

# Crisis Preparedness and Debt Management in Low Income Countries

Strengthening Institutions and Policy Frameworks

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## Abstract

The magnitude of the public liabilities incurred as a result of the unprecedented government action in the wake of the financial crisis of 2008–2009, and the consequences of exiting from the projected high debt scenario, have become a major source of concern about a future sovereign debt crisis. As Low-Income Countries (LICs) face unique challenges in debt management (DeM) due to their more limited financing sources and higher capacity constraints, their ability to successfully manage their public debt burdens effectively through a crisis of this magnitude is far from assured. Therefore, the challenges of the last two years will require a re-evaluation of existing DeM strategies in LICs, focusing

on the identification of institutional weaknesses and the assessment and mitigation of potential risk. It is in this context that this paper examines the application of two global public goods in LICs: the Debt Management Performance Assessment (DeMPA) and the Medium-Term Debt Management Strategy (MTDS) tools. The results of the application of these tools from 2007–2009 provide valuable information to policymakers and other stakeholders on the development of sound public DeM practices and analytical capacity, with the goal of strengthening the public balance sheet and reducing vulnerability to financial crises.

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This paper—a product of the Economic Policy and Debt Department, Poverty Reduction and Economic Management Network—is part of a larger effort in the department to identify and address developing country vulnerabilities in the face of financial and economic crisis. Policy Research Working Papers are also posted on the Web at <http://econ.worldbank.org>. The author may be contacted at [aprasad@worldbank.org](mailto:aprasad@worldbank.org).

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**Crisis Preparedness and Debt Management in Low Income Countries: Strengthening Institutions and Policy Frameworks**

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## I. Introduction

In the wake of the financial crisis of 2008-09, a number of governments, in both advanced and developing countries, undertook massive fiscal and monetary interventions in order to stave off a system-wide financial and economic collapse. While necessary, the magnitude of the public liabilities incurred as a result of this unprecedented government action, and the consequences of exiting from the projected high debt scenario, have become in themselves a major source of concern about a future crisis.<sup>2</sup> History has indeed shown that public borrowing accelerates markedly and systematically ahead of a sovereign debt crisis.<sup>3</sup> The International Monetary Fund (IMF) projects that government debt to GDP ratios will rise to 85% in G20 countries by 2014 as a result of the crisis, from 62 percent in 2007.<sup>4</sup> While indeed important, G20 countries, with stronger institutions and policies, are better equipped to deal with pressures of this kind. Among more vulnerable developing, and especially low-income countries (LICs), the ability to manage their public debt burdens effectively through a crisis of this magnitude is far from assured.

Empirical evidence supports the view that strong public debt management (DeM) institutions and policies have played a critical role in mitigating the effects of the financial crisis in middle income countries (MICs).<sup>5</sup> To some extent, the same could be said for LICs, but for different reasons. In the case of MICs, there has been positive policy action that led to risk reductions in their debt portfolios in the years leading up to the crisis. In the case of LICs, it has been the historical creditor relations dominated by the official sector on the external front, and in many cases (but not always), a captive investor base on the domestic front that has helped to insulate debt portfolios from becoming a source of financial vulnerability. However, the current environment will be particularly challenging for debt managers in LICs as financing options, from official as well as private sources, that were available to them before the crisis may no longer be available or may now have very different cost and risk characteristics. As a result, the challenges of the last two years will require a re-evaluation of existing debt management strategies, focusing on the assessment and mitigation of potential risk.

While the acute phase of the crisis is over, many pitfalls still remain—foremost among them the potential for a new sovereign debt crisis (see Figure 1). In the LIC context, the pre-crisis picture was one of optimism. Debt relief through the Highly Indebted Poor Country (HIPC) Initiative and the Multilateral Debt Relief Initiative (MDRI) gave countries new fiscal space and renewed potential for economic growth, which in turn induced new creditors with hardened terms to engage with LICs in both international and domestic markets. However, as conditions in the international capital markets deteriorated, many such plans have been on hold as a new reality has set in. In addition to the longer term trend of declining access to donor funding as LICs move up the development ladder, this flow may be drying up faster than previously anticipated given the severity of the financial crisis on sovereign balance sheets in donor countries. Such a shift in donor flows can fast-forward the need for LICs to borrow on commercial terms, which could rapidly increase the exposure of their debt portfolios to financial risks if not managed prudently. These developments reinforce the importance of establishing strong institutions and policies.

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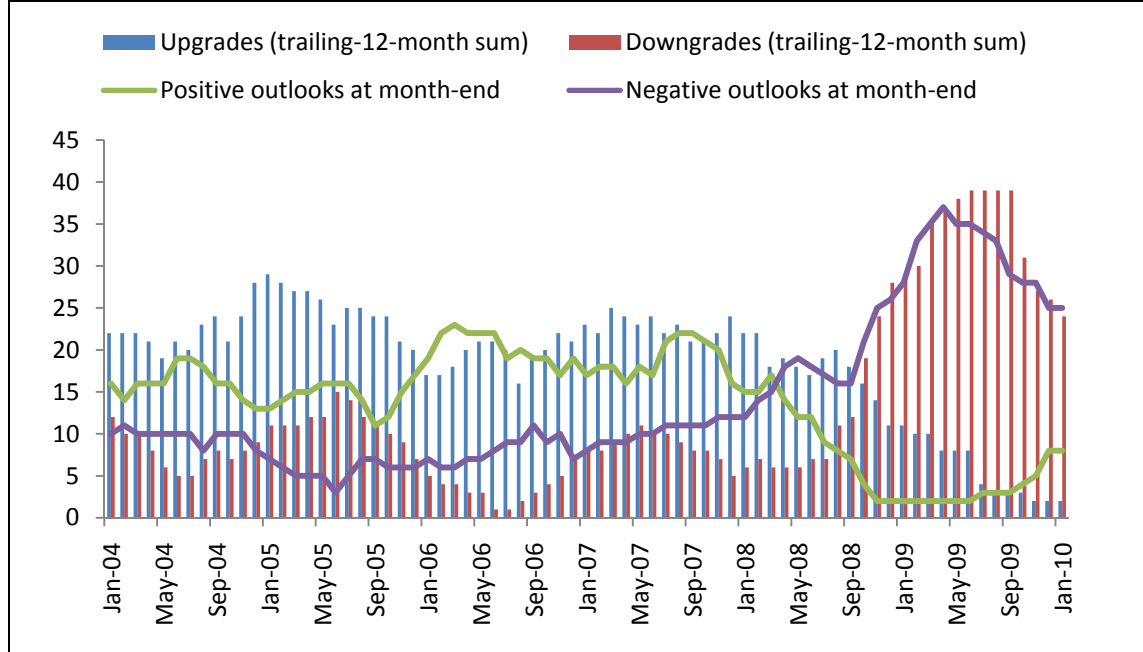
<sup>2</sup> See Braga (2010)

<sup>3</sup> Reinhart and Rogoff (2010)

<sup>4</sup> IMF Fiscal Affairs Department (2009); in fact the rise in debt levels comes uniquely from the advanced countries in the G20, whose general government debt levels are predicted to rise from 78.2 percent in 2007 to 118.4 percent in 2014.

<sup>5</sup> See Anderson, Silva and Velandia (forthcoming, 2010)

**Figure 1: Sovereign Foreign Currency Upgrades, Downgrades, and Outlooks, 2004-Present**



Source: Standard and Poor's

Despite the recognized need for such institutional strengthening, according to some measures debt management performance in LICs has stagnated or even deteriorated in recent years.<sup>6</sup> In light of this, it is important to assess the priority areas in improving DeM performance in a way tailored to country specific circumstances and stages of development. For countries without the necessary legal and institutional framework to support effective DeM, the focus must be on identifying and addressing these weaknesses. For countries that have the institutional underpinnings of a functional DeM framework in place, it will be critical to focus on capacity building to develop medium to long-term DeM strategies that examine the cost-risk tradeoffs in order to safeguard future debt sustainability. This is particularly important in preparing for future crises as LICs gradually accumulate increasingly complex public debt portfolios combining a wider array of financial instruments from both public and private creditors.

It is in this context that this paper examines the application of two global public goods in LICs: the Debt Management Performance Assessment (DeMPPA) and the Medium-Term Debt Management Strategy (MTDS) tools<sup>7</sup>. Drawing upon results from the application of these tools from 2007-2009 provides valuable information to policymakers and other stakeholders on the development of sound public DeM practices and analytical capacity, with the goal of strengthening the public balance sheet and reducing vulnerability to financial crises. This paper builds on the results of a 2006 World Bank analysis on Public Debt Management in Low-Income Countries that provided the empirical justification for the need to improve DeM capacity in LICs.<sup>8</sup> The results showed that DeM policy and high indebtedness are

<sup>6</sup> World Bank (2006). As measured by the CPIA Debt Policy Indicator

<sup>7</sup>The DeMPPA was developed by WB and the MTDS jointly by the Bank and the Fund. Both tools were developed through a broad consultative process seeking suggestions and inputs from client countries and international technical assistance providers that are active in the field.

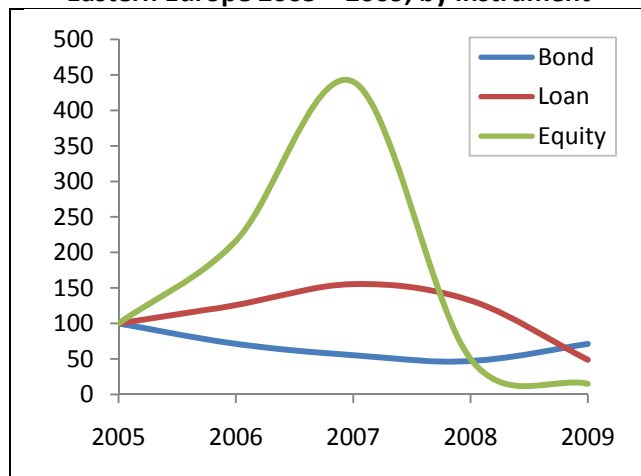
<sup>8</sup> World Bank (2006)

significantly related in LICs. This paper builds on those results by identifying the specific shortcomings in DeM in LICs and providing the basis for targeted reform programs to increase their DeM performance. Much literature exists on the importance of DeM in developing countries as well as the links between DeM and financial crises.<sup>9</sup> This paper builds on this literature by introducing new data on DeM in LICs that identifies vulnerabilities and highlights areas for improvement. The structure of the paper is as follows: Section II gives a brief overview of the current crisis, with particular attention paid to its effects on LICs. Section III looks at the unique challenges developing countries, and LICs in particular, face with regard to DeM. Section IV focuses on the results of the DeMPA and MTDS tools and what they tell us about the current state of DeM in LICs. This section identifies priority areas for improvement and highlights potential pitfalls in the current environment. Section V concludes.

## II. Setting the Stage: The Global Financial Crisis and Developing Countries

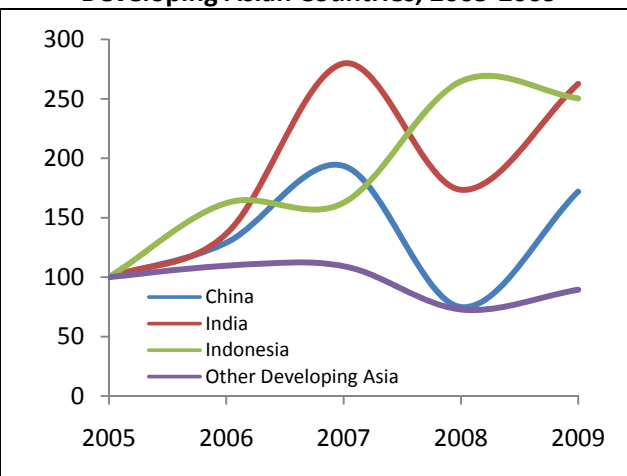
The global financial and economic crisis of 2008-09 has significantly altered the economic landscape for developing countries. The effects of the crisis on developing countries and regions were diverse and a function of both developmental and structural factors. Many Eastern European economies, which were highly integrated with and reliant upon Western European capital markets, most notably, were hard hit by financial contagion and the sudden stop in capital flows. LICs on the other hand, with financial sectors that were largely not integrated with the global markets, were insulated from the financial market contagion that spread from advanced economies. LICs, however, were severely affected by the decline in exports and falling commodity prices. In either case, developing countries as a whole now face a new and more precarious post-crisis environment, the major consequence of which will be potential reductions in trend growth over the medium term (see Figure 4).

**Figure 2: Private Capital Flows to Central and Eastern Europe 2005 – 2009, by instrument**



Source: IMF Financial Stability Report 2010, Index: 100 = 2005

**Figure 3: Total Private Capital Flows to Developing Asian Countries, 2005-2009**



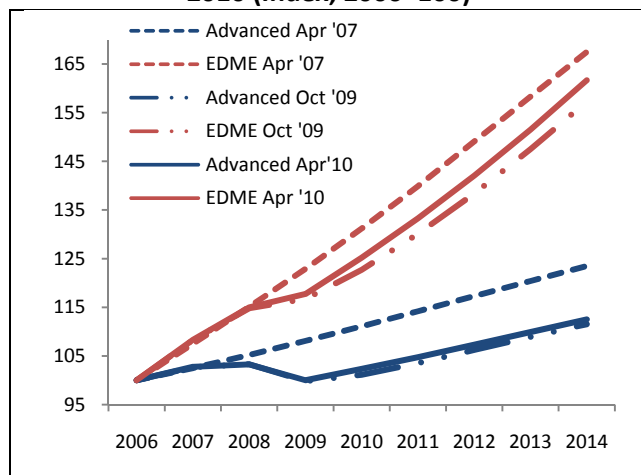
Source: IMF Financial Stability Report 2010, Index: 100 = 2005

With the exception of some large emerging markets that came into the crisis with strong fundamentals and large external surpluses, capital inflows have declined sharply for most developing countries. For example, while China, India and Indonesia have for the most part recovered their pre-crisis levels, the rest of developing Asia has not (see Figure 3). Similarly, Central and Eastern Europe, with larger current

<sup>9</sup> Notably, see World Bank (2003), World Bank (2009), Anderson and Togo (2009), Melecky (2007), Jaimovich and Panizza (2006), and Panizza (2008)

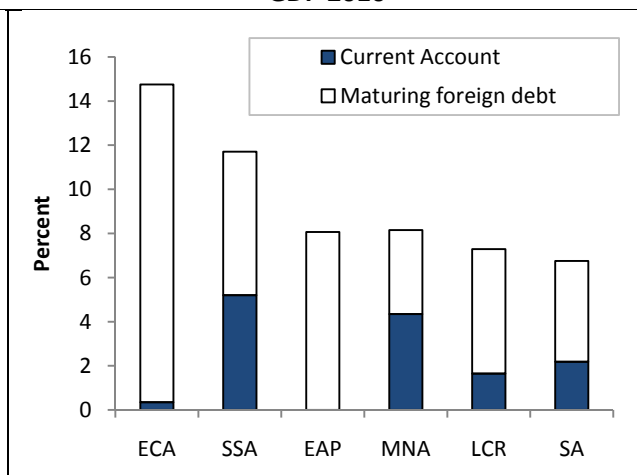
account deficits and higher reliance of foreign capital, has seen private flow decline to below 2005 levels in 2009 (see Figure 2). Despite this, however, the financing needs of developing countries have not declined. Overall, net private capital flows to developing countries in 2009 are estimated to have fallen by \$795 billion relative to their 2007 peak, while total external financing needs, measured by current account deficits and maturing private debt, is measured at \$1.2 trillion. LICs will suffer the most from this decline as their already small 2.6 percent of total private capital flows will fall to almost zero in 2010. Though small in absolute terms, these flows represent a significant share of national income, investment, and budgetary support, and this loss will certainly have a severe impact on the ability of LICs to meet their financing needs in the short to medium term.<sup>10</sup> According to the World Bank, countries eligible for soft loans and grants from the International Development Association (IDA) may require as much as \$35 billion to \$50 billion in additional funding in 2010 just to maintain 2008 program levels, on top of the resources necessary to fund additional demands brought upon by the crisis.<sup>11</sup>

**Figure 4: Projected GDP Growth: 2007, 2009, and 2010 (Index, 2006=100)**



Source: IMF WEO, EDME—Emerging and developing market economy

**Figure 5: External Financing Needs as a Share of GDP 2010**



Source: World Bank GEP

Tighter regulation in high-income countries and the need for multinational banks to conserve capital will also impede foreign bank lending in developing countries. In some regions, a growing participation by foreign banks in domestic financial systems supported the rapid rise in domestic financial intermediation. Indeed, the extent of the expansion in domestic credit in developing countries is directly related to GDP growth and the extent to which foreign banks increased their market shares (see Figure 6). Foreign direct investment (FDI) is usually less volatile than debt flows, and should be less affected by the crisis; however, parent firms will face higher capital costs, and these are likely to reduce their ability to finance individual projects. The real-side consequences of such a decline could be serious because FDI represents an important share of fixed investment in developing regions, and LICs in particular (see Figure 8).<sup>12</sup> Remittances, also an important and resilient source of capital for LICs, have declined sharply (see Figure 7) and are not projected to regain their pre-crisis levels until 2012.<sup>13</sup>

**Figure 6: Local Currency Lending as a Percent of**

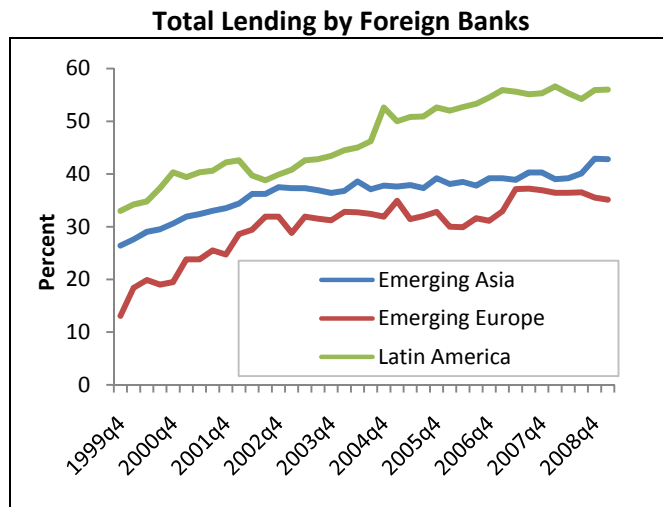
<sup>10</sup> World Bank GEP (2010)

<sup>11</sup> Protecting Progress (WB, 2009)

<sup>12</sup> See World Bank GEP (2010)

<sup>13</sup> Mohapatra and Ratha (2010)

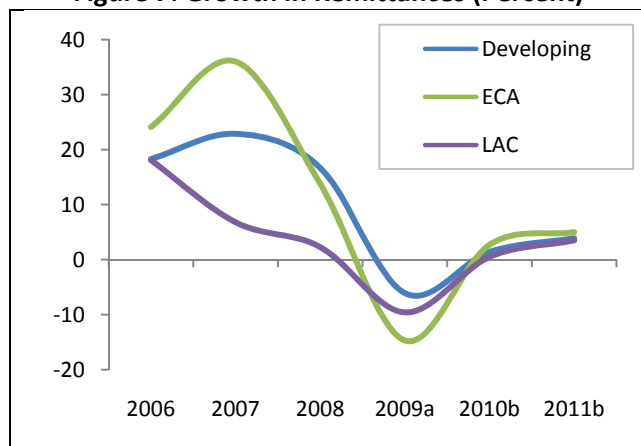
For LICs, the longer-run effects of the decline in capital flows are serious, particularly because deficiencies in domestic intermediation systems are likely to prevent them from compensating for a reduced foreign presence. However, LICs are not without a potential remedy—particularly regarding the improvement in their policies, institutions, and the overall regulatory environment. Recent empirical work shows that the inefficiencies in domestic financial sectors greatly influence borrowing costs in developing countries. Thus improvements in policies and institutions governing the financial sector can have a significant impact in boosting domestic financial intermediation to an extent that could outweigh the potential negative impact of higher global risk premiums, offsetting some of the long-term effects of the financial crisis.<sup>14</sup>



Source: IMF WEO

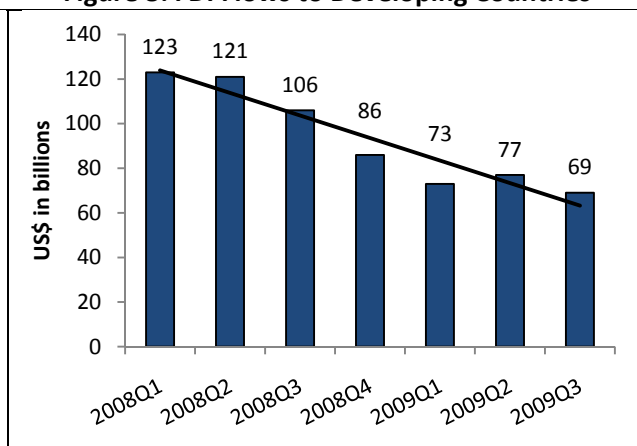
Faced with a less active external financing system, it is all the more imperative that authorities in developing countries take steps to improve public DeM practices, including efforts to develop the domestic debt markets, and to build the institutional capacity necessary to adapt to changes in the international financial environment to cushion the effects of exogenous shocks. Such improvements will decrease market perceptions of risk as well as increase cost efficiency, mitigating the effects of less favorable external financial conditions. Importantly, such improvements will also help to reduce vulnerabilities to future crises.

Figure 7: Growth in Remittances (Percent)



Source: Mohapatra and Ratha (2010).

Figure 8: FDI Flows to Developing Countries



Source: World Bank GEP

It is in this context that this paper assesses DeM capacity in developing countries. However, first it is important to identify how DeM is directly related to effective crisis response and how developing countries face unique challenges in this area.

<sup>14</sup> World Bank (2010) shows that a decline in interest spreads of 25 bps a year on average could produce a 13 percent increase in long-term potential output, increasing potential average annual output growth by 0.3 percent.

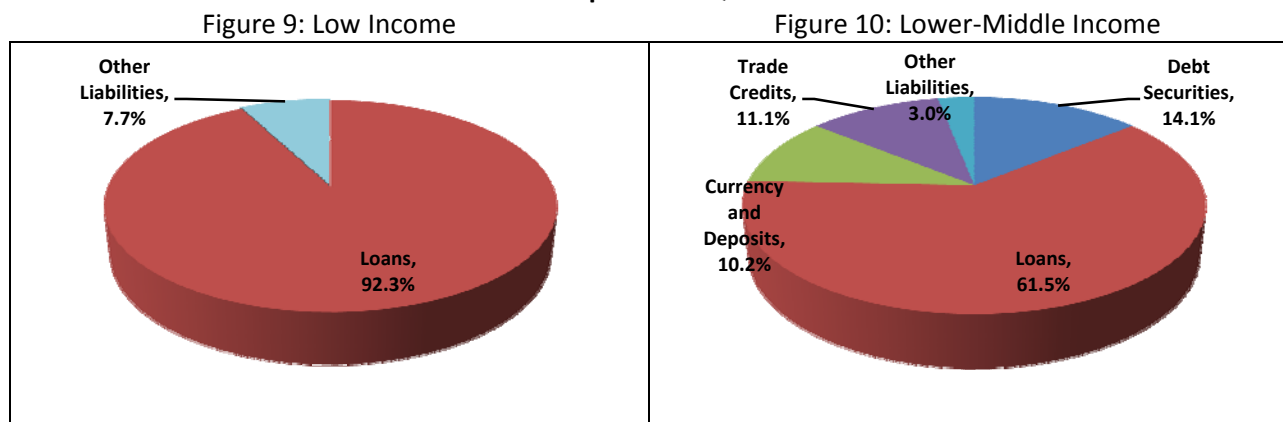


### III. Debt Management (DeM), the Crisis, and LICs

Sovereign DeM is the process of establishing and executing a strategy for managing the government's debt in order to meet its stated goals. While each government's goals are unique, common among them are to develop the capacity to raise the required amount of funding within the government's risk and cost parameters, as well the development and maintenance of an efficient market for government debt securities.<sup>15</sup> More broadly, many governments seek to ensure that both the level and rate of growth in public debt are fundamentally sustainable, and can be serviced under a wide range of circumstances. Effective DeM covers issues such as ensuring effective policies and procedures for undertaking borrowings through external and domestic markets, designing and implementing a medium term debt management strategy, as well as effective systems for administration, analysis and reporting of debt data.<sup>16</sup> In times of crisis, sovereigns' access to resources, particularly through external markets, is stressed. Thus, there is an urgent need for prudent and effective DeM strategies, policies, and procedures to stave off and mitigate vulnerabilities at such times.

Among developing countries, LICs face limited choices with regard to DeM.<sup>17</sup> From one perspective, their internal challenges lie in the difficulty of developing adequate capacity to manage public debt effectively—particularly in establishing the appropriate institutional and governance arrangements, and the development of analytical capabilities. From another perspective, their choices are significantly more limited with respect to the sources and instruments they can access to meet their financing needs (see Figures 9-12).

**Figures 9-12: External Public and Publicly Guaranteed Debt Composition by Instrument and Level of Development— 2Q 2009**

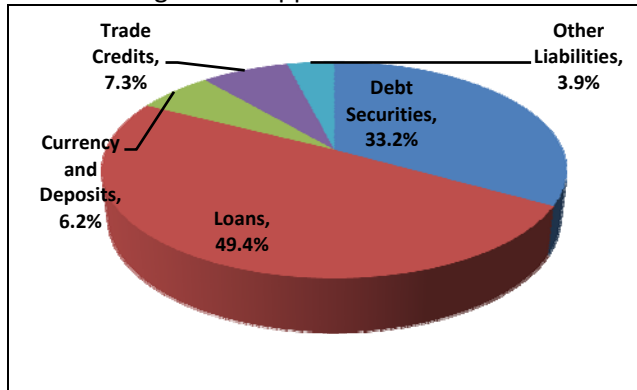


<sup>15</sup> World Bank and IMF (2003)

<sup>16</sup> See DeMPA Guidance Note (World Bank 2009) for a full description.

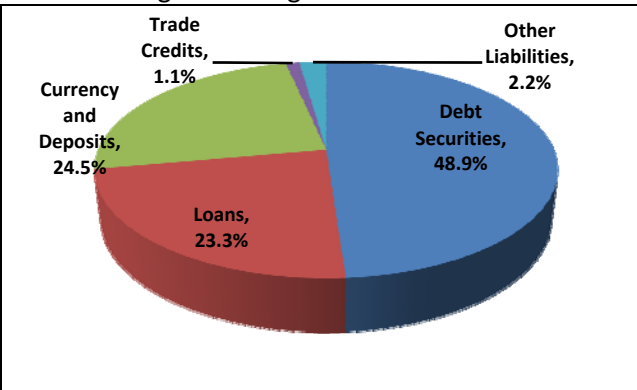
<sup>17</sup> WB (2007)

Figure 11: Upper Middle Income



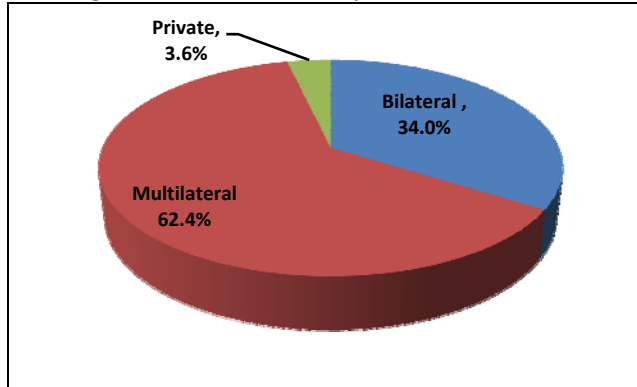
Source: World Bank

Figure 12: High Income - OECD



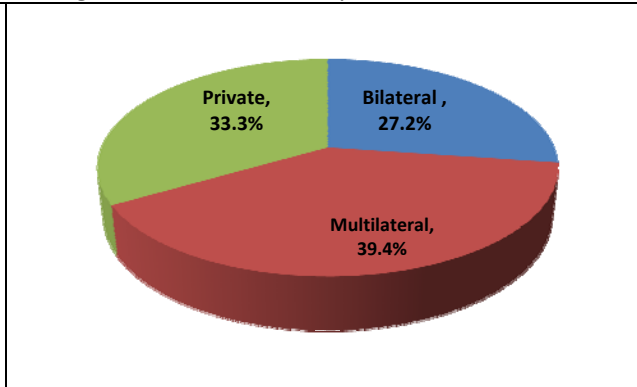
**Figures 13-16: Creditor Composition and Concessional of External Public and Publicly Guaranteed Debt – 2008**

Figure 13: Creditor Composition – LICs 2008



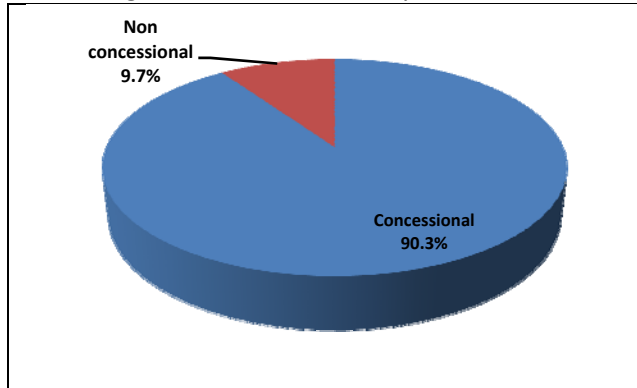
Source: World Bank

Figure 14: Creditor Composition – MICs 2008



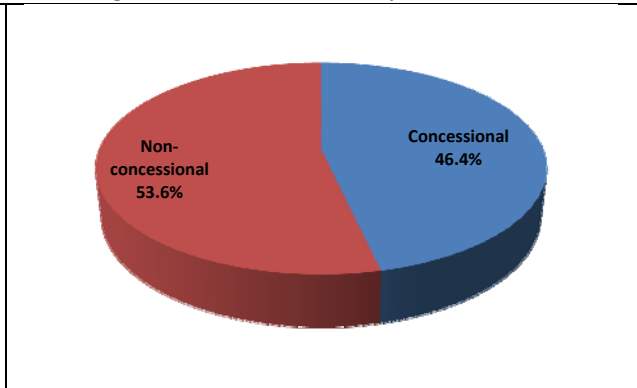
Source: World Bank

Figure 15: Concessional – LICs 2008



Source: World Bank

Figure 16: Concessional – MICs 2008



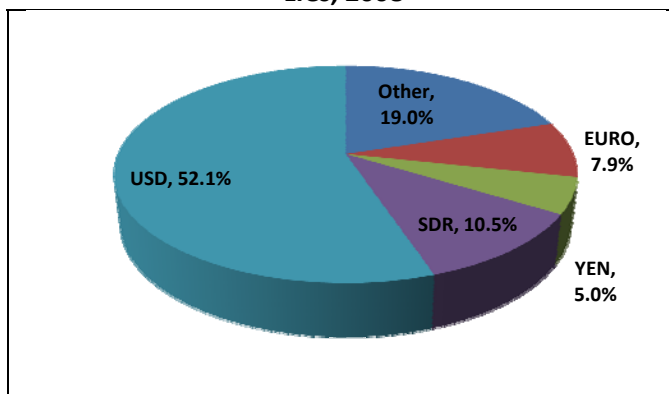
Source: World Bank

Creditor composition and concessional of the LIC debt portfolio also differ markedly from that of more developed MICs (See Figures 13-16). Multilateral and official bilateral creditors make up over 95 percent of the public and publicly guaranteed external debt held by LICs. Over 90 percent of this debt is contracted on concessional terms with below-market interest rates and long maturity periods. While largely fixed rate concessional sources of funding limit exposure to interest rate risk, the consequent exposure to currency risk has been significant in LICs. By contrast, one-third of the public external debt

stock in MICs is made up of commercial credits. The combination of commercial debt and the non-concessional financing provided by bilateral and multilateral institutions implies that over half of MIC debt is contracted on non-concessional terms.

Traditionally, the typical strategy for LICs has been to maximize concessional debt. Such a strategy minimizes debt servicing costs, leading to lower risk of debt distress and improved debt sustainability; however, it does result in significant exchange rate risk (see Figure 17). In many LICs, the mix of external and domestic financing is not a choice but more a function of the international donor community's willingness and ability to provide external financing, with domestic financing used as a residual to close the funding gap. While the characteristics of donor funding can be greatly advantageous, when the mix of external and domestic debt financing is not a domestic policy choice, the scope for effective and independent policymaking is constrained. Focusing uniquely on external sources of funding can also lead to the neglect of domestic debt market development—an important alternative that provides additional degrees of freedom, often with lower transactions costs, to the debt manager. This alternative is especially important when access to external financing has been reduced.

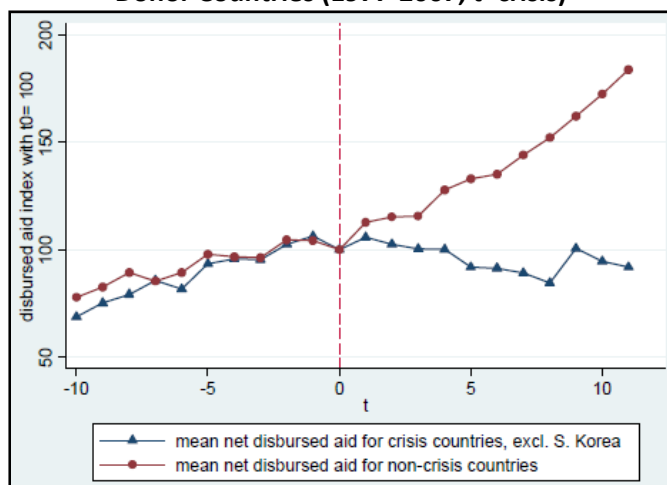
**Figure 17: Currency Composition of External Debt in LICs, 2008**



Source: World Bank

While the characteristics of donor funding can be greatly advantageous, when the mix of external and domestic debt financing is not a domestic policy choice, the scope for effective and independent policymaking is constrained. Focusing uniquely on external sources of funding can also lead to the neglect of domestic debt market development—an important alternative that provides additional degrees of freedom, often with lower transactions costs, to the debt manager. This alternative is especially important when access to external financing has been reduced.

**Figure 18: Net Disbursed Aid from Crisis and Non-Crisis Donor Countries (1977-2007, t=crisis)**



Source: Dang, Knack and Rogers (2010)

For these reasons, the current environment is particularly challenging for debt managers in LICs as the financing options that were available in 2007 may now have very different cost and risk characteristics. Analysis of the crisis effects on donor financing illustrates the large extent to which donor country aid declines in the years after a banking crisis, posing a significant risk to fiscal and debt sustainability in LICs. Figure 16, from a recent paper by Dang, Knack and Rogers (2010) shows that aid flows from crisis impacted donor countries can be significantly affected for a decade or more post-crisis.<sup>18</sup> This volatile and changing outlook for debt markets, creditors, and donors highlights the importance of

developing and maintaining a diverse range of financing sources and the importance of a resilient source of domestic savings to absorb shortfalls in external financing. However, LICs are constrained in that the scope to substitute external concessional sources with domestic savings is severely limited, due to the

<sup>18</sup> Dang, Knack and Rogers (2009); Korea is excluded as it only became a donor in 1990

state of domestic market development, or simply the lack of a viable domestic market, as in the case of small states<sup>19</sup>.

Table 1 presents a simple example of the analysis debt managers could do to determine the relative advantages or disadvantages of accessing external versus domestic debt. The analysis looks at the forward exchange rate in time (t) using both implied real interest rates and comparing it to the forward exchange rate calculated using real interest rates. This gives the debt manager two different theoretical rates. In theory, the forward exchange rate gives the rate at which there should be no preference between contracting external and domestic debt. If using the implied rates translates into a greater depreciation necessary to reach the equilibrium point, then the bias is toward external debt because under the implied scenario, the external option is cheaper than the domestic alternative. The message is twofold: First, due to concessionality, the traditional preference in LICs to maximize concessional debt is apparent, as can be seen in countries C and G. However, it is not always as large or cost effective as many assume – as illustrated in the cases of countries A and E. In some cases, despite the donor concessionality, contracting domestic debt may still be more advantageous due to highly negative real implied domestic interest rates such as is the case in countries B, D, and F. Countries with a bias toward domestic debt, or small bias toward external debt, can also use such an analysis support decisions to further develop domestic markets. The ability to carry out an analysis illustrating this tradeoff emphasizes the importance of developing the requisite analytical capacity in DeM offices.

**Table 1: Analysis of External / Domestic Debt Bias**

	Country A	Country B	Country C	Country D	Country E	Country F	Country G
Real Interest Rate	7.80%	-0.40%	0.80%	7.50%	5.59%	10.30%	-4.10%
External Real Interest Rate	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%
Implied Domestic Real Interest Rate on Gov't Debt	3.40%	-3.10%	7.00%	-0.40%	2.20%	6.40%	-3.60%
Implied External Real Interest Rate on Gov't Debt	-2.84%	0.80%	-0.10%	-0.20%	-1.80%	-0.40%	2.00%
Fwd FX Rate at Real Rates	71.87	6.61	67.76	3,913.20	1,227.57	11.14	110.44
Fwd FX Rate at Implied Rates	73.01	6.56	74.09	3,738.15	1,245.04	11.10	125.38
Percent difference in Fwd Rate (positive = external debt bias)	1.58%	-0.68%	9.34%	-4.47%	1.42%	-0.34%	13.53%

Source: Author's calculations; sample of 7 countries in which DeMPA and MTDS analysis was performed; US real interest rates and inflation rates are used for the external scenario, cross-rates are not considered in this analysis.

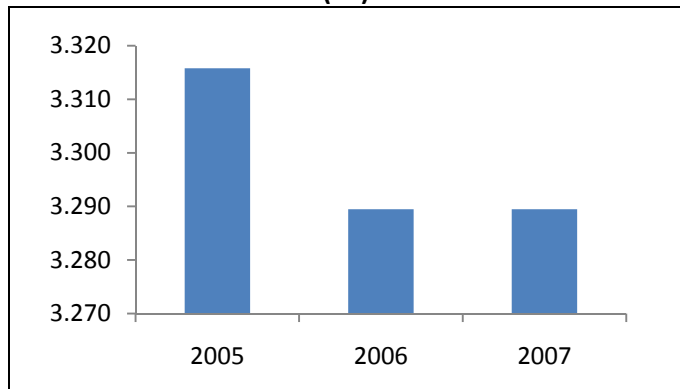
#### **IV. The Current State of DeM in LICs and Ways Forward: A Look at the DeMPA and MTDS Analytical Tools**

While debt restructuring and debt relief initiatives have greatly benefited heavily indebted countries in putting them back on the track of debt sustainability, they do not provide an answer as to the cause of debt distress, particularly in the face of crises. In 2003, the World Bank and IMF published the Public Debt Management Guidelines (2003), the purpose of which was to assist in reducing developing country vulnerability to international financial shocks. However, despite the growing recognition of the benefits of DeM, current measures of DeM performance have not shown improvement in LICs. Debt management, as measured by the Country Policy and Institutional Assessment (CPIA) Debt Policy Indicator, has actually shown marginal deterioration in recent years (See Figure 19). This is important because the quality of DeM and the probability of becoming heavily indebted are closely related in

<sup>19</sup> See Doemeland, O'Boyle, Stucka and (forthcoming, 2010) for further analysis on the evolution of domestic debt in Small States.

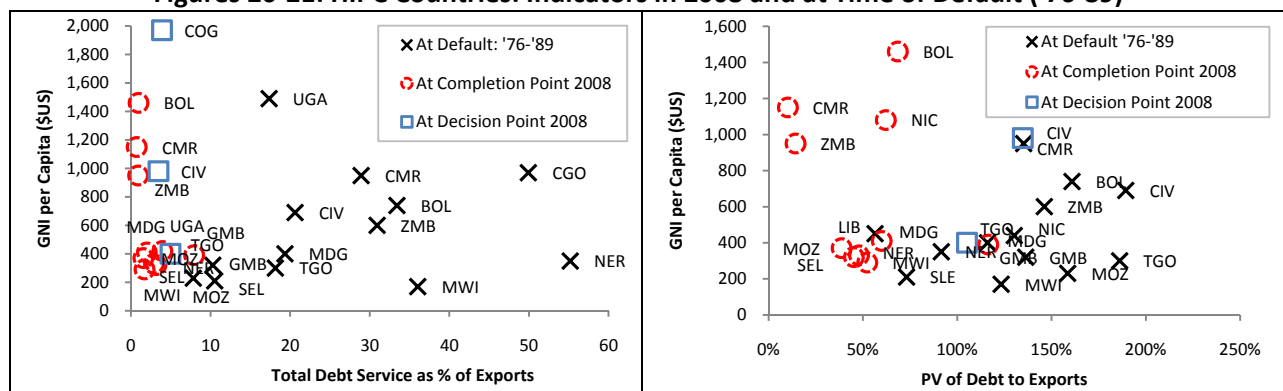
LICs.<sup>20</sup> Probit regression analysis performed on the relationship between a country's CPIA debt management score and its probability of becoming a Highly Indebted Poor Country (HIPC), showed that an increase in the quality of debt management equivalent to a one-point increase in the CPIA Debt Policy Indicator reduces the probability of a LIC having an unsustainable debt burden by 25% (see Appendix II from regression results).<sup>21</sup> These findings are reinforced by a wider body of empirical work that finds strong linkages between debt distress and institutional quality.<sup>22</sup> An important conclusion to be drawn from this analysis is that while the HIPC Initiative and the MDRI have reduced the debt burden indicators of heavily indebted poor countries (See Figures 20-21), there is a continued need to improve DeM capacity and institutions in LICs in order to reduce the risk of debt distress.

**Figure 19: Avg. CPIA Debt-Policy Indicator for LICs (#3)**



Source: World Bank

**Figures 20-21: HIPC Countries: Indicators in 2008 and at Time of Default ('76-'89)<sup>23</sup>**



Source: Author's calculations; Decision Point countries benefit from conditional interim relief, Completion Point countries benefit from irrevocable debt relief

This section introduces results from recently implemented DeMPA and MTDS analyses. The objective of these assessments is to improve DeM performance in developing countries, with the goal of lowering a country's probability of becoming heavily indebted and reducing its vulnerability to external shocks.

**a. The Debt Management Performance Assessment (DeMPA)**

The DeMPA<sup>24</sup> is a benchmarking exercise of a country's DeM strengths and weaknesses. The tool is designed to examine the institutional underpinnings of government DeM practice and procedures

<sup>20</sup> Highly indebted as measured by Heavily Indebted Poor Country Initiative (HIPC) criteria of 150 percent of the PV of debt to exports.

<sup>21</sup> World Bank (2006)

<sup>22</sup> See Kraay and Nehru (2007), and Reinhart, Rogoff, and Sevastano (2003)

<sup>23</sup> Measuring a country's external debt as a percent of exports is a way to gauge a country's capacity for repaying foreign currency denominated debt using foreign exchange earnings.

through a comprehensive set of 15 debt performance indicators that cover the full range of government DeM operations, and to assess the overall environment in which these operations are conducted. The DeMPA aims to measure government DeM performance and capture the elements recognized as being indispensable to achieving sound DeM practice. An important facet of the tool is the emphasis it puts on both DeM processes and capacity in target countries, both of which are required for effective DeM. The DeMPA emphasizes meeting the minimum requirement on all measures—a score of ‘C’. The rationale is that the minimum requirements exhibit that the country possesses the adequate institutions and capacity to carry out the essential DeM functions effectively and independently. If countries do not meet the minimum requirements, that signals an area for priority attention and reform. The results of a DeMPA can thus help guide the design of sequenced and actionable reform programs, facilitate monitoring of performance over time, and enhance donor harmonization based on a common understanding of priorities.<sup>25</sup>

Early results from the DeMPA exercise are useful in identifying priority areas for DeM reform across countries. Figures 22 and 23 display the results of 34 DeMPAs performed as of December 2009, revealing areas in which the sample countries met minimum requirements on the 15 indicators included in the analysis. The results also highlight areas in which significant progress still needs to be made. Indicators for which less than 10 countries in the sample met the minimum requirements are identified by the pink circle in figure 22. Figure 23 highlights the performance of LICs compared to their lower-middle income (LMIC) counterparts. While the patterns are broadly similar, LICs underperform LMICs across nearly every indicator.

Table 2 presents in detail the priority areas for reform, where less than 10 countries met minimum requirements. Across the sample, six key areas were highlighted as priority areas of reform: developing medium term debt management strategies; performance audits of DeM activities, processes and operations; procedures for analyzing and documenting external borrowing; improved practices in cash management; debt data administration, records and reporting; and strengthening operational risk management. The areas where 50% of the countries met the minimum requirements under the DeMPA framework related to the: legal framework, managerial structure, coordination with fiscal and monetary policy, and policies and procedures for domestic borrowing.

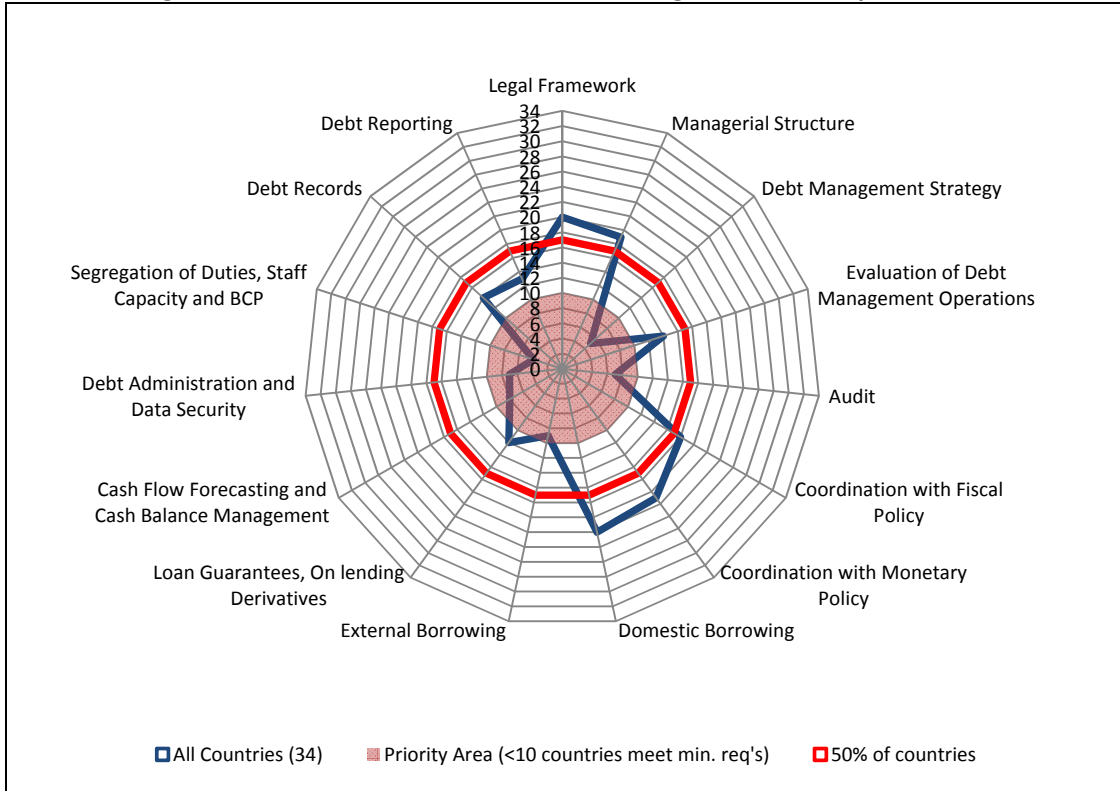
The positive results can be explained by the fact that several countries assessed during this round of the DeMPA were from regional monetary unions (as in the case of West Africa) with central banks that usually managed domestic debt. These central banks were well versed with the BIS Basel procedures and outreach activities on such issues, which explained the relatively higher scores on the monetary policy indicators and procedures for domestic borrowing. Likewise, scores on the fiscal policy interactions are explained by the fact that several countries were post HIPC and PRGF countries with effective medium term fiscal and expenditure frameworks in place. Effective coordination with macro-policies was compromised by the fact that the policies and procedures for external borrowings were

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<sup>24</sup> The DeMPA, developed by the World Bank, is a tool designed to undertake an assessment of the strengths and weaknesses in government DeM practices through a comprehensive set of 15 performance indicators spanning the full range of government DeM functions. The analysis here pertains to the results from the finalized reports of 34 assessments undertaken between November 2007 – December 2009.

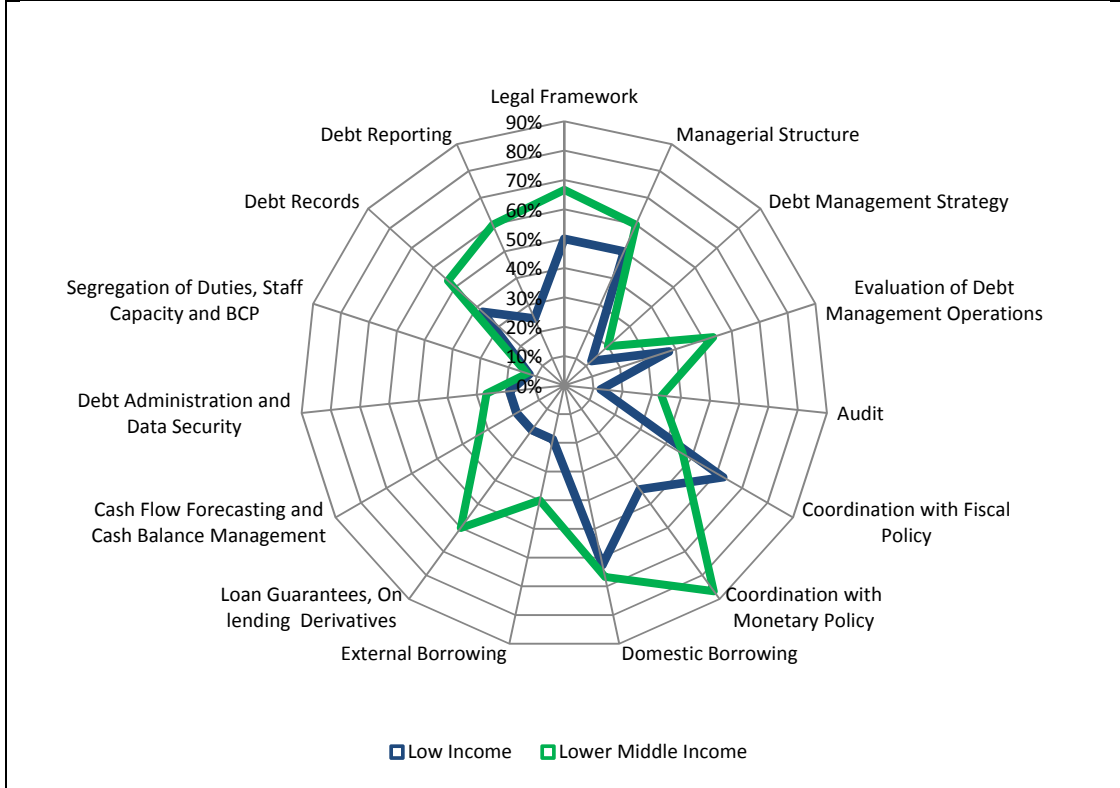
<sup>25</sup> See DeMPA Tool and Guide (2009) for a complete list of DeMPA indicators and subindicators; DeMPA material and complete list of country implementation to date can be found at [www.worldbank.org/debt](http://www.worldbank.org/debt)

**Figure 22: Number of Countries (34) Meeting Minimum Requirements**



Source: Authors' calculations

**Figure 23: Percentage of Countries Meeting Minimum Requirements, by Income Group**



Source: Authors' calculations



lacking in several respects. Scores within this indicator reflect: (i) a low degree of assessment of the most beneficial/cost-effective borrowing terms and conditions; and (ii) a general absence of documented procedures for borrowing in foreign markets. These findings are particularly worrying because a number of the countries in the sample have expressed their interest in issuing in international capital markets once the financial turbulence settles. Moreover, the fact that the majority of countries have effective legal frameworks that underpin borrowing, while positive, is negated by the lack of accountability and transparency as regular performance audits have not been undertaken.

A surprising area of deficiency was “debt records and reporting”, where despite several years of technical assistance and availability of ‘off-the-shelf’ software, less than half of the countries met with the required criteria. Anecdotal evidence suggests loss of key trained staff, lack of transfer of skills among staff, and lack of documented procedures as the main reasons for this. An important explanation relates to incentivizing staff and retaining key trained staff. In several countries, public sector policies mandate rotation of staff and better incentives offered by the private sector for skilled debt managers lure away skilled personnel. This results in loss of key skill-sets resulting in slippages that imply ‘starting all over again’. This is compounded by a fundamental weakness inherent in most debt offices, for example the lack of procedures manuals and documented work processes. Such documentation would to a great extent mitigate these gaps when key staff are transferred or leave.

Cash management was inherently rudimentary across the assessed countries. Most countries had a large number of bank accounts at times driven by donor insistence. In many countries, information on the aggregate level of cash balances was not

**Table 2: Priority Areas for Improvement: Number and Percent of Countries not Meeting Minimum Requirements**

	Number	% of Total
<b>DEBT MANAGEMENT STRATEGY</b>		
Quality of debt mng strategy documents	29	85.3%
Decision making process, updating, and publication of the debt management strategy	11	32.4%
<b>AUDIT</b>		
Frequency of internal and external audit on DM activities, policies, and operations, as well as publication of external audit	27	79.4%
Degree of commitment to address the outcomes from internal and external audits	4	11.8%
<b>EXTERNAL BORROWING</b>		
Assessment of most beneficial/cost-effective borrowing terms and conditions	25	73.5%
availability and quality of documented procedures for borrowing in foreign market	28	82.4%
Availability and degree of involvement of legal advisors	13	38.2%
<b>CASH FLOW FORECASTING AND CASH BALANCE MANAGEMENT</b>		
Effectiveness of forecasting the aggregate level of cash balances in government bank account	27	79.4%
Effectiveness of managing the aggregate level of cash balances in government bank account, including integration with the domestic debt borrowing program	25	73.5%
Where DEM entity operates its own bank accounts, the frequency of reconciliation of these bank accounts	6	17.6%
<b>DEBT ADMINISTRATION AND DATA SECURITY</b>		
availability and quality of documented procedures for the processing of debt service	26	76.5%
availability and quality of documented procedures for debt data recording and validation, as well as storing of agreements and debt administration	28	82.4%
availability and quality of documented procedures for controlling access to the central gov. debt recording. Mng. system and payment system.	26	76.5%
frequency and off-site, secure storage of debt recording/ mng. System backups.	25	73.5%
<b>SEGREGATION OF DUTIES, STAFF CAPACITY AND BCP</b>		
Segregation of Duties for some key functions, as well as the presence of a risk-monitoring and compliance function	28	82.4%
Staff capacity and human resource mng.	26	76.5%
Presence of an operational risk mng. Plan, including continuity and disaster recovery arrangements	29	85.3%

Source: Authors' calculations



available and monitored, and the cash was neither invested nor integrated within the domestic debt borrowing program. In some countries, although several government accounts were flush with liquidity, the government still borrowed, incurring interest costs while not earning any returns on its surpluses. The DeMPA findings revealed lack of analytical capacity to forecast cash flows and manage cash balances across several countries, along with the lack of single treasury accounts that could enable sovereigns to better manage costs.

Operational risk management practices were either absent across countries or, if present, inadequate.<sup>26</sup> Among the assessed countries, only one quarter of the countries met with the minimum requirements<sup>27</sup> for “debt administration and data security” and only six percent of countries demonstrated effective practice for aspects relating to “segregation of duties, staff capacity and business continuity”. The sovereign debt portfolio is usually the largest in the country and mitigating the risk of fraud, human error and market risk are critical given the high value of the financial transactions involved and the potential consequences of substantial financial loss. In addition there are also severe reputational and political risks associated with operational error or failure. Deficiencies on this front are compounded by the lack of accurate and secure debt records and transparent and regular reporting.

In general, the results point to the need for more robust analytical capacity in the assessed countries. Since the majority of the sample is LICs, this could stem from the lack of human capital to undertake the necessary analytical work. This points to the increased need for technical assistance and strengthening in these areas coupled with the procedures and institutional arrangements necessary to maintain a functioning DeM program. As the results show, areas of administration, documentation and monitoring and evaluation also need progress.

#### **b. The Medium-Term Debt Management Strategy (MTDS)**

Taking a more strategic approach to evaluating financing choices requires greater integration of debt management strategy formulation and broader macroeconomic management. As its name suggests, the MTDS<sup>28</sup> provides a framework for formulating and implementing a debt management strategy over the medium term, typically a 3 to 5 year horizon, and is primarily focused on determining the appropriate composition of the debt portfolio. MTDS is useful for illustrating a government’s cost and risk tradeoffs associated with different debt management strategies and for managing the risk exposure embedded in a debt portfolio, in particular the potential variation in debt servicing costs due to exogenous developments and their budgetary impact.

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<sup>26</sup> A factor in the comparative neglect of this area of public DeM in LICs could well be that most borrowers access multilateral and bilateral sources of finance. Operational risk is mitigated in these cases as the lending institutions have strong fiduciary safeguards in place (although this is clearly not sound practice as the borrower should be able to independently verify and manage the risk). This could well be a reason for the low priority bestowed on this critical area in several LICs and an explanatory factor for the low DeMPA scores.

<sup>27</sup> DeMPA indicators are scored on a scale from A to D. Score C or higher indicates that the minimum requirements for effective debt management under the DeMPA have been met; while score D indicates the absence of the same.

<sup>28</sup> The MTDS framework was developed jointly by the World Bank and the IMF, in consultation with other providers of assistance. It consists of a toolkit to assist governments in analyzing and developing an MTDS, taking into account macroeconomic and market environments.

The first step in developing an MTDS is to articulate the country’s DeM objective and scope.<sup>29</sup> Ideally, DeM objectives are stated in terms of meeting the government’s financing needs in accordance with the cost and risk preference of the government. Extending the maturity profile of the domestic portfolio and the development of the domestic debt market are also common secondary objectives over the medium term. However, in most of our sample countries, there is lack of clarity in the objectives for managing the debt. This is important as the MTDS operationalizes these objectives; when examining the alternative strategy options, the debt manager needs to know whether the government is willing to assume higher costs to achieve lower risk or to achieve other goals, such as the development of the domestic debt market.

In most countries in the sample, governments follow an informal debt management strategy that is not explicitly approved by the Minister of Finance, and is not based on an analysis of cost and risk. For LICs, this informal strategy has sought to maximize concessional borrowing due to the favorable interest rate and maturity profile of such borrowing. On the domestic front, the strategy has been to reduce refinancing risk, as the share of short-term debt in total domestic debt has been high in many countries. These informal strategies have typically been developed heuristically, which is important even when deriving a debt management strategy based on quantitative analysis.

**Table 3: Key Risk Indicators of Existing Debt Portfolio, 6 Sample Countries**

	A	B	C	D	E	F
Outstanding debt to GDP (%)	48%	71%	23%	33%	43%	12%
<b>Exchange rate risk</b>						
Share of domestic debt in total debt (%)	46%	42%	36%	29%	51%	58%
<b>Refinancing risk</b>						
ATM Domestic debt (Years)	1.6	3.9	1.0	5.3	4.3	2.7
ATM External debt (Years)	16.2	15.8	12.5	20.6	11.5	10.9
Share of domestic debt maturing in next 12 months in total domestic debt (%)	38%	21%	54%	12%	39%	33%
<b>Interest rate risk</b>						
Share of fixed rate debt in total debt (%)	95%	99%	79%	100%	100%	98%
ATR Total debt (Years)	8.6	10.9	8.4	14.7	7.7	5.9
Share of debt that will refix interest rate in next 12 months in total debt (%)	39%	11%	56%	9%	25%	24%

Source: Author’s calculations, sample of MTDS countries

As a reflection of the existing DeM strategy, the existing debt portfolio typically displayed an external debt composition that is dominated by official sector concessional financing in the sample of MTDS countries. However, the proportion of external to domestic debt and the relative depth and breadth of the domestic markets varied widely (see Table 3). In general terms, the countries that underwent HIPC

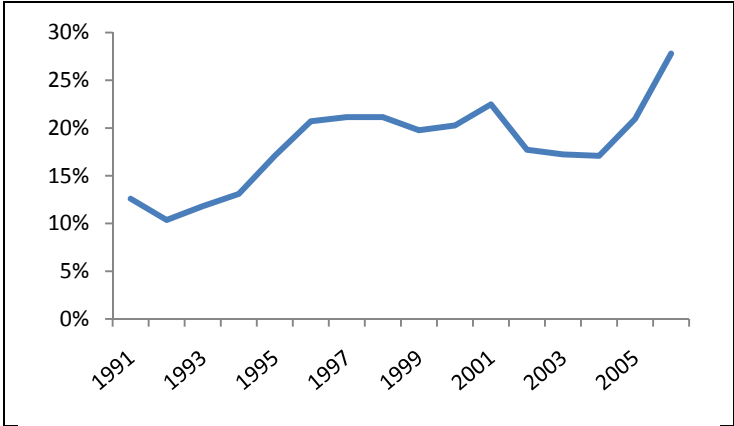
<sup>29</sup> For the framework for developing an MTDS, see “Guidance Note (GN) for Developing a Medium-Term Debt Management Strategy” (2009). It is important to note that a quantitative analysis is not necessary to have a good MTDS in place. If countries followed the GN and assessed all the various considerations to derive candidate strategies, it is possible to derive an acceptable set of strategies for final consideration by the policy makers. Even if some outcomes in terms of ranking will be obvious, it is useful to explicitly quantify the cost and risk consequences of a particular strategy to understand the opportunity cost for adopting inefficient financing strategies. It is also useful to explicitly quantify the marginal cost of developing the domestic debt market, if this is an explicit objective.

and MDRI debt relief and other external debt relief experienced an ‘instantaneous’ transformation of the portfolio composition towards a greater share of domestic debt in the total portfolio (see Figure 24). This has meant that foreign exchange exposure has been reduced dramatically, although in the majority of countries where the MTDS has been performed, the share of external debt in the total portfolio still exceeded 50 percent. However, as the share of domestic debt grew, refinancing risk has become more acute. As can be seen in Table 3, the contrast between the average time to maturity of domestic debt and external debt in all countries is stark. Going forward, the pace with which the domestic share in total debt can be increased will be determined by the extent to which the domestic debt market development agenda is advanced. The share of variable rate debt in the total debt portfolio tends to be low in LIC portfolios, pointing to minimal interest rate exposure. Overall, the analysis of the existing debt portfolio highlights the need to reduce exchange rate risk in the external debt portfolio as well as refinancing exposure in the domestic portfolio.

The MTDS is forward looking, and useful in evaluating the cost and risk consequence of new borrowing, particularly in the context of changing financial landscape facing LIC governments today. With the rapid increase in borrowing requirements in the aftermath of the current global crisis, and the need to finance scaled-up development expenditures to promote desired growth, the need to broaden and diversify sources of financing has become important to the sample governments. In most of the sample countries, concessional borrowing has been maximized, and the question remains how to finance additional needs that cannot be met through concessional loans. In some countries, non-traditional bilateral lenders are emerging as important sources of finance, although their terms vary significantly from country to country. For those in the upper end of the LIC spectrum, the possibility of becoming an IBRD blend country is being explored. In almost all of the sample MTDS countries, talks of international issuance of bonds are being discussed.

Deepening and broadening the domestic debt markets has been pursued to different degrees. In some countries the closed capital account has meant that foreign investors and foreign banks have not been competing in the domestic financial system. On the one hand, this meant that governments have been able to tap domestic savings that was captive within the borders at low or negative real interest rates. On the other hand, these markets remained shallow and the absorptive capacity for future increases in domestic debt issuance tended to be limited. Where pension reforms have not dealt with underfunded defined benefit schemes for public and private employees, not only was domestic absorptive capacity of long term debt limited, but it also represented a significant contingent liability for the government. Other countries with open capital accounts have been aggressively courting foreign investors given the overall financing gap that needs to be filled to achieve development goals. Pension and capital market reform have helped to deepen the domestic debt market contributing to growth of the domestic investor base. In one country, where inflation expectations were not anchored and there existed high levels of political uncertainty, issuance in domestic currency was not an option.

**Figure 24: Domestic Debt as a Percent of Total Public Debt in HIPC Countries**



Source: Panizza 2008; sample includes data for 21 countries

The sample countries find themselves in a difficult macroeconomic environment and have varying deficit projections that will require future borrowing. Countries in the sample have been affected by the recent financial crisis through the real sector channel. The slowdown in developed countries' economies has led to a dramatic reduction in export volumes and prices, as well as a fall in tourist receipts and remittances. While import prices have also declined, it has not been enough to compensate for the reduction in exports and external imbalances are expected to continue to deteriorate in the near term. Moreover, the available resources to finance the current account deficit have been curtailed as private capital inflows have slowed. This has exerted pressure on the exchange rate and international reserves have fallen, reducing the import cover ratio. The fiscal position has also weakened as the crisis has impacted government revenue collection together with a shortfall in privatization receipts, and expenditure has increased to counterbalance the effects of the recession. There is also significant uncertainty in some countries regarding the potential extent of contingent liabilities, particularly in the form of guarantees granted to parastatals—an important part of public debt. Donor inflows will likely also decline as a result of the worsening fiscal position of bilateral partners.

While the sample countries faced similar exogenous shocks, they varied in their preparedness to soften the effect of the crisis. For example, some of the commodities exporting countries have been implementing counter-cyclical fiscal policy, and due to the fact that they had accumulated reserves were well placed to cushion the impact of the crisis (see discussion in section II). Others had capital control policies in place, which has meant that foreign investors have been absent in the domestic financial market, insulating them from the sudden stop of capital inflow and a rush in outflow. While the global financial crisis has affected countries in the way of demand shock through the real sector channel, many countries have also experienced supply shocks, as headline inflation is often dominated by food and fuel. In this regard, some mix of nominal fixed rate debt and inflation indexed debt will help mitigate the effects of uncertainty of these events. From the perspective of the MTDS, the above analysis suggests a bias toward borrowing in domestic currency to mitigate foreign exchange exposure given external vulnerabilities and low reserve levels. Achieving low and stable inflation will be essential to the success of domestic capital market development.

Based on the analysis of the economic and financial realities, and in consultation with country authorities, baseline macroeconomic projections, pricing assumptions, shock scenarios, and alternative DeM strategies are constructed. The costs and risks of the baseline and alternative strategies are computed over a medium term time horizon.<sup>30</sup> Two measures are typically assessed: interest payment to GDP and nominal debt to GDP. The cost and risk measure in terms of interest payment to GDP highlights the vulnerability of the budget to variations in interest payment projections. In the LIC context, without exception, the interest cost of a strategy that maximizes concessional borrowing dominates other strategies, with the low cost reflecting the highly concessional interest rates and the low risk reflecting the small variations from the baseline as a result of the low absolute level of interest payment.<sup>31</sup> The strategies that pursue greater shares in domestic debt will have higher cost and risk. The higher risk of the domestic debt is explained by the fact that lower cost external financing is substituted

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<sup>30</sup> The future cash flows are generated based on the borrowing needs and baseline pricing assumptions, and this compared against the cash flows based on shock scenarios. The resultant baseline cash flow projection of say, interest payment, is defined as the cost. The difference in the cash flows between the baseline projection and under the shock scenario is defined as the risk.

<sup>31</sup> In fact, IDA and ADF loans have zero interest rate risk, as interest rates are fixed at 0.75 percent, regardless of market conditions. As a result, interest rate risk will arise only from the non-concessional borrowing after maximizing concessional debt.

by higher cost domestic financing, which leads not only to higher absolute cost levels but also risk levels. The higher cost because domestic interest rates in LICs are typically higher than in high-income countries, and higher risk because the higher absolute level of interest payment is more significantly affected by the shock scenarios.<sup>32</sup>

When comparisons are made between external and domestic market borrowing strategies, the outcome is more nuanced. While typically the interest rates associated with external borrowing will have lower coupon rates, baseline projection of the exchange rate may be such that the interest payments on the depreciated (i.e., higher domestic currency equivalent) principal value can be higher than the interest payments on domestic debt, rendering domestic debt effectively cheaper than external debt. Similarly, risk may be higher for external debt if the deviation in interest cost on the depreciated principal is greater than the deviation on the domestic interest cost as a result of interest rate shocks, or as a result of a depreciation shock. Cost and risk measured in terms of debt to GDP, however, displayed a range of results among the sample countries. This measure assesses the vulnerability in terms of debt sustainability created by the path taken by alternative debt management strategies. In countries where the domestic debt market was severely constrained and commanded a high premium, external concessional borrowing continued to outperform domestic borrowing in terms of cost and risk. However, where interest rates in the domestic debt market were more moderate, and assumptions projected an important baseline exchange rate depreciation, the results showed a trade-off between a strategy that had a higher share in domestic debt (with higher cost and lower risk) and a strategy that had a higher share in external debt (with lower cost and higher risk). Without exception, exchange rate shocks dominate the risk outcome (relative to interest rate shocks) for the debt-to-GDP measure, as this shock affects not only interest cost but also the principal valuation.

Thus, conflicting results could emerge using different cost-risk measures. The results of the MTDS are highly country specific, and depend on the characteristics of the existing debt portfolio, the assumptions about baseline future exchange and interest rate projections, as well as shock scenarios and the macroeconomic projections that drive the pricing assumptions. In this regard, monitoring other risk indicators is crucial. For example, it is difficult to gauge the implications of refinancing risk from the cost and risk analysis. Closely examining and comparing the principal repayment schedule at the end of the time horizon for different debt management strategies, as well as comparing the average time to maturity and the percentage of debt maturing in a particular year, may highlight an uncomfortable level of refinancing risk that may have resulted from a strategy that appeared to be attractive from a cost-risk perspective.

As discussed, the main risk to debt sustainability arising from debt composition derives from exchange rate risk. However, given the relatively short maturities of domestic debt vis-à-vis external debt, there is a need for an aggressive domestic issuance strategy just to maintain the current domestic to external currency mix in the portfolio. To illustrate, Table 4 exhibits the domestic and external currency composition of the existing debt portfolio for a sample of 5 countries. Without taking into account new debt, if this debt were allowed to mature according to its principal repayment schedule, after three years, external debt will have barely matured, with 82-99 percent of the original debt still outstanding,

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<sup>32</sup> Suppose a 2 percent external loan coming due is replaced by a 10 percent domestic loan. This substitution will result in an increase in interest cost of 8 percent. Domestic debt will also exhibit higher risk because of a) the higher absolute level of interest payments, and b) the higher interest rate shock that is applied to domestic interest rate relative to foreign interest rate (say a 2 percent shock for domestic interest rate and a 1 percent shock for foreign interest rate).

whereas, the domestic debt will have matured substantially, with a range of 0-60 percent of the original debt still outstanding after three years. In total, after three years, 63-85 percent of the original debt is still outstanding. This measure, together with indicators such as average time to maturity, indicates the length of time it takes to transform the existing debt portfolio. The fact that it takes longer to transform a portfolio can be advantageous as it means that the portfolio is subject to lower refinancing risk. On the other hand, if the existing debt is risky, for example if it is heavily foreign currency denominated, then it also implies the country will have to live with this risk for an extended period. In the absence of swaps, changing the debt composition will only be achieved marginally over time, as existing debt matures and new debt is contracted to finance the budget deficit.

**Table 4: Percentage of Current External and Domestic Debt Still Outstanding After Three-Year Period – MTDS Countries**

<b>Country:</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>
External	99%	91%	82%	96%	84%
Domestic	39%	54%	0%	59%	44%

Source: Author's calculations, sample of MTDS countries

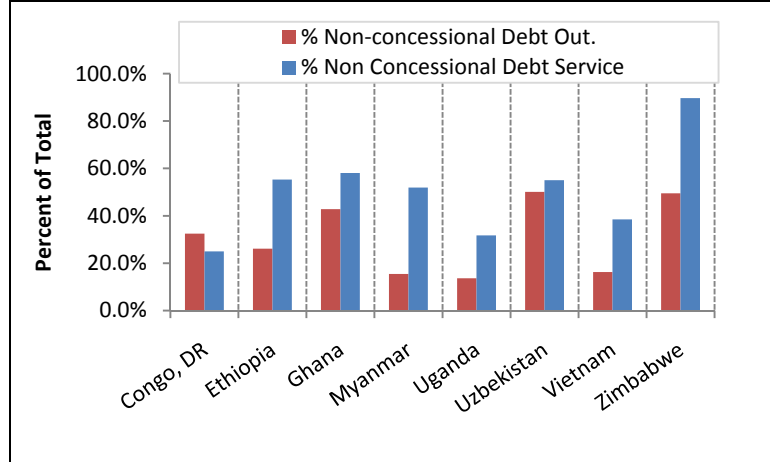
The implication of this analysis, in an environment of increasing deficits and infrastructure investment needs that will raise the new financing requirement, is that debt structures can quickly evolve and unless a prudent debt management strategy is in place, it can quickly deteriorate and become more risky. In this regard, as countries increasingly evaluate non-concessional sources of financing including the option of issuance in the international capital market, the importance of assessing the risk consequence of such borrowing on the overall portfolio becomes more acute.

### **c. Non-Concessional Borrowing**

Many LICs have as a goal to reduce 'donor dependence', as donor financing can be volatile and unpredictable, and the use of funds is often tied to specific project-related expenditures. There are also high transaction costs of doing business with multilateral institutions. But moving instead to the international capital markets also adds to financing volatility, while increasing the cost. Turning to such non-concessional sources also does not address exchange rate and refinancing risks, and is subject to international credit cycles. Moving to domestic financing has merit in that it eliminates exchange rate risk, although it can add to refinancing risk and increases interest cost. For some small and low income economies, there just simply may not be the investor base to support a viable government bond market. Therefore close coordination of the MTDS work and work on financial sector development has been useful in making a more realistic assessment of the options for domestic financing.

From one perspective, given the large social and infrastructure needs in many countries, additional inflows can be a welcome development, particularly where domestic resources are insufficient. Access to new sources of financing can also improve the scope for actively managing risk in the public debt portfolio, for example by offering greater scope to change the currency exposure of the portfolio so it is more tailored to the country's export revenue streams. However, the diversification of financing sources is likely to be achieved at the expense of higher debt servicing costs, and potentially increased refinancing and interest rate risks. Greater foreign investor interest also increases the scope for domestic debt to play a more active role in the portfolio since increased availability of resources in domestic currency can facilitate the extension of the tenor of domestic debt.

**Figure 25: Non-Concessional Debt and Debt Service, 2007**



Source: World Bank DDP

amount of non-concessional borrowing can significantly impact debt servicing costs. Figure 25 presents debt service amount for seven LICs, of which DR Congo, Ethiopia, Ghana, and Uganda have already benefitted from debt relief. Despite the relatively modest amount of non-concessional debt stock in 2007, debt service on non-concessional debt in several countries represented a large portion of total debt service. Ethiopia, Ghana, Myanmar, Uzbekistan and Zimbabwe were all in a situation where non-concessional debt-service made up the majority of total debt service.

The availability of non-concessional financing has increased the urgency to build capacity to develop and implement credible DeM strategies, so that governments can take informed borrowing decisions to manage their debt portfolios.

## V. Conclusion

Sound DeM practices play a critical role in the prevention and mitigation of financial crises.<sup>33</sup> While this is true in both LICs and MICs, LICs face unique challenges. Their relative lack of economic diversification and the shallowness of their financial markets make them particularly vulnerable to external shocks. Second, while more vulnerable, their smaller endowments of institutional and human capital undermine proper crisis preparedness and response. While these vulnerabilities are not new, many LICs still lack a coherent framework to improve DeM capacity. Therefore, first and foremost in addressing the overall DeM performance is an assessment of strengths and weaknesses in a country’s current framework, as adequate institutional and analytical capacity is critical in managing what are increasingly complex public debt portfolios. As the borrowing environment confronting these countries has changed and become more complex, access to concessionary finance is limited, and developing countries that access domestic markets or external commercial borrowing continue to face vulnerabilities.

The DeMPA was designed specifically to identify these weaknesses and provide a benchmark for reform. A preliminary assessment of its results shows that developing countries need to strengthen crucial areas of DeM—particularly analytical capacity to assess cost-risks tradeoffs in their public debt portfolios. The MTDS is an important tool in addressing this issue. As demonstrated, an effective MTDS illustrates the

<sup>33</sup> “Guidelines for Public Debt Management.” World Bank and IMF. Washington, DC; 2003.

cost-risk tradeoffs to a variety of strategies within a country's DeM framework. Minimizing these costs and risks, while providing flexibility to achieve long-term objectives, will lead to stronger public balance sheets and increased resilience against future shocks.

It remains to be seen whether vulnerable LICs will be able to effectively manage their debt given the uncertainty of the current environment and the evolution of debt levels and interest rates worldwide. However, while this and many variables surrounding the outcome of the financial crisis remain unknown, one concrete lesson to be drawn is that strengthening DeM capacity in developing countries, particularly LICs, will be an indispensable tool in preventing and mitigating crisis effects now and in the future.



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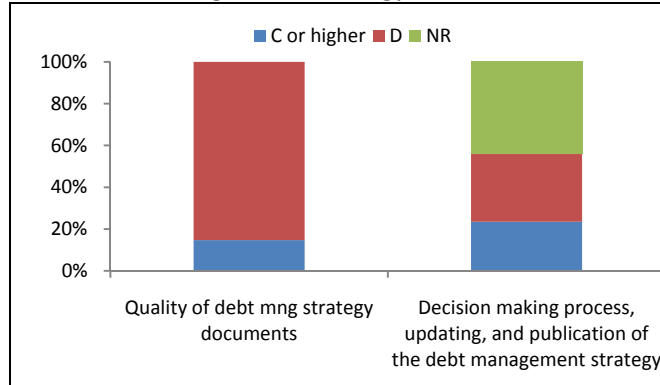
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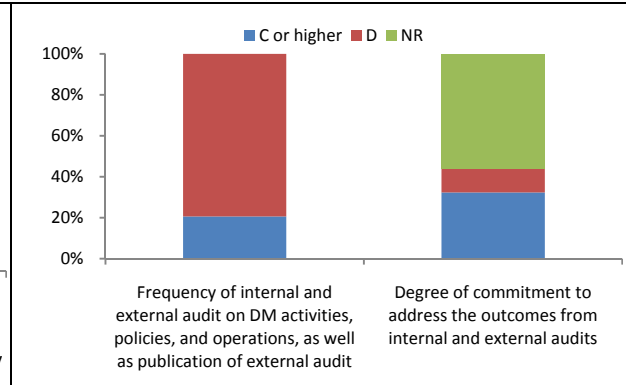
## Appendix 1 – DeMPA results of the problem areas, 34 countries

### Debt Management Strategy (% of countries)



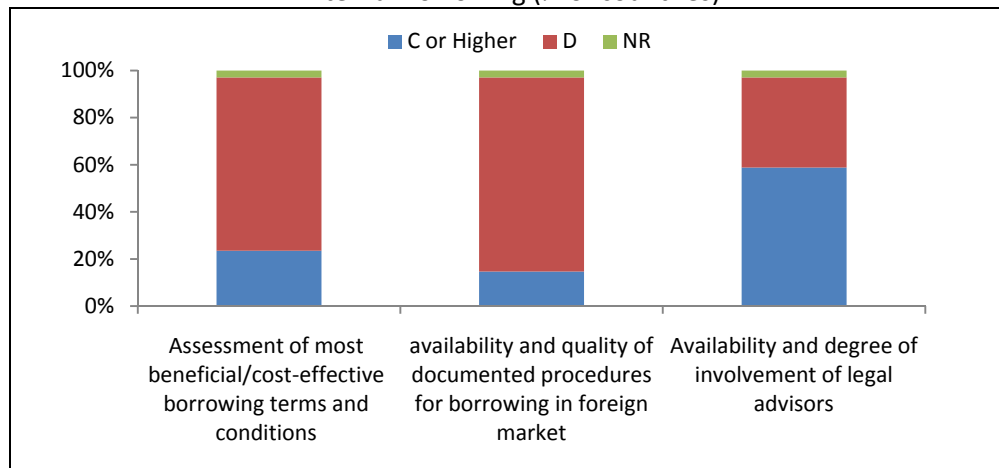
Source: World Bank

### Audit (% of countries)



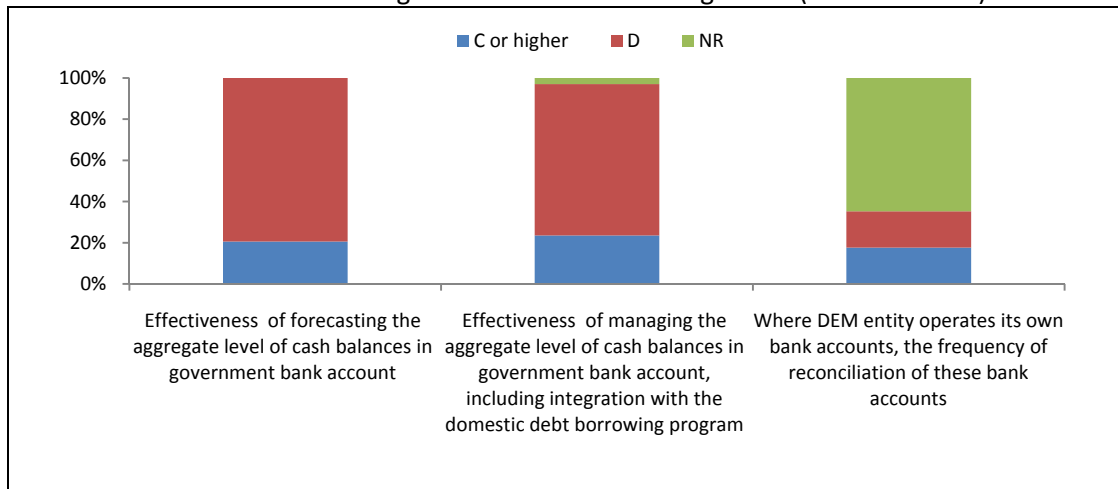
Source: World Bank

### External Borrowing (% of countries)



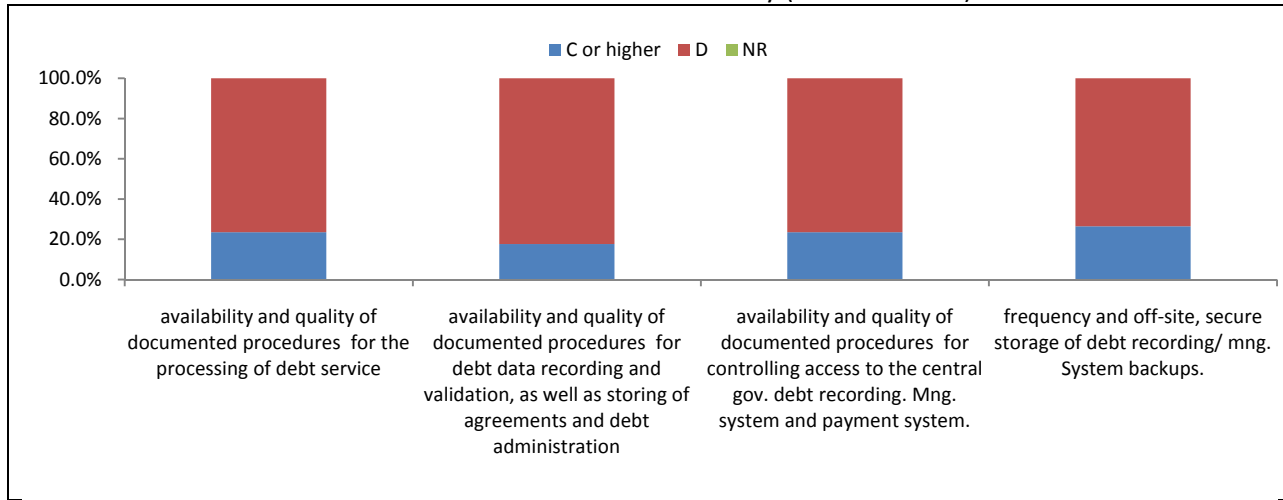
Source: World Bank

### Cash Flow Forecasting and Cash Balance Management (% of countries)



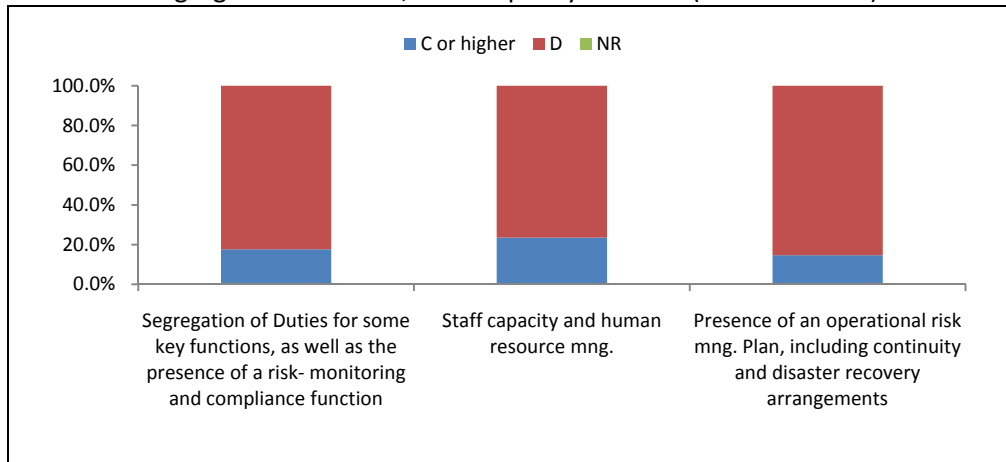
Source: World Bank

### Debt Administration and Data Security (% of countries)



Source: World Bank

### Segregation of Duties, Staff Capacity and BCP (% of countries)



Source: World Bank

## Appendix II – Results of Probit Analysis on quality of DeM and HIPC eligibility

### Results of Probit Regression Analysis: Quality of Debt Management and HIPC Eligibility

	I	II	III	IV	V	VI	VII
NPV debt / GDP	0.23*** 2.56	0.19*** 2.85	0.28*** 2.64	0.12** 2.09	0.19*** 2.89	0.11*** 2.83	0.61*** 3.03
Income	-0.28*** 5.74	-0.24*** 5.51	-0.30*** 5.73	-0.22*** 5.80	-0.24*** 5.41	-0.25*** 4.59	-0.43*** 5.25
CPIADM		-0.32*** 2.65		-0.25** 2.51	-0.32** 2.54	-0.48*** 3.60	-0.71*** 3.41
CPIA			0.04 0.72				
Growth 85-95				-0.38*** 2.89			
Growth vol 85-95					-0.12 0.08		
Obs	102	102	100	102	102	101	82
Pseudo-R2	0.56	0.60	0.57	0.66	0.60	0.56	0.60
Wald	38.12	36.38	40.28	36.51	36.80	21.92	37.94
Year	1995	1995	1995	1995	1995	1990	1985

Source: Public Debt Management in LICs, World Bank 2006