Workshop on

Debt Sustainability for Central and West Asia

18-21 November 2024

Urumqi, China

Debt Management Strategy

M Coşkun Cangöz

Agenda

- An Overview
- Cost and Risk Analysis
- Concluding thoughts

An Overview

What is debt management?

Public debt management is the **process** of establishing and executing a strategy for managing the government's debt in order to raise required amount of funding at the lowest possible cost over the medium to long run, consistent with a prudent degree of risk.

It should also meet any other public debt management goals the government may have set, such as developing and maintaining an efficient market for government securities.

(Revised PDM Guidelines, 2014)

From objectives to implementation

Objectives Long-term

- Ensure timely funding
- Minimize cost considering risk
- Support market development
- Rarely revised

Strategy Medium-term

- Analysis of alternative borrowing strategies
- Updated annually

Borrowing Plan: Short-term

- Tactical decisions
- Domestic auction calendars
- FX funding plans
- Frequent updates

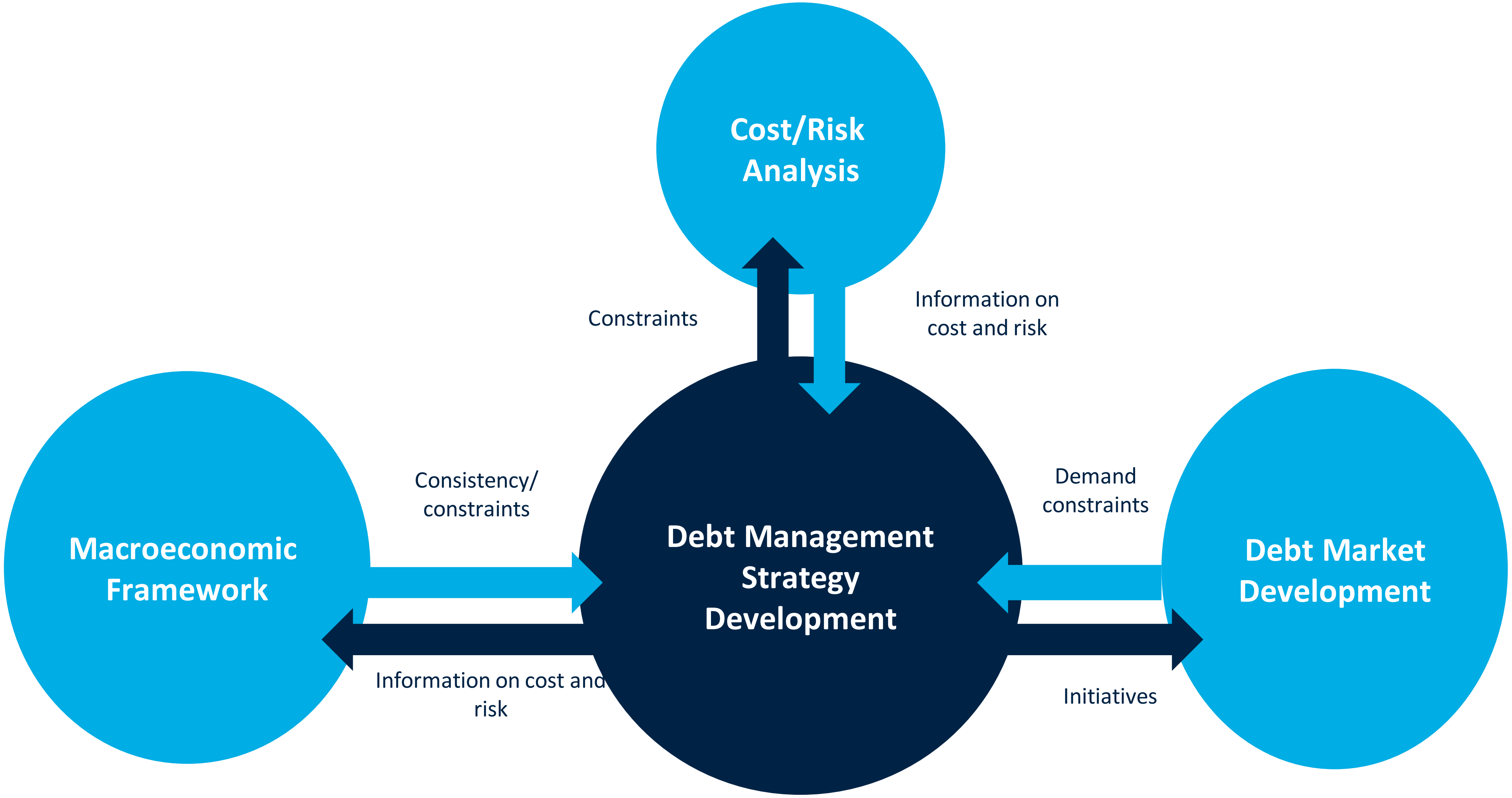
The strategy reflects the desired financial characteristics of a debt portfolio

- Share of domestic versus external
- Currency mix of external debt
- Share of fixed versus floating interest rate debt
- Maturity profile
- Share of nominal versus inflation-indexed (or another index)

Debt management strategy in eight process

1. Objectives and scope of the debt management strategy
2. Current debt strategy and cost and risk of existing debt
3. Potential sources of finance
4. Macro and market environment
5. Review key structural factors and risks
6. Analysis of alternative debt management strategies
7. Review of fiscal, budgetary, and market constraints
8. Propose and approve DMS

Debt management strategy: an iterative process



Different public policies have different objectives and tools

Debt Management

To minimize long-term debt servicing costs, subject to a prudent level of risk

Composition of the debt portfolio

Contingent Liabilities

Fiscal Policy

To achieve the least distorting budgetary policy to improve resource allocation and achieve distributive objectives, subject to prudent and sustainable debt levels

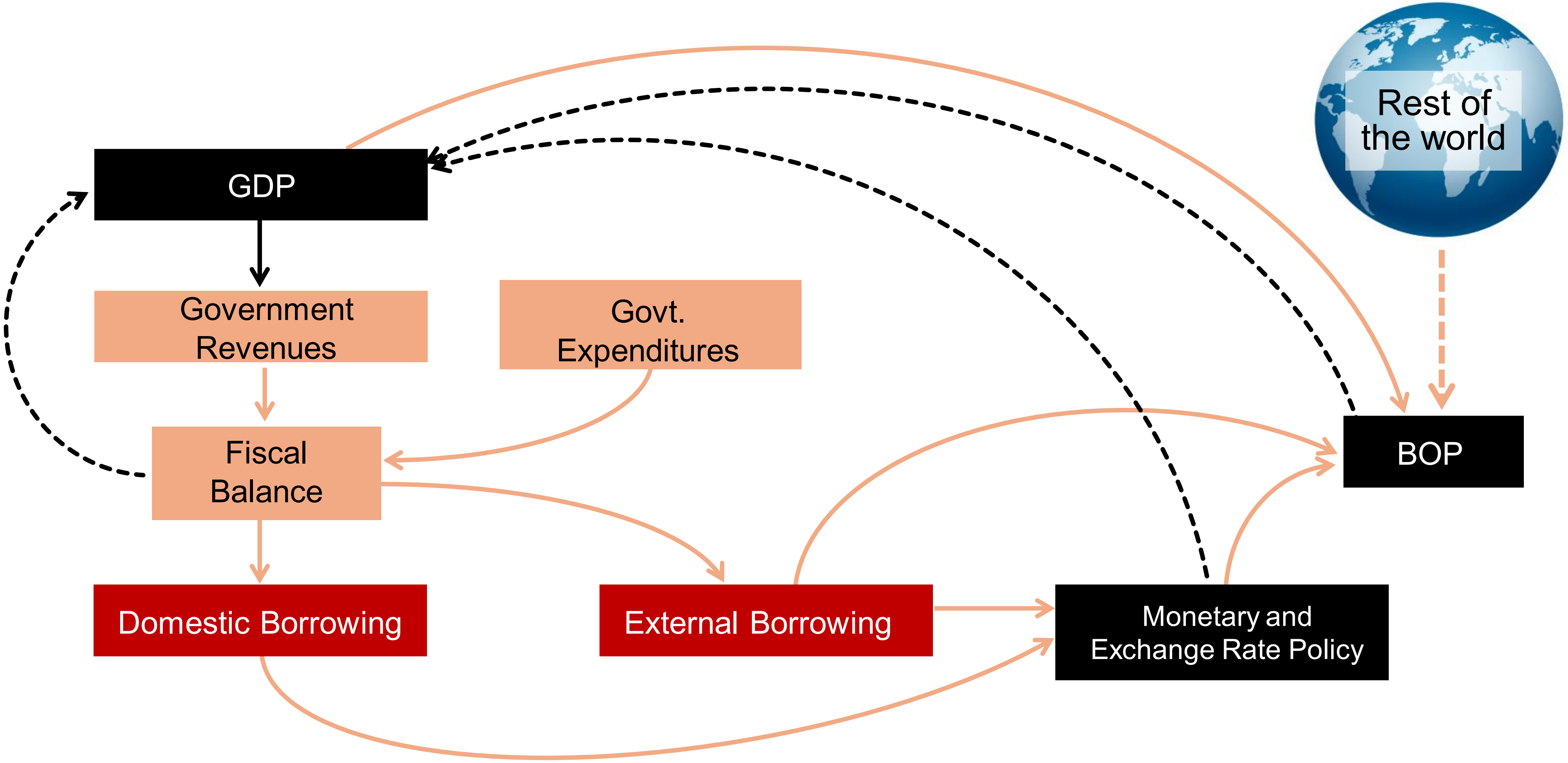
Composition of spending and taxation. Levels of deficits and debt

Monetary Policy

To achieve price stability

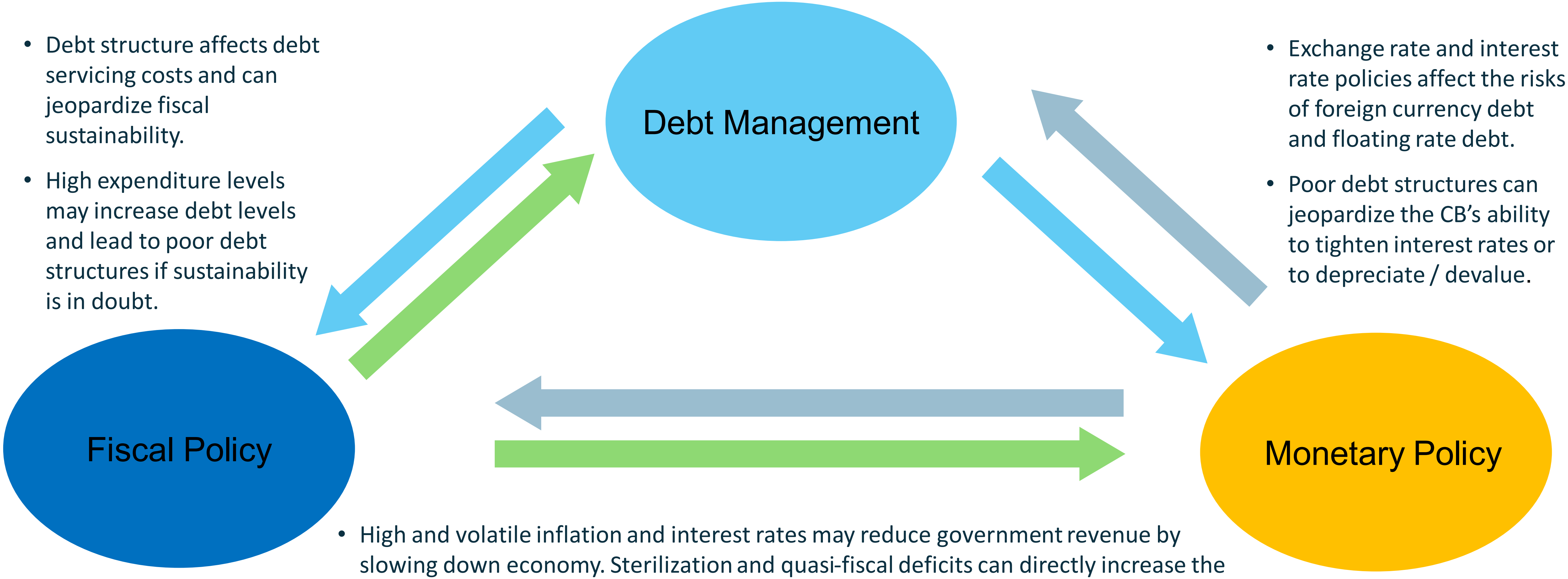
Interest rates, exchange rate or money aggregates

Policy separation does not mean policy independence



…and the debt manager should be aware of the interdependencies

- Debt structure affects debt servicing costs and can jeopardize fiscal sustainability.
- High expenditure levels may increase debt levels and lead to poor debt structures if sustainability is in doubt.



- Exchange rate and interest rate policies affect the risks of foreign currency debt and floating rate debt.
- Poor debt structures can jeopardize the CB’s ability to tighten interest rates or to depreciate / devalue.

- High and volatile inflation and interest rates may reduce government revenue by slowing down economy. Sterilization and quasi-fiscal deficits can directly increase the level of debt.
- Poor fiscal management and high levels of debt can increase inflationary expectations and cause interest rates to rise, and/or the currency to depreciate.

Gross funding requirements: focus of attention

Unexpected increase in funding needs requires the debt manager to source financing at short notice, but…

- Some markets may be closed, or official sector lending may be slow or not forthcoming
- Absorptive capacity of the domestic market may be limited
- When funding under pressure, may not be able to obtain the desired terms

Suggests benefit of

- diversifying funding sources
- domestic market development
- minimizing refinancing risk e.g pre-financing
- weather related hedge and commodity price hedge

Revenues and expenditures

		UTP m
+	Revenue	16 000
-	Primary expenditure	21 000
=	Primary balance	- 5 000
-	Interest payments	- 3 000
=	Fiscal balance	- 8 000
-	Principal payments	- 6 000
=	Balance	- 14 000
=	Gross borrowing requirement	14 000

- The gross borrowing (or financing) requirement is the amount of financing that needs to be raised through the issuance of securities or disbursements of loans, the composition of which is defined by the financing strategy
- interest and principal payments both on existing debt and new debt need to be considered
- Debt service payment projections depend on the specific borrowing mix set by the strategy.

Baseline funding requirements and fiscal risk scenarios

- Projection of funding needs should be based on projections of primary balance and economic growth produced by the fiscal authority
  - Output from Fiscal Sustainability Analysis
  - Parameters in Medium-Term Fiscal Framework (MTFF)
- Risk scenarios for government revenues and primary balance, as well as other deficit creating flows
  - Risks to growth projections
  - Fiscal rigidity and fiscal space
  - Risks of contingent liabilities

Non-budgetary items and cash buffer

- Non-budgetary assets may be available as a source of financing, such as deposits that can be drawn down, other financial assets that can be converted to cash, or privatization and other asset-sale proceeds. These assets would reduce the gross borrowing requirement.
- Non-budgetary expenditures, such as contingent liabilities, the clearance of expenditure arrears, the clearance of outstanding overdrafts or similar facilities, or the acquisition of assets would increase the gross borrowing requirement.
- A cash buffer may be available for debt management purposes, which can either be a factor reducing or increasing the gross borrowing requirement.

		UTP m
+	Revenue	16 000
-	Primary expenditure	21 000
=	Primary balance	- 5 000
-	Interest payments	- 3 000
=	Fiscal balance	- 8 000
-	Principal payments	- 6 000
=	Balance before other factors	- 14 000
+	Cash inflows (reduce borrowing needs)	1 000
-	Cash outflows (increase borrowing needs)	- 2 000
=	Balance	- 15 000
=	Gross borrowing requirement	15 000

…but if debt is unsustainable no strategy solves the problem

However, if fiscal policy is on an unsustainable track, fiscal adjustment is required

- Debt management is not a solution to poor fiscal management
- Short-term fiscal expediency to reduce cost can lead to unsustainable debt outcome

Importance of incorporating the cost of market development in the budget

- Cost-risk analysis will assist in quantifying the cost of market development

Also, consideration of insurance premium and risk mitigation plans, for example:

- Weather-related hedge
- Investments in irrigation to mitigate the effect of drought

Cost and Risk Analysis

Cost and risk are embedded in the debt management objectives

- Thailand: “Oversee public debt management operations under acceptable funding cost and risk framework and Drive Thai bond market towards the hub of Asia” วิสัยทัศน์ พันธกิจ และยุทธศาสตร์ - PDMO - The Public Debt Management Office

- Georgia: “Covering the government financial needs, while minimizing medium and long-term costs, consistent with a prudent degree of risk” სახელმწიფო ვალის მართვის სტრატეგია 2017-2020 წლებისთვის (mof.ge)

- Kyrgyz Republic: “…meeting the needs of the Government of the Kyrgyz Republic in financing by attracting borrowed funds at the lowest possible costs and reasonable risks, the development of the government securities market and maintaining the stability of the public debt of the Kyrgyz Republic.” "Public Debt Management Strategy of the Kyrgyz Republic for 2020-2023" — Ministry news — Ministry of Finance of the Kyrgyz Republic (minfin.gov.kg)

…thus, a clear definition is needed for the strategy

"Cost" – interest payments on debt? What about amortization?

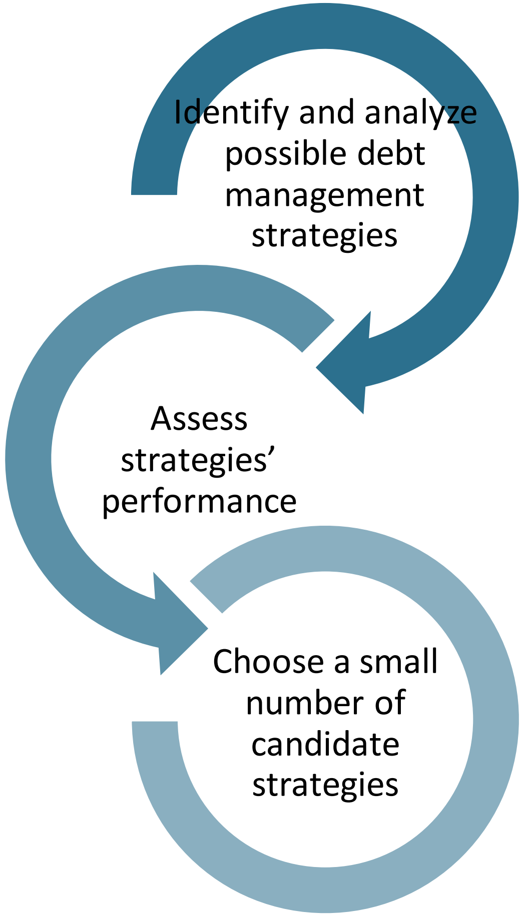
"Risk" – the negative budget effects that could arise from an undesirable outcome

For a government debt manager an undesirable outcome is an increase in the cost of debt servicing; the impact is more severe if this occurs when revenue is low

To assess risk arising from government debt, we need an understanding of the government assets and revenues

Formulating strategies

Objective: choose a small set of strategies



- Identify a set of relevant strategies, and assess these under
  - constraints
  - future scenarios for the primary balance and market rates
  - relevant risk/stress scenarios
- Assess the performance—either qualitatively or quantitatively—of a range of alternative strategies, from a **cost and risk perspective**

In practice, the DM only needs to analyze in detail a small set of strategies

Metrics: local currency on medium/long term

- **Cost:**
- Annual interest payments + the impact of changes in exchange rates and inflation

- **Risk:**
- Changes in future cost and the impact on the budget

Debt management objectives normally state the consideration of debt servicing costs over a long horizon

- measures limited to debt service over the next budget cycle are inappropriate

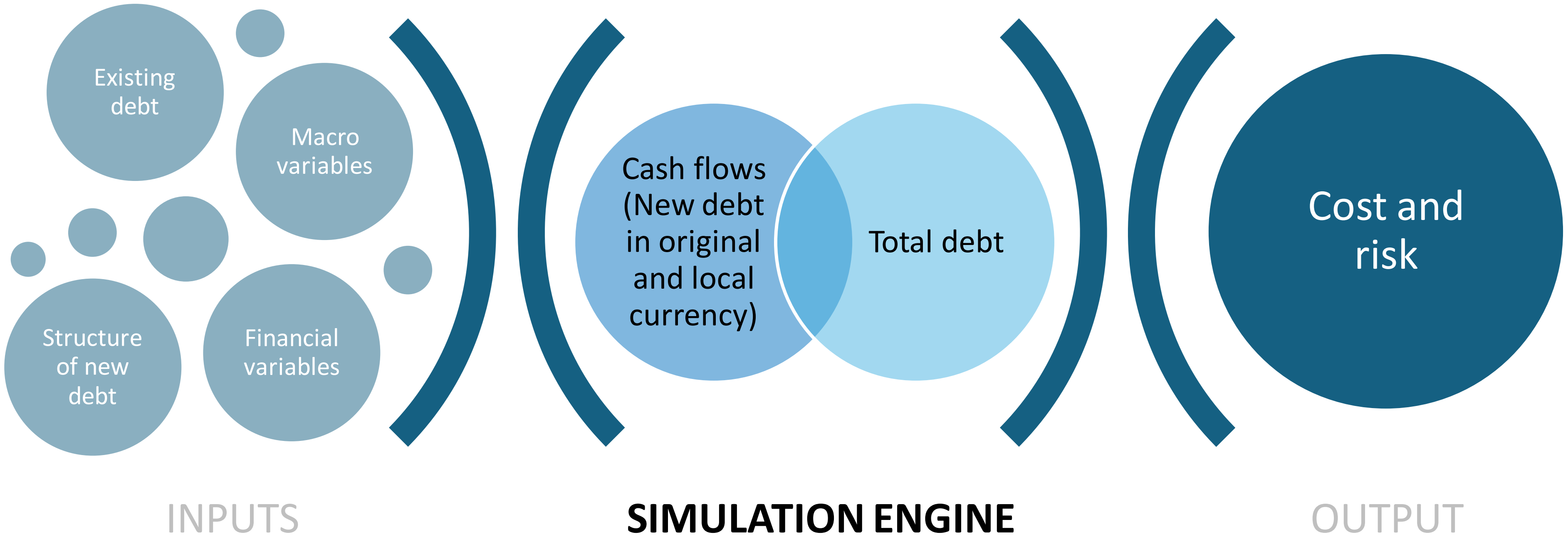
Debt management objectives usually focus on the economic cost

- measures that focus exclusively on prevailing accounting/budgetary practices may also be inadequate.

There are different cost measures

- Interest payments in nominal terms
- Interest payments adjusted for unrealized capital gains/losses
- Interest payments in real terms
- Interest payments as a percentage of GDP
- Interest payments as a percentage of revenues
- Debt to GDP
- *Different cost measures provide different information on cost - do not rely on one cost measure*

Scenario analysis models



New borrowing calculations are performed under different scenarios / shocks.

Macroeconomic and market data

Variable	What it is used for
Revenue and primary expenditure	Determining the amount of new borrowing that is required in addition to the borrowing needed to refinance existing debt that is maturing
Other factors that influence the borrowing need, such as the proceeds from the sale of assets or the realization of contingent liabilities	Increasing or decreasing the borrowing need
Nominal GDP	Analyzing cost and risk
International reserves	Analyzing the risk of external debt
Projections of interest rates under the baseline and shock scenarios	Determining the interest payments associated with new debt (and of existing variable-rate debt)
Projections of exchange rates under the baseline and shock scenarios	Determining the cost of debt service of external or foreign-currency denominated debt and the value of foreign-currency denominated debt converted into local-currency terms

The projections of these inputs under the baseline should be realistic. Otherwise, there is the risk that the analysis may be skewed towards one financing strategy in particular and that the chosen financing strategy may not be implementable.

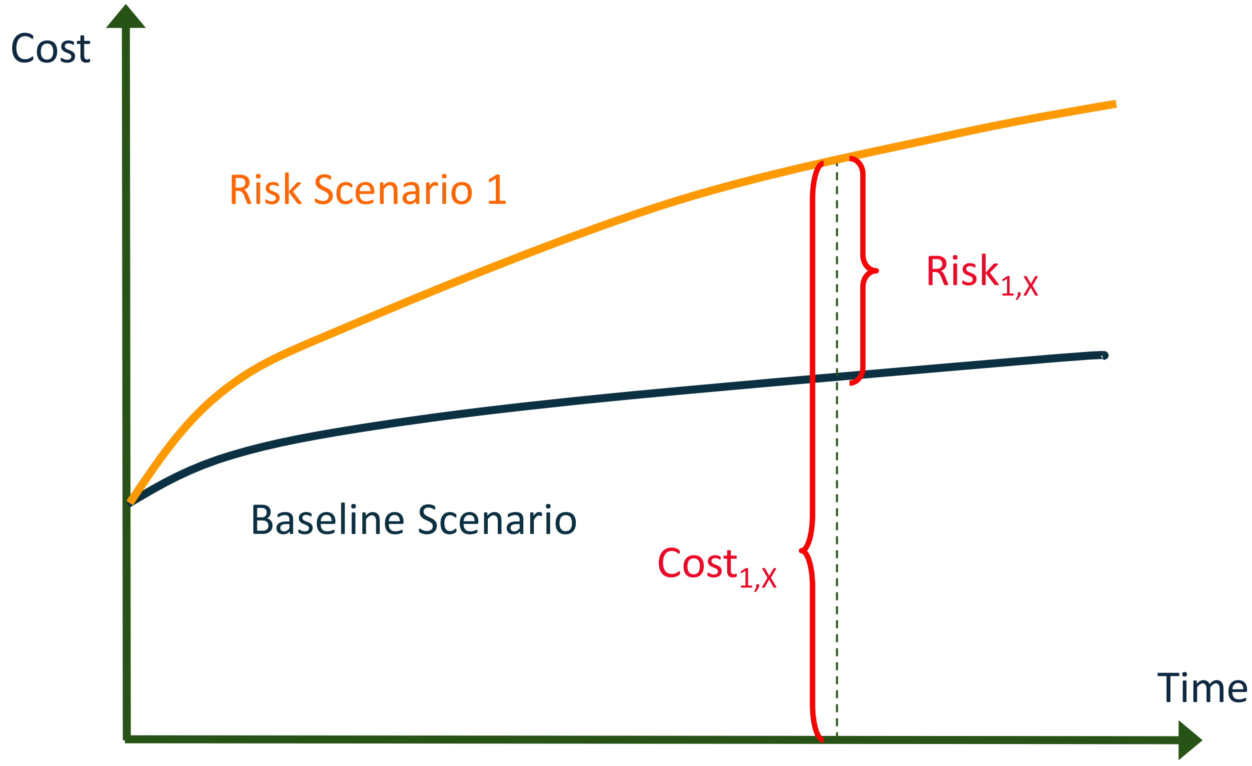
Baseline interest rates

- The cash flows and, consequently, the cost and risk of a financing strategy depend on the future path of interest rates and exchange rates.
- DMS analysis requires projections of the interest rates at which new debt will be issued and, in the case of variable-rate debt, the interest rates at which both existing and new debt will be re-fixed.
- A **projection** is required for each debt instrument for each year.
- These projections can be prepared using methodologies, assumptions, and data sources that may be appropriate for each instrument.

Baseline exchange rates

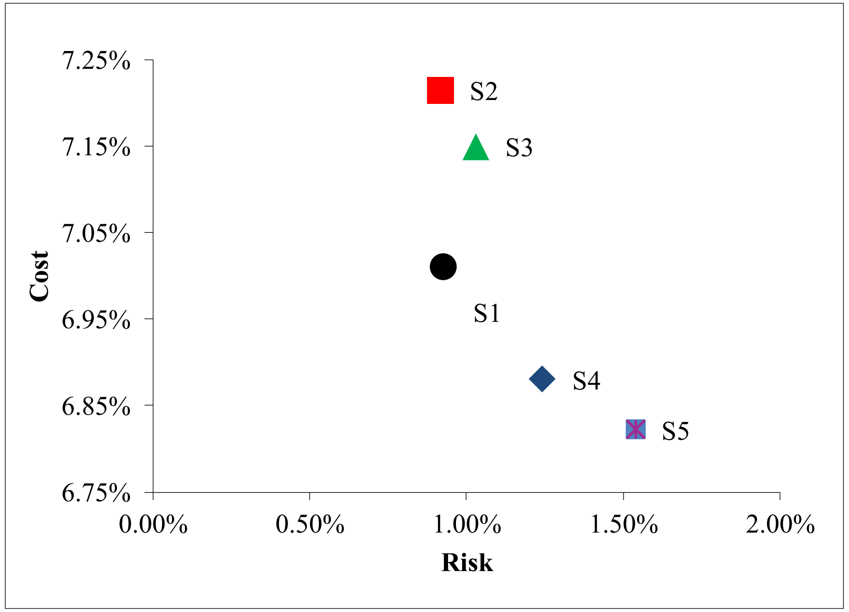
- The debt management strategy requires projections of the exchange rate of the local currency relative to each foreign currency by year.
- Exchange rate projections may be provided as an external input.
  - Medium-term fiscal forecasts provide an assumption about the path of the exchange rate of the local currency against the US dollar and other currencies.
  - The central bank may be a source of forecasts of the exchange rate.
- Exchange rate projections can also be generated by using some models such as the Purchasing-power Parity (PPP) approach where the change in the exchange rate is commensurate with the difference between the domestic inflation rate and the inflation rate in the other country.

Application of scenarios and producing cost and risk parameters

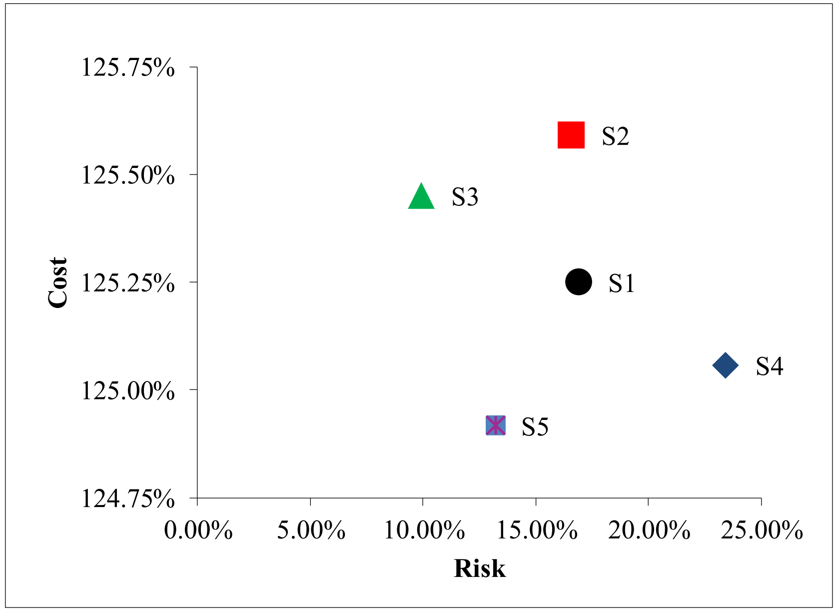


… to compare different strategies

Interest to GDP, 2025



Debt to GDP, 2025



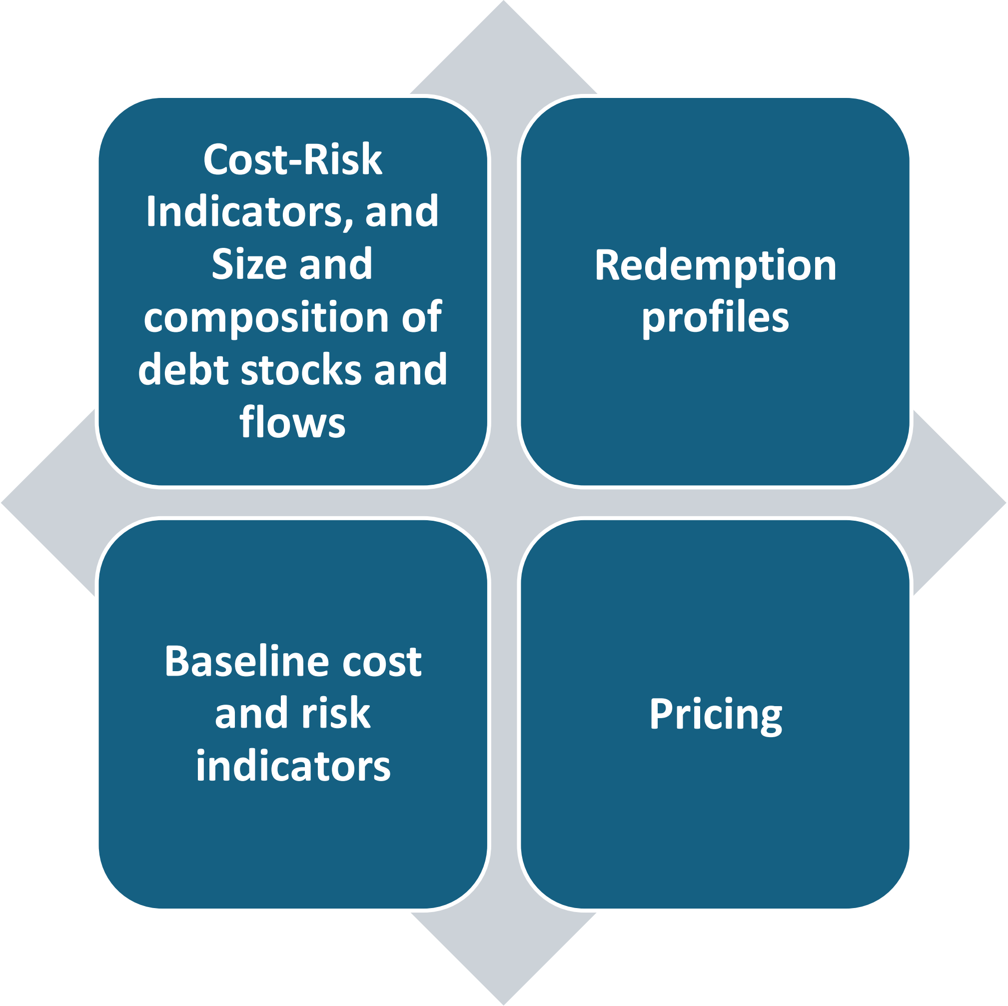
Model outputs

Outputs of the model enable debt managers to compare the cost-risk characteristics of debt portfolios and debt cash flows of different financing strategies.

For each strategy, the tool produces the following for all years in the strategy period:

- gross financing,
- net financing,
- debt stock levels,
- principal payments,
- interest payments,
- debt service payments,

and cost-risk indicators at the end of the strategy period.



Typical cost and risk indicators

Risk Indicators		2020	As at end 2025			
		Current	S1	S2	S3	S4
Nominal debt as percent of GDP		66.1	64.3	64.7	63.0	64.9
Present value debt as percent of GDP		53.5	53.4	53.9	49.1	54.0
Interest payment as percent of GDP		3.2	4.6	4.8	3.4	3.9
Implied interest rate (percent)		4.8	7.5	8.2	5.6	6.7
Refinancing risk	Debt maturing in 1yr (percent of total)	19.8	40.0	28.6	19.4	18.7
	Debt maturing in 1yr (% of GDP)	18.9	25.7	18.5	12.3	12.2
	ATM External Portfolio (years)	11.4	11.5	11.5	12.0	10.3
	ATM Domestic Portfolio (years)	1.8	0.8	1.29	1.34	1.3
	ATM Total Portfolio (years)	9.3	6.9	7.1	9.0	7.9
Interest rate risk	ATR (years)	9.3	6.9	7.1	9.0	7.9
	Debt refixing in 1yr (percent of total)	19.8	40.0	28.6	19.4	18.7
	Fixed rate debt incl T-bills (percent of total)	100.0	100.0	100.0	100.0	100.0
	T-bills (percent of total)	14.0	33.5	19.4	11.8	11.8
FX risk	FX debt as % of total	69.0	56.9	56.5	71.7	73.4
	ST FX debt as % of reserves	19.7	25.5	25.5	25.5	25.5

Qualitative assessment

- **What is meant by a qualitative assessment?**
  - *"The detailed descriptions of situations, events, people, interactions, and observed behaviors; use of direct quotes from people about their experiences, attitudes, beliefs, and thoughts; and analysis of excepts or entire passages from documents, journals, or case histories…" (Paton, 1980)*

- **Qualitative** assessment achievable and valuable:
  - Qualify key sources of volatility or provide a buffer to the impact of identified risks
  - Consider the potential costs of achieving that debt composition and test alternatives
  - Can help specify the preferred strategic direction and specific risk indicators.

Qualitative & Quantitative Assessment in DM Strategy

- In selecting the appropriate strategy, the results of the quantitative analysis should **not** be the sole determinant. Essential qualitative factors, which are not captured in the AT, would need to be considered (for example, focus on domestic market development)

- The **model** should be used to **complement** qualitative analysis, **inform** decision-makers on the **cost-risk trade-offs** between viable financing strategies, and provide the cost-risk characteristics of the preferred strategy

Latvia uses specific parameters to manage the central government debt portfolio

- Outstanding amount of government securities sold at the end of 5-year period is not less than the outstanding amount at the beginning of the 5-year period

- Maturity profile (%) of central government debt
  - up to 1 year 25%
  - up to 3 years 50%

- Minimum share of fixed interest rate
  - 60%

- Macaulay Duration (years)
  - from 5.0 to 9.0

- Net debt: currency composition
  - 100% EUR
    - total allowed deviation +/- 5%
    - allowed deviation for a single currency +/- 5%

PVNLVS_2021_eng_FINAL.pdf (kase.gov.lv)

Bhutan debt management strategy has fewer goals

- Maximize concessional borrowings from multilateral and bilateral creditors to minimize the government's financing cost and risks;

- Meet some portion of the government's total financing requirement through the issuance of T-Bills and varying maturity bonds to facilitate the development of domestic debt market in the country; and

- Maintain the external debt burden indicators within the thresholds prescribed by the Public Debt Policy 2016.

…accompanied with clear and concrete actions

Targets for the period of the debt management strategy

60%-80% of the gross financing need from the concessional windows.

Maintain fixed-rate debt above 95% of the total debt

20%-40% of GFN T-bonds
Adopt auctions to place T-bonds
Retail debt to broaden the investor base

Reduce issuance of T-Bills for deficit financing; use for revenue shortfall

Medium-Term-Debt-Management-Strategy-March-2021.pdf (mof.gov.bt)

A risk model is useful

Allows analysis of many scenarios and strategies - monitor and review strategies to alter risk

Maintain integrity across different scenarios/strategies

Gives deeper insight into the process

Basic needs to be in order: access to high quality and timely data

… but a debt strategy can be developed without it

Some countries have designed and implemented strategies without a model in place

- Indonesia, Peru, Brazil, Colombia

In the above cases, the strategy was initially formulated as broad guidelines based on “intuition”

- More domestic debt
- Longer maturity etc.

Using debt portfolio modeling may not be trivial

Pre-requisites for modeling:

- High quality and timely data on the outstanding debt portfolio
- Dedicated staff with good knowledge of spreadsheets and finance

Issues for modeling

- Selection of market variable scenarios, or period of history for parameterizing a simulation, may be difficult when the economy has been through periods of instability
- The process of developing a model represents a considerable investment

Typical experiences from working with risk models

Not the main basis for decision-making, but rather a supplement to experience, sound judgment, etc. – provide additional information for making better choices

Increase knowledge of the cost/risk trade-offs

Requires dedicated resources, time-consuming

Clarifies framework for decision-making

Concluding Thoughts

Concluding thoughts

- A debt management strategy targets a desired composition of the public debt portfolio and is typically expressed in terms of targets for selected risk indicators
- It differs from Debt Sustainability Analysis in that focuses on the quality rather than the size of the portfolio
- Debt management strategy should be consistent with other macroeconomic policies
- A clear definition of cost and risk is critical for strategy development; the chosen measures will be country-specific
    - Usually measured in local currency over a medium to long-term time horizon
    - Often more than one measure of cost and risk is needed
- A scenario analysis helps “imagine” the future and derive cost and risk from alternative debt servicing paths
    - Baseline case: expected cost
    - Risk scenarios: undesirable paths for market rates and shocks
- Models are useful but not indispensable for the formulation of a debt management strategy
    - Not the main basis for decision-making, but rather a supplement to experience
    - Requires investing time and resources