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Developing and Implementing a Risk Management Model: Lessons from Uganda

by

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The views expressed are those of the author and do not necessarily reflect the views of UNCTAD

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Agenda

- Background information
- Motivation for the project
- The Project
- Project Implementation-Phases I, II and III
- Current Project status
- Challenges
- Lessons Learnt
- Way Forward

Background

- Like most developing countries, Uganda has over the years experienced a number of external debt management challenges including inter alia:
  - Poor external debt records
  - Uncoordinated and irregular borrowing.
  - Inability to meet her debt service obligations.
- Some of the consequences included:
  - Very high debt service bills, leading to default and accumulation of arrears.
  - Unsustainable debt levels.

Background Cont'd

- To address these challenges, the country adopted a debt strategy in 1991(enhanced in 1995 and more recently in 2007) with the following recommendations.
  - Always seek grant financing ahead of loans.
  - Set guidelines for contracting debt, by clearly defining:
    - Authority to commit government.
    - Terms for new loans.
  - Improve debt recording
    - Installation of a debt recording system (DMFAS).
    - Staff training.
    - Better coordination between stakeholders.
  - Pursue debt relief from creditors through rescheduling, debt cancellation, debt buybacks etc.

Background Cont'd

- As a result, presently,
  - The country has a reliable debt recording system- DMFAS- with well trained staff to run it.
  - New loans are contracted on terms in conformity with debt strategy, i.e. on IDA comparable terms.
  - Benefited from various debt relief initiatives including Paris club rescheduling, HIPC and more recently MDRI.
  - There is regular debt analysis although this has not gone beyond the HIPC type DSA and more recently LIC DSA.

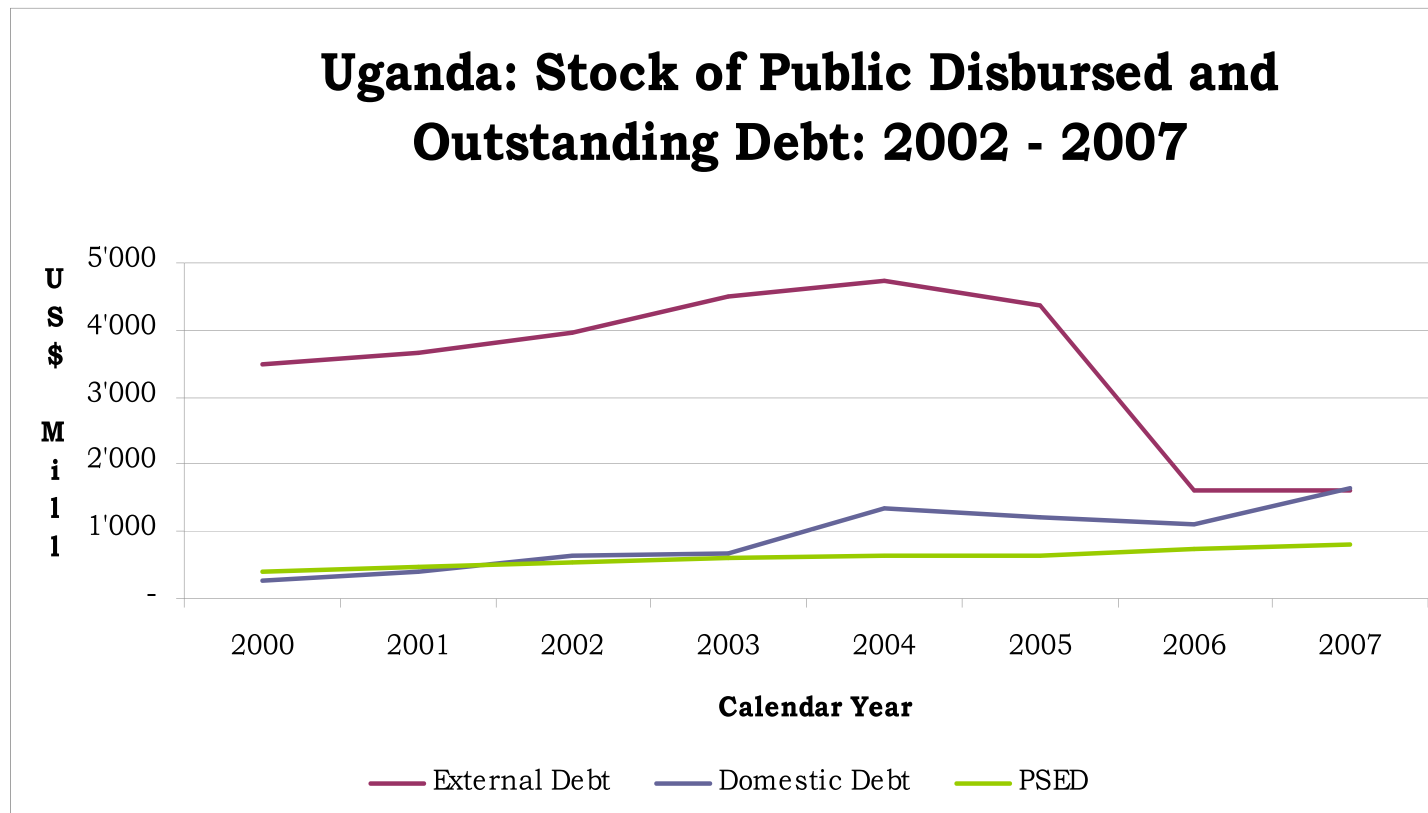
Background Cont'd

- Impact of the above policies on the country's external debt levels:
- Low external debt stock levels.
  - Sharp decline from US$4.5 billion as of end June 2006 to a little under US$1 billion as of end December 2006. (Latest provisional estimate is US$2.245 billion as of end September 2009.)
- Reduction in external debt service bill.
  - Declined from US$120 million in 2005/2006 to about US$61.3 million in 2008/2009.
- Very low debt sustainability ratios, which are projected to remain low in the medium to long term, as per the most recent Debt Sustainability Analysis (DSA) exercise.

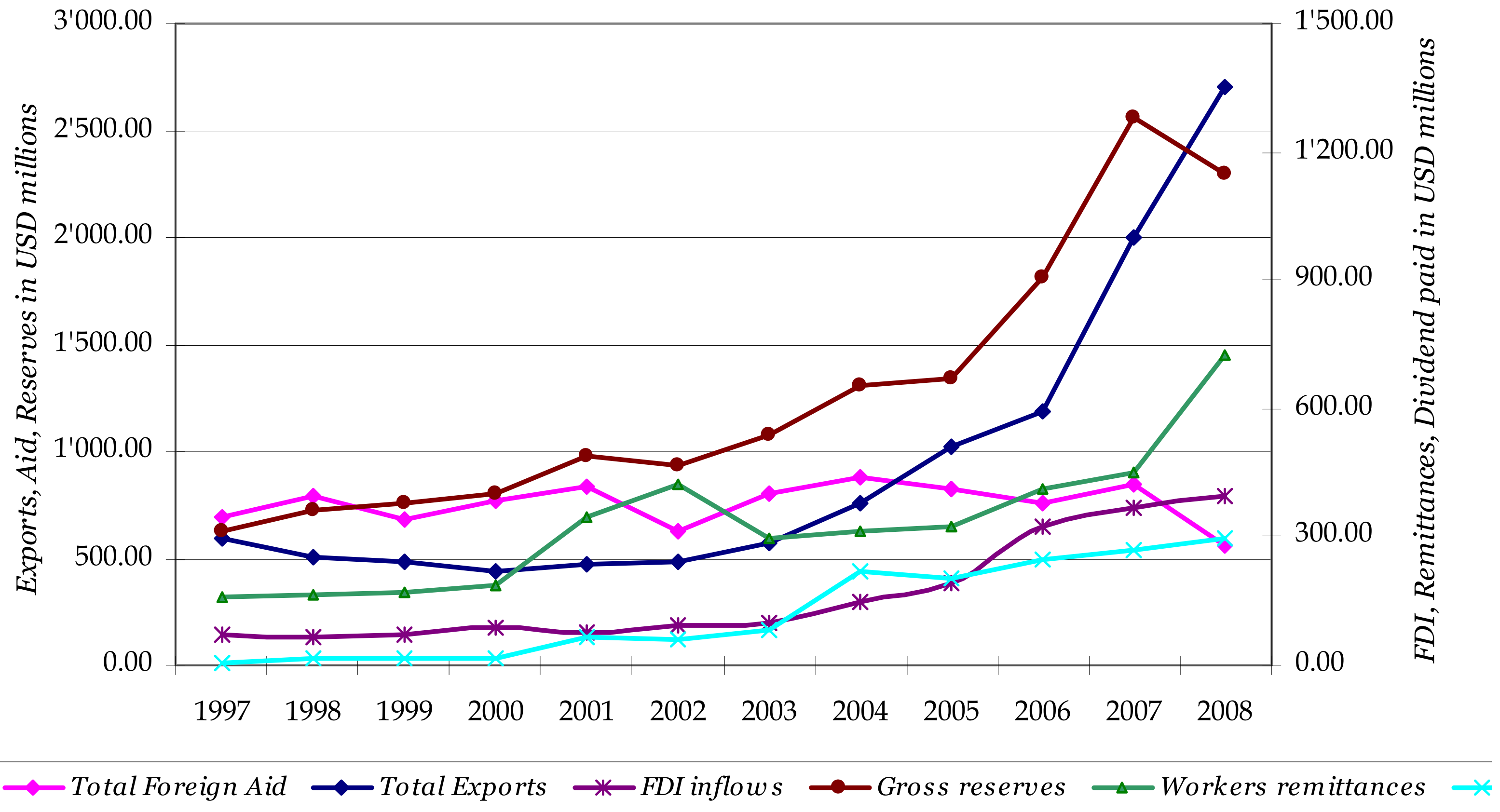
Background Cont'd

- **The Big Questions:**
- Now that we have resolved past external debt management challenges, should we sit back and relax? Are these efforts sufficient? Should we simply maintain the status quo? **No!**
- There was a general consensus:
  - The world is dynamic. Things change all the time.
  - There is need to look beyond what has been done and achieved in the past.
  - Need to broaden and deepen debt management operations, so as to conform to best practice.
- It is against this background that the SLRMP was adopted.

Background Cont'd



Background Cont'd



Motivation for the Project

- Capacity to service debt from oil revenues may be over estimated.
- Mineral resources have introduced new lenders
- Gaps in energy needs and infrastructure require significant financing.
- Agricultural exports - Global warming
- Can not stay out the market forever.
- High population growth rate

Motivation for the Project

- These included:
- The desire to create capacity in this area in preparation for challenges that come with accessing resources from international markets.
- The desire to conform to best practice in debt management as advocated in the World Bank/IMF Guidelines for Public Debt Management.

The Project

- Begun early 2006 although the idea was conceived earlier.
- Named the Uganda Sovereign Liabilities Risk Management Project (SLRMP)
- **Goal:**
  - To develop sustainable capacity to manage the country's liabilities and assets in a way that would avoid unnecessary debt servicing costs given an acceptable level of risk.

The Project Cont'd

- More specifically, the project is intended to achieve the following objectives:
  - Enhance debt management capacity of the technical staff through improved/enhanced skills particularly in the area of risk management.
  - Develop a tool to be used for risk analysis.
  - Enable staff to give proper advice to senior management as is required of them.

Project -Implementation

- Joint venture between MEFMI and Government of Uganda.
  - MEFMI has also provided both financial and technical assistance.
- Implemented with the help of consultants.
- Adopted a phased approach due to:
  - Unavailability of resources –time, finances and others- to run the full range of activities at a go.
  - Inherent activity linkages that require completion of specific tasks before others can be undertaken.

Phase I Activities

- Done in June 2007. Activities accomplished include:
- Discussed and agreed on the relevant assumptions that should be adopted in the model.
- Discussed and agreed on the model structure and other inputs.
- Provided introductory training to staff in the area of sovereign liabilities risk management.
- Identified and engaged consultants to spearhead the activity.
- Preliminary work on customizing the Sovereign Liabilities Risk model.
- Held a sensitization seminar for all stakeholders in debt management to improve awareness on the importance of the activity.

Phase II Activities

- Done in June – July 2008.
- Mainly intended to:
  - To finalize the model customization process that begun in phase I.
  - Further training for staff.
  - Additional sensitization for all stakeholders.

Phase III

- Scheduled for this financial year and is intended to achieve the following:
  - To complete the model building process, including enhancing model functionality to allow for stochastic simulation.
  - To automate all functionality of the model.
  - To document the model building process and create manuals and user guides for the model.
  - To design and advise Ugandan authorities on an appropriate reporting format.
  - To design and implement a training program for staff covering sovereign liabilities risk management concepts, and use of the various modules of the model.

Current Project Status

- Completed phases I and II.
- Have a partially operational model.
- Preparing for the third and final phase of the project.
- Continuous consultations with other debt offices with similar activities.

About the Model

- Referred to as the Sovereign Debt Management Simulation Model (SDM)
- An analytical tool for measuring cost and risk of an existing debt portfolio and assessing alternative strategies for future borrowing. Therefore it should facilitate decisions on a suitable debt strategy taking into account of the cost and risk preference of the government.
- It is MS Excel based with a modular structure where modules dependent on functionality.
- It is a cash flow simulation model. Generates cash flow estimates for both existing debt and new debt based on projections of market variables and defined strategies for new borrowing.
- Uses the aggregated cash flows to compute various cost and risk indicators.

Model Inputs and Outputs

- **Model inputs:**
  - Data on existing debt,
  - Macroeconomic variables (primary deficit, fiscal revenues, government expenditure, GDP, imports exports etc),
  - Forecasts of market variables and
  - Borrowing strategy.
- **Model Outputs**
  - Debt service on all debt instrument. May be broken down by flow type (Principal and Interest), currency, instrument type etc.
  - Statistics on total debt including stock of debt broken down as may be desired.
  - Indicators of debt levels and debt servicing capacity,
    - Present Value of debt to GDP,
    - Present Value of debt to Exports,
    - Debt Service to GDP etc.

Model Inputs and Outputs

- **Refinancing risk indicators including:**
  - Average Time to Maturity (ATM)
  - Repayment Profile
  - Debt Maturing in x number of years
- **Interest Rate risk indicators including:**
  - Average Time to Re-fixing (ATR)
  - Duration
  - Ratio of Floating rate debt to total debt
  - Average interest rates and Average interest cost
- **Currency risk indicators such as**
  - Ratio of foreign currency debt to total debt
  - Ratio of debt indexed to foreign currencies
  - Currency composition of debt.

Model Inputs and Outputs

- Other indicators include:
  - Value at Risk (VaR)
  - Cost at Risk (CaR)
  - Implicit Interest Rates,
  - Debt stabilizing primary balance.

- Cost-risk trade off analysis to facilitate choice of borrowing strategy.

Challenges with the Indicators

- **PV Based Indicators:** The choice of an appropriate proxy for discount rates is still unclear. We use CIRR rates for foreign currency denominated debt. However, these rates are not available for all foreign currencies. The Treasury bill rate is used for domestic debt.
- **Value at Risk (VaR):** The measure is based on the assumption that the normal distribution is a reasonable representation of the statistical distribution underlying the cost of borrowing. This assumption may not always hold.
- **Defining 'optimal' levels for the indicators:** It is not clear as to what level/magnitude of the indicators authorities should take action.

Challenges in Implementation

- **Huge resource requirements:** These are required for:
  - Staff training,
  - Acquiring models and other supporting software, say through in-house development or direct off-the-shelf purchase,
  - Hiring consultants.
- **Limited local capacity or lack of the requisite skills:**
  - The skills necessary to carry out this kind of analysis are often limited or non existent, thereby dictating heavy the reliance on consultants.
- **Heavy reliance on consultants:**
  - Usually driven by the skills gaps, this phenomenon may deprive the debt office of the right and responsibility to determine the destiny of the project. E.g. Our desire to include stochastic simulation in the current version of the model was discouraged by the consultants.

Challenges in Implementation

- **Delays in Implementation:** These were due to a number of reasons namely,
  - Unavailability of resources.
  - Long and protracted negotiations with consultants especially where we had divergent opinions on the content and coverage of the terms of reference. This is especially true for Phase III, originally scheduled for last financial year (2008/09), but has not taken off to this day.
  - Consultants' busy schedules. This meant that certain activities had to be postponed until such a time when they were available.

Challenges in Implementation

- **Structure of the liabilities portfolio:** For most developing countries the bulk of instruments in the liabilities portfolio comprises of non marketed debt, mainly consisting of concessional loans from multilateral institutions. Such debt is often inflexible and non responsive to the available tools for risk management such as swaps, derivatives etc.

- **Limited applicability of most methods for risk management:** The bulk of risk management methodology available today was developed for liability portfolio structures of the developed world. As such their applicability to circumstances in the developing world is limited and can only be made possible with some modifications. E.g. What would be the appropriate discount factor for IDA of AfDF loans?

Challenges in Implementation

- **Scarcity of relevant Case studies:** There is a scarcity of relevant and useful case studies to which debt offices from the developing world can make reference and learn from whenever necessary. Comparable and useful benchmarks are either lacking or hard to come by.
- **Getting all stakeholders on board:** The benefits of the project have not been fully appreciated by all stakeholders in debt management, thereby giving rise to a few voices of dissent from time to time. Some quarters believe the exercise is not necessary and efforts should remain on the traditional objectives of ensuring debt sustainability, loans are contracted on concessional terms and debt service bills remain low. This calls for sensitization of all stakeholders in debt management in the developing world if the field is to take root and prosper.

Challenges in Implementation

- **Model to usage:** Although the project has been ongoing since 2006, we have not been able to use the model or put the results to good use. This is mainly attributed to the following:
  - To this day, the model remains work in progress. A number of modules are still manually operated.
  - Model has not been calibrated thereby rendering its outputs provisional.
  - We have not yet agreed on the reporting format and procedures for the project. Reporting has been restricted to incorporating a few indicators in the regular debt service reports.

Challenges in Implementation

- **Incomplete technical documentation:** Technical documentation is not available thereby making it impossible to properly replicate methodology independently.
- **Absence of reputable scenario analysis methodology:** This has led to reliance of on decisions members' predictive judgment as to what might happen during scenario analysis.
- **Lack of an active and complete yield curve in domestic markets**.

Lessons Learnt

- Thorough research prior to hiring the consultants. This will ensure that the project is implemented on your terms.
- Ensure availability of a reasonably skilled local team to spearhead the project. This team should be trained and equipped with the necessary skills well in advance.
- Thorough sensitization to ensure that all stake holders are on board prior to implementation of the project. This will greatly facilitate the smooth running of the project.

Way Forward

- Complete phase III of the project so as to make the model operational.
- Need to find alternative sources of funding to ensure sustainability of the activity. Currently working on a program with UNCTAD that will enable the country find funding for the project to ensure its sustainability.
- With collaboration with UNCTAD, we are looking into the possibility of interfacing the model with DMFAS, so as to ease the transfer of data to the Model.
- Further staff training, sensitization of stakeholders etc.

Abreviations

- AfDF African Development Fund
- BOU Bank of Uganda
- CIRR Commercial Interest Reference Rates
- DMFAS Debt Management and Financial Analysis System
- DSA Debt Sustainability Analysis
- HIPC Heavily Indebted Poor Countries Initiative
- IDA International Development Agency
- LIC Low Income Countries
- MDRI Multilateral Debt Initiative
- MEFMI Macroeconomic and Financial Management Institute of Eastern and Southern Africa
- MoFPED Ministry of Finance Planning and Economic Development- Uganda
- SLRMP Sovereign Liabilities Risk Management Project
- SDM Sovereign Debt Management Model
- UNCTAD United Nations Conference on Trade and Development