Sovereign Debt Management Forum 2014

Background Note for Breakout Session 4

An asset liability management (ALM) framework can help governments to assess risks in the sovereign balance sheet and therefore provide input to its management. Currency mismatches between assets and liabilities are a major form of risk a government balance sheet can be exposed to. In this respect, the first order consideration for sovereigns is the choice between domestic versus foreign currency. A second order consideration can be the choice of currency composition among foreign currency assets and liabilities. At this session presenters will share recent developments in the application of ALM frameworks with a focus on currency composition. Denmark which has been implementing this framework for the last twenty years will discuss if and how the policy evolved over time. Turkey will share how debt management policies have been shaped to reduce the foreign currency risk in view of a narrow ALM framework. Indonesia will present the ongoing work for building an ALM framework covering the balance sheet of the central government, the Central Bank (CB) and the State Owned Entities (SOEs).

Managing currency composition under an asset-liability management framework

Introduction

The application of an asset and liability management (ALM) framework is typical of financial intermediaries. An ALM's main objective is to contain risks by matching the financial features (e.g. interest rate or currency) of assets and liabilities, so that one side of the balance sheet will be hedged – or immunized- by the other side. To oversee and manage the financial risks resulting from their activities, financial intermediaries have asset liability committees that periodically review the features of their assets and liabilities, analyze currency and interest rate mismatches, and on this basis together with their level of risk tolerance, decide on possible adjustments to the balance sheet structure.

Applying the lesson to the risk analysis of a sovereign balance sheet is however challenging. The government's main "asset" is its capacity to tax and the financial features of this "asset" are not easy to determine. A common approach is to first consider the major financial assets on the government's balance sheet such as international reserves, cash balances and other sovereign funds such as Sovereign Wealth or Stabilization Funds.
Another challenge arises from the segmentation in the institutional arrangements where, for example, foreign reserves are managed by the CB and the Ministry of Finance (MoF) is responsible for the government debt portfolio, each with different objectives and time horizons.

Nonetheless ALM principles remain relevant for governments concerned about the financial and economic costs that result from financial shocks to the balance sheet such as an unexpected increase in debt servicing flows, defaults of State Owned Entities, commodity price changes etc.

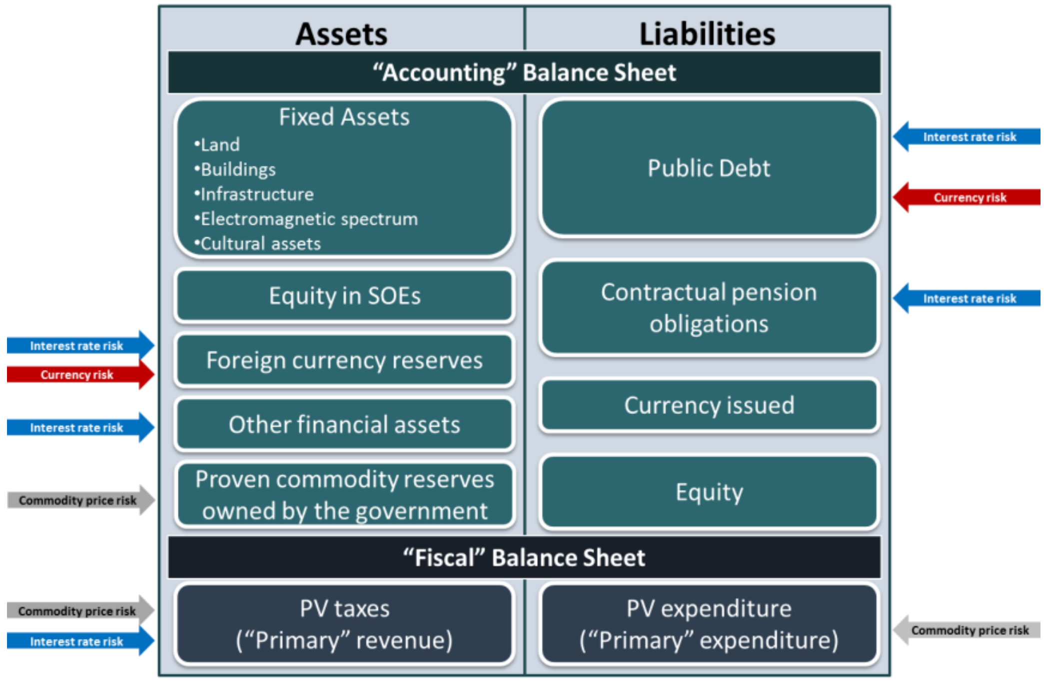
Currency mismatches between assets and liabilities have proven to be one of the key triggers of governments' financial distress due to their potential of increasing the public debt stock if exposed to high share of foreign currency debt, depleting the foreign reserves and ultimately disrupting the economic growth in times of crisis (Dornbusch, 2001). Therefore, some countries have already embarked on some form of coordinated ALM, which typically involves integrated management of the net position on central government debt and other financial liabilities, and international reserves from a currency composition perspective. Provided that effective coordination among the related institutions is achieved, this is the intuitive first step both due to the potential magnitude of the impact of a currency mismatch under a crisis scenario but also it is relatively easy to identify and analyze. In this session presenters will share recent developments in the application of ALM frameworks to the currency composition of the government debt portfolio.

The Sovereign Balance Sheet

Empirical studies show that balance sheet vulnerabilities such as currency and maturity mismatches are associated with higher probability of crises (Koc, 2014). Evidently, foreign currency mismatches led to balance sheet crises countries suffered from such as in Mexico in 1994, Brazil in 1999, Russia in 1998, and Argentina in 2002, to name a few. This and the increased responsibilities in managing sovereign assets and contingent liabilities in the early 1990's started driving public debt managers to ponder the application of the ALM framework. More recently, as sovereign balance sheets expanded, the composition of debt portfolios have been adversely affected due to constraints in the external markets and short term debt issuances, particularly during the 2008 and 2009 global financial crisis, when yield curves steepened. Additionally, the level of foreign reserves increased significantly during the last ten years causing the investment strategies shift towards more return oriented policies. This led to a change in the structure of the composition of the foreign reserve portfolio. As balance sheets became more complex, sovereigns felt a greater need to start exploring the ALM framework (Blommestein and Koc, 2008, IMF 2011, Das et al.2012).

Figure 1 below presents a stylized government balance sheet, incorporating both a normal "accounting" balance sheet as well as a fiscal or "economic" balance sheet. The figure illustrates well the complexity of building sovereign balance sheets and of managing the different types of financial risks when components of the balance sheet are managed by institutions with different objectives, budgeting and accounting practices.

Figure 1. Combined Central Bank and Government Balance Sheet



ALM Framework Applied to Foreign Currency Risk

In theory, foreign currency risk is probably the easiest to assess and manage using the ALM approach. Governments that hold significant foreign currency financial assets, for example in sovereign wealth or stabilization funds, would find the ALM framework appropriate and would seek to identify and implement the natural hedges. Similarly for countries with significant levels of CB reserves debt managers could expand the application of the ALM approach to the CB assets with some confidence, with the condition that there is a common understanding and good coordination between entities. However, extending the ALM framework to the CB foreign reserves could prove less relevant if the size of the reserves portfolio is significantly smaller and/or has a horizon for the holdings substantially shorter than that of the government debt.

Debt managers especially in emerging markets decide on the currency composition of the government debt portfolio in two steps: first the split between local and foreign currency is determined, then the composition of the foreign currency borrowing is chosen. The first step may be constrained by macroeconomic factors such as the need to fill the savings-investment gap and/or by the limitations of the domestic market to provide funding with adequate tenor for the projects to be financed, or cost considerations.

The use of the ALM framework is perhaps more feasible in the second step. Once the sovereign has decided to hold a portion of the borrowings in foreign currencies the key questions are which currencies should they be and what should be the approach to select them. Countries tend to apply some sort of an ALM framework to identify first the natural hedges available (FX assets) and denominate a sub-portfolio of debt in these currencies to take advantage of the hedges. The selection of the currencies for the sub-portfolio that has a net exposure is driven by the objective of minimizing the volatility of debt charges expressed in local currency subject to a tolerable risk (Melecky, 2008).

Natural versus Active Hedging

Reducing the outright exposure to foreign currency denominated debt or matching the currency composition between the CB reserves, other financial assets and public debt portfolio is a natural hedging mechanisms followed by countries. Using the proceeds of foreign currency borrowing to meet the refinancing needs of existing external debt and to build up foreign reserves in order to keep a certain foreign currency debt position are another method (e.g. New Zealand with a zero FX debt position targeted).

On the other hand, a sovereign which seeks a flexible financial tool for actively hedging its net foreign currency exposure can use the financial derivatives. They allow the debt and asset managers to move the actual portfolios to a benchmark portfolio without selling or buying large amounts of securities or foreign currency which could disrupt the financial markets (Cassard and Folkerts-Landau, 1997). Transacting this kind of products, provided that there is such a market, entails specific legal and IT system arrangements as well as credit and operational risks management (Koc, 2014). Countries choosing to undertake derivatives need to establish a framework to address the governance, risk and operational difficulties.

Conclusion

To reduce the balance sheet vulnerabilities of a sovereign, potential benefits of adopting an ALM framework are numerous. In practice, there are institutional concerns due to conflicting policy objectives in addition to practical challenges due to different analytical methods and accounting principles which make it difficult to manage all the identified mismatches. Nonetheless ALM is still relevant to analyze and manage mismatched in government assets and liabilities. Countries which embarked on the ALM framework typically start by the net foreign exchange exposure which is in theory the easiest to assess and manage.

Issues for Discussion

- How should the scope of the ALM framework be defined? In a narrow sense, that is, only central bank reserves and public debt portfolio or in a broader sense with SOEs, sovereign wealth funds, stabilization funds etc.?

- How to decide on the currency composition of the debt portfolio and the Central Bank reserves from an ALM view?

- What should be the institutional setup and legal arrangements for an ALM focused on foreign exchange risk? Establish a committee? How to coordinate and communicate?

- How and if to use currency swaps for managing net exposure?

- How should central government guide the rest of the public sector such as the SOEs or sovereign wealth funds so as to reduce the exposure originating from their balance sheet?

- How to model the analytical ALM frameworks and what are the challenges? (all participants)

- Would the hedging strategy of a sovereign change if the size of the assets and liabilities evolve over time so that the direction of the net exposure changes?

- How to develop recommendations based on the ALM analysis and more importantly implement them on an ongoing basis?

References

- Anderson, Phillip, 2012, *Efficiency Gains from a Consolidated Approach to Sovereign Balance Sheet Management*, RAMP Executive Forum, Manila

- Antonio Velandia, Mimeo, 2002, *A Risk Quantification Model for Public Debt Management*

- Beck R. and Rahbari E., 2008, *Optimal Reserve Composition in the Presence of Sudden Stops, the Euro and the Dollar as Safe Haven Currencies*, European Central Bank Working Paper, No 916

- Blommestein, Hans and Koc Kalkan, Fatos, 2008, *Sovereign Asset and Liability Management: Practical Steps towards Integrated Risk Management*

- Cassard, Marcel, Folkerts-Landau, David, 1997, *Risk Management of Sovereign Assets and Liabilities*, IMF.

- Das, Udaibir, Lu, Yinqiu, G. Papaioannou, Michael and Petrova, Iva, 2012, *Sovereign Risk and Asset and Liability management –Conceptual Issues*, IMF Working Paper, No12/241

- Dornbusch, Rudi, 2001, *A primer on emerging market crises*, NBER

- Koc, Fatos, 2014, *Sovereign Asset and Liability Management Framework for DMOs: What do Country experiences suggest?,* UNCTAD

- Martin Melecky, 2008, *An Alternative Framework for Foreign Exchange Risk Management of Sovereign Debt*

- Togo, Eriko, 2007, "Coordinating Public Debt Management with Fiscal and Monetary Policies: an Analytical Framework," World Bank Policy Research Working Paper, No. 4369 (September 2007).

- Wheeler, Graham. 2004. "*Sound Practice in Government Debt Management*", pp.83-125. World Bank. Washington D.C.