In the wake of the financial crisis of 2008–09, a number of governments in both developed and developing countries undertook massive fiscal and monetary interventions in order to stave off a systemwide financial and economic collapse. The magnitude of the public liabilities incurred as a result of this unprecedented, albeit necessary, government action and the consequences of exiting from the projected high-debt scenario have themselves become a major source of concern about a future crisis (Braga 2010). Indeed, history has shown that public borrowing accelerates markedly and systematically ahead of a sovereign debt crisis (Reinhart and Rogoff 2010). The International Monetary Fund (IMF) projects that government debt to GDP ratios will rise to 85 percent in Group of 20 (G-20) countries by 2014 as a result of the crisis, up from 62 percent in 2007 (IMF 2009).¹ However, G-20 countries, with stronger institutions and policies, are better equipped to deal with pressures of this kind. Among more vulnerable developing countries, especially low-income, the ability to manage their public debt burdens through a crisis of this magnitude is far from assured.
Empirical evidence supports the view that strong public debt management institutions and policies have played a critical role in mitigating the effects of the financial crisis in middle-income countries (see chapter 16). To some extent, the same could be said for low-income countries, albeit for different reasons. In middle-income countries, positive policy action led to risk reductions in their debt portfolios in the years leading up to the crisis. In low-income countries, creditor relations have historically been dominated by the official sector on the external front. In many (but not all) cases, a captive investor base on the domestic front helped prevent debt portfolios from becoming sources of financial vulnerability. The current environment will be particularly challenging for debt managers in low-income countries because 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. The new challenges that have emerged since 2008 call for a reevaluation of debt management strategies, focusing on the assessment and mitigation of potential risk.

Although the acute phase of the crisis is over, many pitfalls remain, foremost among them the potential for a new sovereign debt crisis (figure 17.1). The precrisis picture in low-income countries was one of optimism. Debt relief through the Heavily Indebted Poor Countries (HIPC) Initiative and the

![Figure 17.1 Number of Sovereign Foreign Currency Upgrades, Downgrades, and Outlooks, 2004–10](image)

*Source: Standard & Poor’s 2010.*
Multilateral Debt Relief Initiative (MDRI) gave countries new fiscal space and renewed the potential for economic growth, which induced new creditors with more stringent terms to engage with low-income countries in both international and domestic markets.

As conditions in the international capital markets deteriorated, many such plans have been put on hold, as a new reality has set in. The longer-term trend shows declining access to donor funding as low-income countries move up the development ladder. Flows may be drying up even faster than previously projected given the severity of the financial crisis on sovereign balance sheets in donor countries. Such a shift in donor flows can accelerate the need for low-income countries 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.

Despite recognition of the need for such institutional strengthening, debt management performance in low-income countries has stagnated or even deteriorated in recent years, as measured by the CPIA Debt Policy Indicator (World Bank 2006). In light of this, it is important to assess the priority areas for improving debt management performance in a way that is tailored to country-specific circumstances and stages of development. For countries without the necessary legal and institutional framework to support effective debt management, the focus must be on identifying and addressing these weaknesses. For countries that have the institutional underpinnings of a functional debt management framework in place, the focus should be on building capacity to develop medium- to long-term debt management strategies that examine the cost-risk trade-offs in order to safeguard future debt sustainability. This is particularly important in preparing for future crises, as low-income countries gradually accumulate increasingly complex public debt portfolios that combine a wider array of financial instruments from both public and private creditors.

It is in this context that this chapter examines the application of two global public goods in low-income countries, the Debt Management Performance Assessment (DeMPA) and the Medium-Term Debt Management Strategy (MTDS) tools. Drawing upon results from the application of these tools between 2007 and 2009 provides valuable information to policy makers and other stakeholders on the development of sound public debt management practices and analytical capacity.

A 2006 World Bank/IMF analysis of public debt management in low-income countries provided the empirical justification for the need to improve debt management capacity in low-income countries (World Bank and IMF 2006). It showed that debt management policy and high indebtedness are significantly related in low-income countries. This chapter builds on those results by identifying specific shortcomings in debt management in low-income countries and providing the basis for targeted reform programs to increase debt management performance.
A large body of literature exists on the importance of debt management in developing countries as well as on the links between debt management and financial crises (see Anderson and Togo 2009; Jaimovich and Panizza 2006; Melecky 2007; Panizza 2008; World Bank 2009a; World Bank and IMF 2003). This chapter builds on this literature by looking at new data that identify vulnerabilities and highlights areas for improvement.

The chapter is organized as follows. The next section gives a brief overview of the crisis, paying particular attention to its effects on low-income countries. The second section looks at the unique challenges developing countries, particularly low-income countries, face with regard to debt management. The third section focuses on the results of the DeMPA and MTDS tools and what they say about the current state of debt management in low-income countries. It identifies priority areas for improvement and highlights potential pitfalls in the current environment. The last section provides some concluding remarks.

**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 have been diverse, a function of both developmental and structural factors. Many Eastern European economies that were highly integrated with and reliant on Western European capital markets were hard hit by financial contagion and the sudden stop in capital flows. In contrast, low-income countries, with financial sectors that were largely not integrated with the global markets, were insulated from the financial market contagion that spread from developed economies. They were, however, severely affected by the decline in exports and falling commodity prices. As a result, developing countries now face a new and more precarious postcrisis environment, the major consequence of which will be potential reductions in trend growth over the medium term (figure 17.2).

With the exception of some large emerging markets that came into the crises with strong fundamentals and large external surpluses, capital inflows have declined sharply for most developing countries. For example, although China, India, and Indonesia have recovered to their precrisis levels, the rest of developing Asia has not (figure 17.3). Similarly, Central and Eastern Europe, which has larger current account deficits and greater reliance on foreign capital, saw private flows decline to below 2005 levels in 2009 (figure 17.4).

Despite these declines, the financing needs of developing countries have not fallen (figure 17.5). Overall, net private capital flows to developing countries in 2009 are estimated to have fallen by $795 billion relative to their 2007 peak; total external financing needs, measured by current account deficits and maturing private debt, are $1.2 trillion. Low-income
countries will suffer the most from this decline, as their already low 2.6 percent of total private capital flows is projected to fall to almost zero in 2010. Although small in absolute terms, these flows represent a significant share of national income, investment, and budgetary support. Their loss will have a severe impact on the ability of low-income countries to meet their financing needs in the short to medium term (World Bank 2010a). Countries eligible for soft loans and grants from the International Development Association (IDA) may require as much as $35 billion–$50 billion in additional funding in 2010 just to maintain 2008 program levels, on top of the resources necessary to fund additional demands created by the crisis (World Bank and IMF 2009c).

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 growing participation by foreign banks in domestic financial systems supported the rapid rise in domestic financial intermediation. Indeed, the expansion in domestic credit in
developing countries was directly related to GDP growth and the extent to which foreign banks increased their market shares (figure 17.6). Foreign direct investment (FDI) is usually less volatile and should be less affected by the crisis than debt or equity flows. However, parent firms will face higher capital costs, which 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, particularly in low-income countries (figure 17.7). Remittances, another important and resilient source of capital for low-income countries, have declined sharply (figure 17.8) and are not projected to regain their precrisis levels until 2012 (Mohapatra and Ratha 2010).

The longer-run effects of the decline in capital flows are serious for low-income countries, particularly because deficiencies in domestic intermediation systems are likely to prevent them from compensating for a reduced foreign presence. However, low-income countries are not without a potential remedy, particularly regarding 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 (World Bank 2010a).
Improvements in policies and institutions governing the financial sector can thus significantly boost 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.3

Faced with a less active external financing system, the authorities in developing countries must take steps to improve public debt management practices, including efforts to develop 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 and increase cost efficiency, mitigating the effects of less favorable external financial conditions. Such improvements will also help reduce vulnerability to future crises.

**Figure 17.4** Private Capital Flows to Central and Eastern Europe, 2005–09

![Private Capital Flows to Central and Eastern Europe, 2005–09](image)

*Source: IMF 2010a.*

**Debt Management, the Crisis, and Low-Income Countries**

Effective debt management covers such issues as ensuring effective policies and procedures for undertaking borrowings through external and domestic markets; designing and implementing a medium-term debt management
strategy; and putting in place effective systems for administration, analysis, and reporting of debt data (World Bank 2009a, 2009b). In times of crisis, sovereigns’ access to resources, particularly through external markets, is stressed. There is thus an urgent need for prudent and effective debt management strategies, policies, and procedures to stave off and mitigate vulnerabilities at such times.

Low-income countries face limited choices with regard to debt management. Their internal challenges lie in developing adequate capacity to manage public debt effectively, particularly in establishing institutional and governance arrangements and developing analytical capabilities. Their choices are significantly more limited with respect to the sources and instruments they can access to meet their financing needs (figure 17.9).

The creditor composition and concessionality of the debt portfolio also differ markedly in low- and middle-income countries (figure 17.10). Multilateral and official bilateral creditors make up more than 95 percent of the public and publicly guaranteed external debt held by low-income
Figure 17.6 Local Currency Lending as a Percentage of Total Lending by Foreign Banks, 1999–2008

Source: IMF 2010b.

Figure 17.7 FDI Flows to Developing Countries, 2008–09

countries. More than 90 percent of this debt is contracted on concessional terms, with below-market interest rates and long maturity periods. Largely fixed-rate concessional sources of funding limit exposure to interest rate risk, but the consequent exposure to currency risk has been significant. By contrast, one-third of the public external debt stock in middle-income countries is made up of commercial credits. The combination of commercial debt and nonconcessional financing provided by bilateral and multilateral institutions implies that more than half of middle-income country debt is contracted on nonconcessional terms.

Traditionally, the typical strategy for low-income countries has been to maximize concessional debt. Such a strategy minimizes debt-servicing costs, leading to a lower risk of debt distress and improved debt sustainability. It also results in significant exchange rate risk (figure 17.11). In many low-income countries, the mix of external and domestic financing is not a choice but rather 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. The characteristics of donor funding can be highly advantageous, but when the mix of external and domestic debt financing is not a domestic policy choice, the scope for
effective and independent policy making is constrained. Focusing solely 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 transaction costs, to the debt manager. This alternative is especially important when access to external financing has been reduced.

The current environment is particularly challenging for debt managers in low-income countries because the financing options that were available in 2007 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 low-income countries.

Aid flows from crisis-affected donor countries can decrease significantly for a decade or more postcrisis (figure 17.12). This volatile and changing

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**Figure 17.9 Composition of External Public and Publicly Guaranteed Debt, by Income Level, 2009**

- **a. Low-income countries**
  - Loans, 92.3%
  - Other liabilities, 7.7%
- **b. Low-middle-income countries**
  - Loans, 61.5%
  - Currency and deposits, 10.2%
  - Trade credits, 7.3%
  - Other liabilities, 3.0%
  - Debt securities, 14.1%
- **c. Upper-middle-income countries**
  - Loans, 49.4%
  - Debt securities, 33.2%
  - Currency and deposits, 6.2%
  - Trade credits, 7.3%
  - Other liabilities, 3.9%
- **b. High-income (OECD) countries**
  - Loans, 23.3%
  - Debt securities, 48.9%
  - Currency and deposits, 24.5%
  - Trade credits, 1.1%
  - Other liabilities, 2.2%


*Note: OECD = Organisation for Economic Co-operation and Development.*
outlook for debt markets, creditors, and donors highlights the importance of developing and maintaining a diverse range of financing sources and a resilient source of domestic savings to absorb shortfalls in external financing. Low-income countries are constrained, however, in that the scope to substitute external concessional sources with domestic savings is severely

**Figure 17.10 Creditor Composition and Concessionality of External Public and Publicly Guaranteed Debt in Low- and Middle-Income Countries, 2008**

**a. Creditor composition in low-income countries**
- Private, 3.6%
- Bilateral, 34.0%
- Multilateral, 62.4%

**b. Creditor composition in middle-income countries**
- Private, 27.2%
- Bilateral, 33.3%
- Multilateral, 39.4%

**c. Concessionality in low-income countries**
- Concessional, 90.3%
- Nonconcessional, 9.7%

**d. Concessionality in middle-income countries**
- Concessional, 53.6%
- Nonconcessional, 46.4%

limited because of the state of domestic market development or the lack of a viable domestic market, as in the case of small states. (See chapter 8 for an analysis of the evolution of domestic debt in small states.)

Debt managers could undertake a simple analysis to determine the relative advantages and disadvantages of accessing external versus domestic debt. The analysis compares the forward exchange rate at time $t$ using implied real interest rates with the forward exchange rate using real interest rates (table 17.1). This analysis 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 or domestic debt. If using the implied rates translates into a larger depreciation needed to reach the equilibrium point, the bias is toward external debt because under the implied scenario, the external option is less expensive than the domestic alternative. The message is twofold. First, because of concessionality, low-income countries prefer to maximize concessional debt (see countries C and G). However, the bias toward concessional debt is not always as large and such debt is not as cost-effective as many assume (see countries A and E). In some cases, despite donor concessionality, contracting domestic
debt may be more advantageous because of negative real implied domestic interest rates (see countries B, D, and F). Countries with a bias toward domestic debt, or a mild bias toward external debt, can also use such an analysis to support decisions to further develop domestic markets. Identification of this trade-off highlights the importance of developing the requisite analytical capacity in debt management offices.

The DeMPA and MTDS Analytical Tools

Although 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 address the cause of debt distress, particularly in the face of crises. In 2003 the World Bank and IMF published Guidelines for Public Debt Management, to help reduce developing-country vulnerability to international financial shocks. Despite growing recognition of the benefits of debt management, measures of debt management performance have not shown improvement in low-income countries. In fact, debt management, as measured by the Country Policy and Institutional Assessment (CPIA) Debt Policy Indicator, has shown marginal deterioration in recent years, falling from 3.32 in 2005 to 3.28 in 2006.
Table 17.1 Analysis of External/Domestic Debt Bias  
*(percent, except where otherwise indicated)*

<table>
<thead>
<tr>
<th>Variable</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
</tr>
</thead>
<tbody>
<tr>
<td>Real interest rate</td>
<td>7.80</td>
<td>−0.40</td>
<td>0.80</td>
<td>7.50</td>
<td>5.59</td>
<td>10.30</td>
<td>−4.10</td>
</tr>
<tr>
<td>External real interest rate</td>
<td>2.90</td>
<td>2.90</td>
<td>2.90</td>
<td>2.90</td>
<td>2.90</td>
<td>2.90</td>
<td>2.90</td>
</tr>
<tr>
<td>Implied domestic real interest rate on govern.</td>
<td>3.40</td>
<td>−3.10</td>
<td>7.00</td>
<td>−0.40</td>
<td>2.20</td>
<td>6.40</td>
<td>−3.60</td>
</tr>
<tr>
<td>Implied external real interest rate on govern.</td>
<td>−2.84</td>
<td>0.80</td>
<td>−0.10</td>
<td>−0.20</td>
<td>−1.80</td>
<td>−0.40</td>
<td>2.00</td>
</tr>
<tr>
<td>Forward foreign exchange rate at real rates (LCU/$)</td>
<td>71.87</td>
<td>6.61</td>
<td>67.76</td>
<td>3,913.20</td>
<td>1,227.57</td>
<td>11.14</td>
<td>110.44</td>
</tr>
<tr>
<td>Forward foreign exchange at implied rates (LCU/$)</td>
<td>73.01</td>
<td>6.56</td>
<td>74.09</td>
<td>3,738.15</td>
<td>1,245.04</td>
<td>11.10</td>
<td>125.38</td>
</tr>
<tr>
<td>Percentage point difference in forward rate (positive = external debt bias)</td>
<td>1.58</td>
<td>−0.68</td>
<td>9.34</td>
<td>−4.47</td>
<td>1.42</td>
<td>−0.34</td>
<td>13.53</td>
</tr>
</tbody>
</table>

*Source:* Authors’ calculations based on sample of seven countries in which DeMPA and MTDS analysis was performed. U.S. real interest rates and inflation rates are used for the external scenario; cross-rates are not considered.

*Note:* LCU = local currency unit.
and 2007. This deterioration is important because the quality of debt management and the probability of becoming heavily indebted (that is, having a present value of debt to exports ratio of 150 percent) are closely related in low-income countries. Probit regression analysis of the relationship between a country’s CPIA debt management score and its probability of becoming a HIPC shows 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 low-income country having an unsustainable debt burden by 25 percent (see annex table 17A.1 for probit results) (World Bank 2006). These finding are reinforced by a wider body of empirical work that finds strong linkages between debt distress and institutional quality (Kraay and Nehru 2006; Reinhart, Rogoff, and Sevastano 2003). An important conclusion from this analysis is that although the HIPC Initiative and the MDRI have reduced debt burden indicators, there is a continued need to improve debt management capacity and institutions in low-income countries in order to reduce the risk of debt distress.

The DeMPA

The DeMPA is a benchmarking exercise that assesses a country’s debt management strengths and weaknesses. It examines the institutional underpinnings of government debt management practice and procedures through a comprehensive set of 15 debt performance indicators that cover the full range of government debt management operations. It also assesses the overall environment in which these operations are conducted. The DeMPA aims to measure government debt management performance and capture the elements recognized as indispensable to achieving sound debt management practice. An important facet of the tool is the emphasis it puts on debt management processes and capacity, both of which are required for effective debt management.

The DeMPA emphasizes meeting the minimum requirements on all measures (that is, receiving scores of at least C).4 Doing so indicates that a country possesses the adequate institutions and capacity to carry out essential debt management functions effectively. Failure to meet the minimum requirements signals an area for priority attention and reform. The results of a DeMPA can help guide the design of sequenced and actionable reform programs, facilitate the monitoring of performance over time, and enhance donor harmonization based on a common understanding of priorities.5

Early results from the DeMPA exercise are useful in identifying priority areas for debt management reform across countries.6 Indicators for which fewer than 10 countries in the sample met the minimum requirements are identified by the inner circle in figure 17.13. Low-income countries underperform lower-middle-income countries across nearly every indicator, although the patterns for the two groups of countries are broadly similar (figure 17.14).
Priority areas for reform are areas in which fewer than 10 countries met minimum requirements (table 17.2). See annex figure 17A.1 for a detailed breakdown of priority areas. They include the following areas:

- Medium-term debt management strategies
- Performance audits of debt management activities, processes, and operations
- Procedures for analyzing and documenting external borrowing
- Cash management practices
- Administration, record keeping, and reporting of debt data
- Operational risk management.

Areas in which half of the countries met the minimum requirements under the DeMPA framework relate 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, where central banks usually managed domestic debt. These central banks were well versed in the Bank for International Settlements procedures and outreach activities on such issues, which explained the higher scores on monetary policy indicators and procedures for domestic borrowing. Scores on the fiscal policy interactions are explained by the fact that several countries were post–HIPC Initiative and Poverty Reduction and Growth Facility (PRGF) countries, with effective medium-term fiscal and expenditure frameworks in place.

Effective coordination with macroeconomic policies was compromised by the fact that the policies and procedures for external borrowings were lacking in several respects. Scores within this indicator reflect a low degree of assessment of the most beneficial/cost-effective borrowing terms and conditions and a general absence of documented procedures for borrowing in foreign markets. These findings are particularly worrisome because a number of the countries in the sample have expressed interest in issuing in international capital markets once the financial turbulence settles. Most countries have effective legal frameworks that underpin borrowing, but
### Table 17.2 Priority Areas for Improvement

<table>
<thead>
<tr>
<th>Area</th>
<th>Number of countries not meeting minimum requirements</th>
<th>Percentage of total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Debt management strategy</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quality of debt management strategy documents</td>
<td>29</td>
<td>85.3</td>
</tr>
<tr>
<td>Decision-making process, updating, and publication of debt management strategy</td>
<td>11</td>
<td>32.4</td>
</tr>
<tr>
<td><strong>Audit</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frequency of internal and external audit on debt management activities, policies, and operations, as well as publication of external audit</td>
<td>27</td>
<td>79.4</td>
</tr>
<tr>
<td>Degree of commitment to address outcomes of internal and external audits</td>
<td>4</td>
<td>11.8</td>
</tr>
<tr>
<td><strong>External borrowing</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assessment of most beneficial/cost-effective borrowing terms and conditions</td>
<td>25</td>
<td>73.5</td>
</tr>
<tr>
<td>Availability and quality of documented procedures for borrowing in foreign markets</td>
<td>28</td>
<td>82.4</td>
</tr>
<tr>
<td>Availability and degree of involvement of legal advisers</td>
<td>13</td>
<td>38.2</td>
</tr>
<tr>
<td><strong>Cash flow forecasting and cash balance management</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Effectiveness of forecasting aggregate level of cash balances in government bank account</td>
<td>27</td>
<td>79.4</td>
</tr>
<tr>
<td>Effectiveness of managing aggregate level of cash balances in government bank account, including integration with domestic borrowing program</td>
<td>25</td>
<td>73.5</td>
</tr>
<tr>
<td>Where debt management entity operates its own bank accounts, frequency of reconciliation of these bank accounts</td>
<td>6</td>
<td>17.6</td>
</tr>
</tbody>
</table>

(continued next page)
Table 17.2 (continued)

<table>
<thead>
<tr>
<th>Area</th>
<th>Number of countries not meeting minimum requirements</th>
<th>Percentage of total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Debt administration and data security</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Availability and quality of documented procedures for processing of debt service</td>
<td>26</td>
<td>76.5</td>
</tr>
<tr>
<td>Availability and quality of documented procedures for debt data recording and validation, as well as storing of agreements and debt administration</td>
<td>28</td>
<td>82.4</td>
</tr>
<tr>
<td>Availability and quality of documented procedures for controlling access to central government debt recording, management system, and payment system</td>
<td>26</td>
<td>76.5</td>
</tr>
<tr>
<td>Frequency and off-site secure storage of debt recording and management system backups</td>
<td>25</td>
<td>73.5</td>
</tr>
<tr>
<td>Segregation of duties, staff capacity, and business continuity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Segregation of duties for some key functions, as well as presence of a risk-monitoring and compliance function</td>
<td>28</td>
<td>82.4</td>
</tr>
<tr>
<td>Staff capacity and human resource management</td>
<td>26</td>
<td>76.5</td>
</tr>
<tr>
<td>Presence of operational risk management plan, including continuity and disaster recovery arrangements</td>
<td>29</td>
<td>85.3</td>
</tr>
</tbody>
</table>

Source: Authors’ calculations, based on aggregated DeMPA results.
accountability and transparency are lacking, as regular performance audits have not been undertaken.

A surprising area of deficiency is debt records and reporting: despite several years of technical assistance and the availability of off-the-shelf software, less than half of the countries met the required criteria. Anecdotal evidence suggests that loss of key trained staff, lack of transfer of skills among staff, and lack of documented procedures are the main reasons for poor performance. In several countries, public sector policies mandate rotation of staff. Better incentives by the private sector for skilled debt managers lure away key personnel. Both factors result in loss of key skill sets, resulting in slippages that require starting all over again. This problem is compounded by fundamental weaknesses inherent in most debt offices, such as the lack of procedure manuals and documented work processes that would mitigate gaps when key staff are transferred or leave.

Cash management is rudimentary across the assessed countries. Most countries have a large number of bank accounts, at times driven by donor insistence. In many countries, information on the aggregate level of cash balances is not available or monitored, and cash is 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 earning no returns on surpluses. The DeMPA findings reveal a 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 or inadequate across countries. Only one-quarter of countries met the minimum requirements for debt administration and data security, and only 6 percent 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; mitigating the risk of fraud, human error, and market risk is critical given the high value of the transactions involved and the potential consequences of substantial financial loss as well as the 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.

The results suggest the need for increased technical assistance and strengthening in these areas, coupled with the procedures and institutional arrangements necessary to maintain a functioning debt management program. Administration, documentation, and monitoring and evaluation also need to improve.

The Medium-Term Debt Management Strategy

Taking a more strategic approach to evaluating financing choices requires greater integration of the formulation of debt management strategy and
broader macroeconomic management. As its name suggests, the Medium-Term Debt Management Strategy (MTDS) provides a framework for formulating and implementing a debt management strategy over the medium term, typically a three- to five-year horizon. It focuses primarily on determining the appropriate composition of the debt portfolio. The MTDS is useful for illustrating the trade-offs between cost and risk 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 because of exogenous developments and their budgetary impact.

The first step in developing an MTDS is to articulate the country’s debt management objectives and scope. Ideally, debt management objectives are stated in terms of meeting the government’s financing needs in accordance with its cost and risk preferences. Extending the maturity profile of the domestic portfolio and developing the domestic debt market are common secondary objectives over the medium term. Most of the sample countries lack clarity in their objectives for managing their debt. When examining alternative strategy options, the debt manager needs to know whether the government is willing to assume higher costs to reduce risk or achieve other goals, such as developing the domestic debt market.

In most countries in the sample, governments follow an informal debt management strategy that is neither explicitly approved by the minister of finance nor based on an analysis of cost and risk. For low-income countries, this informal strategy has sought to maximize concessional 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 strategy based on quantitative analysis.

As a reflection of the existing debt management strategy, the debt portfolio in most of the sample countries was dominated by official sector concessional financing. However, the proportion of external to domestic debt and the relative depth and breadth of the domestic markets varied widely (table 17.3). Countries that received HIPC Initiative, MDRI, and other external debt relief experienced an instantaneous transformation of the portfolio composition toward a greater share of domestic debt (figure 17.15). As a result, foreign exchange exposure was reduced dramatically, although in most countries where an MTDS had been adopted, the share of external debt in the total portfolio still exceeded 50 percent.

As the share of domestic debt has grown, refinancing risks have become more acute. The contrast between the average time to maturity of domestic and external debt in all countries is stark. Going forward, the extent to which the domestic debt market development agenda is advanced will determine the pace at which the domestic share of total debt can be increased. The share of variable rate debt in the total debt portfolio tends to be low in
Table 17.3 Key Risk Indicators of Existing Debt Portfolio in Six Sample Countries
(percent, except where otherwise indicated)

<table>
<thead>
<tr>
<th>Item</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outstanding debt to GDP ratio</td>
<td>48</td>
<td>71</td>
<td>23</td>
<td>33</td>
<td>43</td>
<td>12</td>
</tr>
</tbody>
</table>

*Exchange rate risk*

| Share of domestic debt in total debt | 46  | 42  | 36  | 29  | 51  | 58  |

*Refinancing risk*

| Average time to maturity domestic debt (years) | 1.6 | 3.9 | 1.0 | 5.3 | 4.3 | 2.7 |
| Average time to maturity external debt (years) | 16.2 | 15.8 | 12.5 | 20.6 | 11.5 | 10.9 |
| Share of total domestic debt maturing in next 12 months | 38  | 21  | 54  | 12  | 39  | 33  |

*Interest rate risk*

| Share of fixed-rate debt in total debt | 95  | 99  | 79  | 100 | 100 | 98  |
| Average time to maturity total debt (years) | 8.6 | 10.9 | 8.4 | 14.7 | 7.7 | 5.9 |
| Share of total debt that will refix interest rate in next 12 months | 39  | 11  | 56  | 9   | 25  | 24  |

*Source:* Authors’ calculations, based on sample of countries using the Medium-Term Debt Management Strategy.

low-income countries, pointing to minimal interest rate exposure. Analysis of the debt portfolio highlights the need to reduce exchange rate risk in the external debt portfolio and refinance exposure in the domestic portfolio.

The MTDS is forward looking. It is useful for evaluating the cost and risk consequence of new borrowing, particularly in the context of the changing financial landscape facing low-income country governments today. With the rapid increase in borrowing requirements in the aftermath of the 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 very important. In most of the sample countries, concessional borrowing has been maximized. The question is how to finance additional needs that cannot be met through concessional loans. In some countries, nontraditional bilateral lenders are emerging as important sources of finance, though their terms vary significantly from country to country. Countries at the upper end of the low-income country spectrum are exploring the possibility of becoming International Bank for Reconstruction and
Development (IBRD) blend countries. In almost all of the sample MTDS countries, international issuance of bonds is being discussed. Countries have deepened and broadened their domestic debt markets 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. A closed capital account has allowed governments to tap domestic savings that were captive within their borders at low or negative real interest rates. It may keep markets shallow, however, and it tends to limit absorptive capacity for future increases in domestic debt issuance.

Where pension reforms have not dealt with underfunded defined-benefit schemes for public and private employees, domestic absorptive capacity of long-term debt is limited and represents a significant contingent liability for the government. Other countries with open capital accounts have been aggressively courting foreign investors. Pension and capital market reforms have helped deepen the domestic debt market, contributing to the growth of the domestic investor base.

Countries in the sample have been affected by the recent financial crisis through the real sector: 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. Although import prices have also declined, the decline has not been enough to compensate for the reduction in exports, and external imbalances are expected to continue to deteriorate in the near term.
The resources to finance the current account deficit have been curtailed as private capital inflows have slowed, putting pressure on the exchange rate, reducing international reserves, and decreasing the import cover ratio. The fiscal position has also weakened, because the crisis has reduced government revenue collection and privatization receipts and expenditure has increased to counterbalance the effects of the recession. In some countries, significant uncertainty exists regarding the potential extent of contingent liabilities, particularly in the form of guarantees to parastatals, which constitute an important part of public debt. Donor inflows will also likely decline as a result of the worsening fiscal position of bilateral partners.

The sample countries vary in their ability to soften the effects of the crisis. Some of the commodities-exporting countries implemented counter-cyclical fiscal policy; because they had accumulated reserves, they were well placed to cushion the impact of the crisis. Other countries had capital control policies in place, which insulated them from the sudden stop of capital inflows and rush in outflows.

Many countries also experienced supply shocks, as headline inflation is often dominated by food and fuel prices. 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 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.

Two cost-risk measures are typically assessed in the MTDS analysis: the interest payments to GDP ratio and the nominal debt to GDP ratio. Conflicting results could emerge from using the different measures. The cost and risk measure of the interest payments to GDP ratio highlights the vulnerability of the budget to variations in interest payment projections. In the sample of low-income countries, without exception the interest cost of a strategy that maximizes concessional borrowing dominates other strategies, with the low cost reflecting highly concessional interest rates and the low risk reflecting the slight variations from the baseline as a result of the low absolute level of interest payment. Strategies that pursue larger shares of domestic debt will have higher costs and risks according to this measure. The higher risk of the domestic debt is explained by the fact that higher-cost domestic financing replaces lower-cost external financing, which leads to higher absolute cost and risk levels.

Cost and risk measured in terms of the debt to GDP ratio display a range of results across 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 in which 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. Although the interest rates associated with external borrowing typically have lower coupon rates than those on domestic borrowing, in cases in which 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 of domestic debt (with higher cost and lower risk) and a strategy that had a higher share of external debt (with lower cost and higher risk). In such cases, the interest payments on the depreciated (that is, higher domestic currency equivalent) principal value can be higher than the interest payments on domestic debt, rendering domestic debt 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 a depreciation shock. Without exception, exchange rate shocks dominated the risk outcome (relative to interest rate shocks) for the debt to GDP measure, as this shock affects not only interest cost but also principal valuation.

In addition, 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, and the shock scenarios and macroeconomic projections that drive the pricing assumptions. For this reason, 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 identify an uncomfortable level of refinancing risk that may have resulted from a strategy that appeared to be attractive from a cost-risk perspective.

The main risk to debt sustainability arising from debt composition derives from exchange rate risk. However, given the relatively short maturities of domestic debt compared with 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. If this debt is allowed to mature according to its principal repayment schedule, after three years external debt will have barely matured, with just 1–18 percent of the original debt reaching maturity (table 17.4). In contrast, domestic debt will have matured substantially, with 40–100 percent of the original debt having matured after three years. Of the total original debt, 63–85 percent will still be outstanding. Together with indicators such as average time to maturity, this measure 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. If, however, the existing debt is risky—for example, if it is heavily foreign currency denominated—the country will have to live with this risk for an extended period. In the absence of swaps, changing the debt composition can be achieved only marginally over time, as existing debt matures and new debt is contracted to finance the budget deficit.

In an environment of increasing deficits and infrastructure investment needs that will raise the new financing requirement, the implication of this analysis is that debt structures can quickly evolve. Unless a prudent debt management strategy is in place, the public debt portfolio can quickly become riskier. As countries increasingly evaluate nonconcessional sources of financing, including the option of issuance in the international capital market, assessing the risk consequence of such borrowing on the overall portfolio becomes increasingly acute.

**Nonconcessional Borrowing**

Many low-income countries seek to reduce donor dependence because donor financing can be volatile and unpredictable, the use of funds is often tied to specific project-related expenditures, and doing business with multilateral institutions can involve high transaction costs. But moving to the international capital markets adds to financing volatility while raising costs. Turning to such nonconcessional sources also fails to 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, but doing so can add to refinancing risk and increase interest cost. For some small low-income economies, there may not be the investor base to support a viable government bond market.

### Table 17.4 Percentage of Domestic and External Debt Outstanding after Three Years in Selected MTDS Countries

<table>
<thead>
<tr>
<th>Country</th>
<th>Domestic debt</th>
<th>External debt</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>39</td>
<td>99</td>
</tr>
<tr>
<td>B</td>
<td>54</td>
<td>91</td>
</tr>
<tr>
<td>C</td>
<td>0</td>
<td>82</td>
</tr>
<tr>
<td>D</td>
<td>59</td>
<td>96</td>
</tr>
<tr>
<td>E</td>
<td>44</td>
<td>84</td>
</tr>
</tbody>
</table>

*Source: Authors’ calculations.*

*Note: MTDS = Medium-Term Debt Management Strategy.*
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, by offering greater scope to change the currency exposure of the portfolio to tailor it to the country’s export revenue streams, for example. However, the diversification of financing sources is likely to be achieved at the expense of higher debt-servicing costs and potentially higher 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, because increased availability of resources in domestic currency can facilitate the extension of the tenor of domestic debt.

The management of nonconcessional debt poses new challenges and could increase the risk that low-income countries will accumulate unsustainable debt burdens, however. The buildup of nonconcessional external debt can place a heavy debt-servicing burden on low-income countries. If debt management units lack the capacity to undertake a credible forward-looking debt sustainability analysis, borrowing strategies may not be aligned with long-term servicing capacity, and imprudent borrowing may result.

Even a modest amount of nonconcessional borrowing can significantly increase debt-servicing costs. Despite the relatively modest amount of nonconcessional debt stock in 2007 (the latest year for which data are available), debt service on nonconcessional debt in several countries represented a large portion of total debt service (figure 17.16). In Ethiopia, Ghana, Myanmar, Uzbekistan, and Zimbabwe, for example, nonconcessional debt service made up the majority of total debt service. The availability of nonconcessional financing has increased the urgency to build capacity to develop and implement credible debt management strategies, so that governments can make informed borrowing decisions to manage their debt portfolios.

Concluding Remarks

Sound debt management practices play a critical role in preventing and mitigating financial crises in both low- and middle-income countries. The challenges are particularly great in low-income countries, which lack economic diversification, deep financial markets, and sufficient endowments of institutional and human capital with which to prepare for and respond to crises.

The first step in addressing debt management performance is to assess the strengths and weaknesses in a country’s current framework. The DeMPA was designed to identify these weaknesses and provide
benchmarks for reform. Preliminary assessment of its results shows that developing countries need to strengthen crucial areas of debt management, particularly the capacity to assess cost-risk trade-offs in their public debt portfolios. The MTDS is an important tool for addressing this issue. An effective MTDS illustrates the cost-risk trade-offs of a variety of strategies within a country’s debt management framework. Reducing 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.

Given the uncertainty of the current environment and the evolution of debt levels and interest rates worldwide, it remains to be seen whether vulnerable low-income countries will be able to effectively manage their debt. Although this uncertainty and uncertainty surrounding the outcome of the financial crisis remain, one concrete lesson to be drawn from recent experience is that strengthening debt management capacity in developing countries, particularly low-income countries, will be an indispensable tool in preventing and mitigating crisis effects now and in the future.
Annex

Figure 17A.1 Problem Areas Identified by the Debt Management Performance Assessment (percentage of countries)

(a) Debt management strategy

- Quality of debt management strategy documents
- Decision-making process, updating, and publication of debt management strategy

(b) Audit

- Frequency of internal and external audit on debt management activities, policies, and operations, as well as publication of external audit
- Degree of commitment to addressing outcomes from internal and external audits

(c) External borrowing

- Assessment of most beneficial/cost-effective borrowing terms and conditions
- Availability and quality of documented procedures for borrowing in foreign market
- Availability and degree of involvement of legal advisers

Legend:
- C or higher
- D
- No rating
crisis preparedness and debt management

segregation of duties for some key functions; presence of a risk monitoring and compliance function

staff capacity and human resource management

presence of operational risk management plan, including continuity and disaster recovery arrangements

d. Cash flow forecasting and cash balance management

e. Debt administration and data security

f. Segregation of duties, staff capacity, and business continuity planning

Source: Authors’ calculations, based on aggregated Debt Management Performance Assessment results (see note 6).
Table 17A.1 Quality of Debt Management and HIPC Eligibility

<table>
<thead>
<tr>
<th>Variable</th>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
<th>V</th>
<th>VI</th>
<th>VII</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net present value of debt/GDP</td>
<td>0.23***</td>
<td>0.19***</td>
<td>0.28***</td>
<td>0.12**</td>
<td>0.19***</td>
<td>0.11***</td>
<td>0.61***</td>
</tr>
<tr>
<td></td>
<td>2.56</td>
<td>2.85</td>
<td>2.64</td>
<td>2.09</td>
<td>2.89</td>
<td>2.83</td>
<td>3.03</td>
</tr>
<tr>
<td>Income</td>
<td>−0.28***</td>
<td>−0.24***</td>
<td>−0.30***</td>
<td>−0.22***</td>
<td>−0.24***</td>
<td>−0.25***</td>
<td>−0.43***</td>
</tr>
<tr>
<td></td>
<td>5.74</td>
<td>5.51</td>
<td>5.73</td>
<td>5.80</td>
<td>5.41</td>
<td>4.59</td>
<td>5.25</td>
</tr>
<tr>
<td>CPIA debt management</td>
<td>−0.32***</td>
<td>−0.25**</td>
<td>−0.32**</td>
<td>−0.48***</td>
<td>−0.71***</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2.65</td>
<td>2.51</td>
<td>2.54</td>
<td>3.60</td>
<td>3.41</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CPIA</td>
<td>0.04</td>
<td>0.72</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Growth 1985–95</td>
<td>−0.38***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2.89</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Growth in volume 1985–95</td>
<td></td>
<td>−0.12</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.08</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Number of observations</td>
<td>102</td>
<td>102</td>
<td>100</td>
<td>102</td>
<td>102</td>
<td>101</td>
<td>82</td>
</tr>
<tr>
<td>Pseudo-R²</td>
<td>0.56</td>
<td>0.60</td>
<td>0.57</td>
<td>0.66</td>
<td>0.60</td>
<td>0.56</td>
<td>0.60</td>
</tr>
<tr>
<td>Wald</td>
<td>38.12</td>
<td>36.38</td>
<td>40.28</td>
<td>36.51</td>
<td>36.80</td>
<td>21.92</td>
<td>37.94</td>
</tr>
</tbody>
</table>

Source: Authors’ calculations and World Bank 2006.

Note: Marginal effects dF/dx reported. Absolute value of t-statistics in italics. Dependent variable: binary variable = 1 if the country is eligible for HIPC relief and = 0 if not (48 eligible countries). Income is the log of real per capita income denominated in U.S. dollars. All errors are robust standard errors correcting for heteroskedasticity. CPIA = Country Policy and Institutional Assessment; HIPC = Heavily Indebted Poor Countries.

* Significant at the 10% level; **Significant at the 5% level; ***Significant at the 1% level.
Notes

1. In fact, the rise in debt levels comes uniquely from the developed countries in the G-20, whose general government debt levels are predicted to rise from 78.2 percent in 2007 to 118.4 percent in 2014.

2. The DeMPA was developed by the World Bank; the MTDS was developed jointly by the Bank and the IMF. Both tools were developed through a broad consultative process that sought suggestions and inputs from client countries and providers of international technical assistance that are active in the field.

3. A World Bank study (2010) shows that an average annual decline in interest spreads of 25 basis points could increase long-term potential output by 13 percent, increasing potential average annual output growth by 0.3 percent.

4. DeMPA indicators are scored on a scale from A to D. A score of C or higher indicates that the minimum requirements for effective debt management have been met; a D indicates that these requirements have not been met.

5. See World Bank (2009a) for a complete list of DeMPA indicators and subindicators. DeMPA material and a list of country implementations can be found at www.worldbank.org/debt.

6. The analysis is based on the results of 34 assessments conducted between November 2007 and December 2009.

7. This in no way implies that other areas are less important for reforms, simply that few countries met minimum requirements at the time of this study.

8. A factor in the comparative neglect of this area of public debt management in low-income countries could well be that most borrowers access multilateral and bilateral sources of finance. Operational risk is mitigated in these cases, because 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 low-income countries and an explanatory factor for the low DeMPA scores.

9. The MTDS consists of a toolkit to assist governments in analyzing and developing an MTDS, taking into account macroeconomic and market environments.

10. For the framework for developing an MTDS, see World Bank and IMF (2009a). Quantitative analysis is not necessary to put a good MTDS in place. If countries followed the Guidance Note and assess the various considerations to derive candidate strategies, they can develop an acceptable set of strategies for consideration by policy makers. Even if some outcomes are obvious, it is useful to explicitly quantify the cost and risk consequences of a particular strategy to understand the opportunity cost of 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.


12. Loans from the International Development Association (IDA) and the African Development Bank have zero interest rate risk, as interest rates are fixed at 0.75 percent, regardless of market conditions. Interest rate risk arises only from the nonconcessional borrowing incurred after countries reach the limit on concessional debt.

13. Substitution of a 2 percent external loan coming due by a 10 percent domestic loan would result in an increase in interest cost of 8 percent. Domestic debt would also be riskier because of the higher absolute level of interest payments and the higher interest rate shock applied to the domestic interest rate relative to
the foreign interest rate (say, a 2 percent shock for a domestic interest rate and a 1 percent shock for the foreign interest rate).

References


