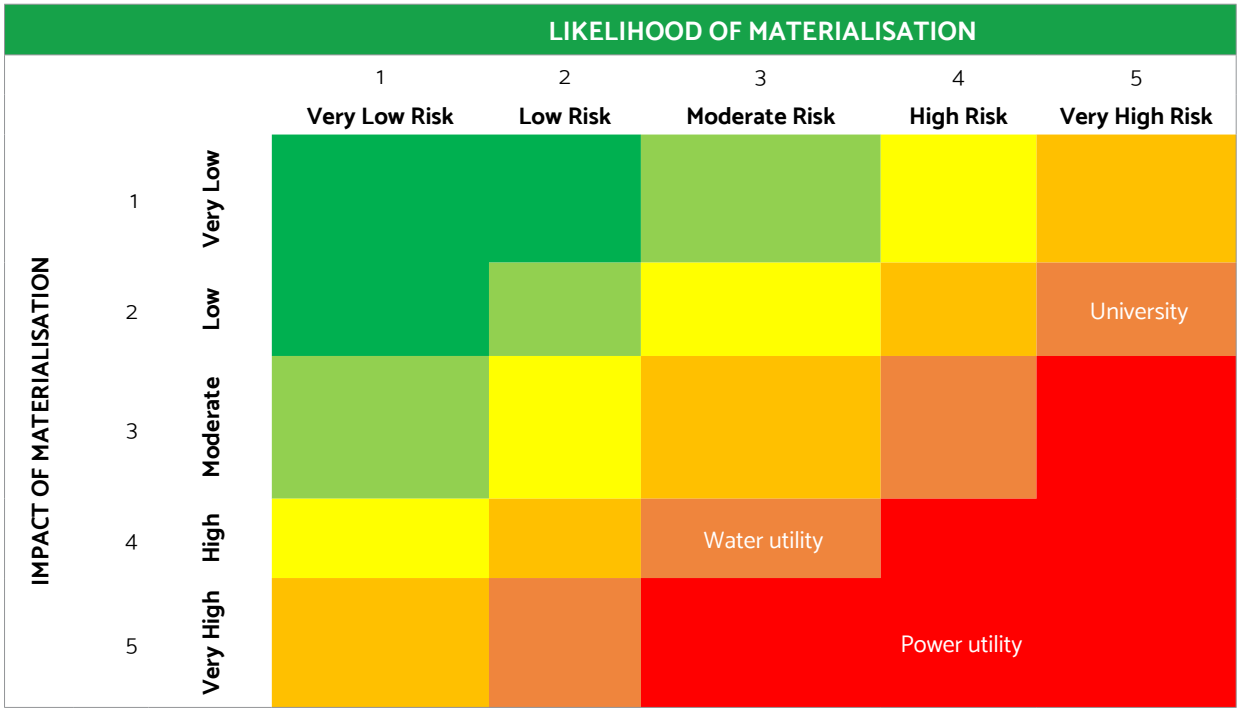
The population of the heatmap will be based on the results of the credit risk assessment. As recommended in the credit risk assessment model, the ratings to be assigned will be on a scale of 1 to 5, with 1 indicating very low risk and 5 indicating very high risk. These scales will speak to the probability of a credit event, as well as to the likely impact of that credit event.

The X-axis on the heatmap represents the likelihood of the materialisation of a credit event, with the Y-axis representing the likely impact of that credit event, i.e. the amount of loss given a default. Once the credit risk assessment is conducted and a weighted risk rating is determined per entity, the entity will be captured on the map based on its rating. Given that generally with government there is no recovery from entities for payments made by the government to avoid default, the likely impact may be based on the actual exposure at the time of the credit risk assessment. The impact may be based on the size of that exposure relative to the size of the portfolio or the size of the annual budget.

The heatmap can be incorporated in a consolidated report on the guarantee and on-lent loan portfolios.

Below is an illustration of a heatmap.

Figure 19: Guarantee and On-lent Loans Credit Risk Assessment Heatmap



1. Green: indicates the lowest level of risk of materialisation and the lowest impact on the fiscal framework.
2. Light green: the risk of materialisation increases slightly but it is still at low levels with low impact.
3. Yellow: the risk of materialisation is moderate with impact also moderate although still acceptable.
4. Orange: the risk of materialisation is high and impact also high.
5. Dark orange: the risk of materialisation very high and impact very high.
6. Red: the risk of materialisation is probable or imminent with impact on the fiscal framework extremely high.

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