DIRECTIONS IN DEVELOPMENT

Public Sector Governance

Beyond the Annual Budget

Global Experience with Medium Term Expenditure Frameworks

THE WORLD BANK

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Abbreviations

AAA	analytical and advisory activities
AIDS	acquired immune deficiency syndrome
BII	Budget Institutions Index
BPEMS	Budgeting and Public Expenditure Management System, Ghana
CIDA	Canadian International Development Agency
CPIA	country policy and institutional assessment
CSCW	Centre for the Study of Civil War
DFID	U.K. Department for International Development
DPI	Database of Political Institutions
DPL	development policy loan
DROND	Report on Results and Main Areas of Activity, Russia
EC	European Commission
ESW	economic and sector work
FAD	Fiscal Affairs Department, IMF
FPD	Finance and Private Sector Development (network)
GDP	gross domestic product
GIZ	German Agency for International Cooperation
GMM	generalized method of moments
GPRS	Government Poverty Reduction Strategy, Albania
HDN	Human Development Network

HIPC	Heavily Indebted Poor Country
HIV	human immunodeficiency virus
HP	Hodrick-Prescott
ICR	Implementation Completion Report
IMF	International Monetary Fund
ISR	Implementation Status Report
KAGA	Key Areas of the Government Activities till 2012, Russia
LDO	Budget Guidelines Law, Brazil
MoF	Ministry of Finance
MoFEP	Ministry of Finance and Economic Planning, Ghana
MoFPED	Ministry of Finance, Planning, and Economic Development, Uganda
MoSF	Ministry of Strategy and Finance, Korea
MTBF	medium-term budgetary framework
MTEF	medium-term expenditure framework
MTFF	medium-term fiscal framework
MTPF	medium-term performance framework
NDP	national development plan
NFMP	National Fiscal Management Plan, Korea
NSDI	National Strategies for Development and Integration, Albania
OBI	Open Budget Index
OECD	Organisation for Economic Co-operation and Development
OLS	ordinary least squares
OPCS	Operations Policy and Country Services
PEAP	Poverty Eradication Action Plan, Uganda
PEFA	public expenditure and financial accountability
PER	Public Expenditure Review
PFM	public financial management
PforR	program for results
PIMI	Public Investment Management Index
PIP	public investment plan
PPA	*Plano Plurianual* (for Brazil)
PPP	purchasing power parity
PREM	Poverty Reduction and Economic Management
PRSC	Poverty Reduction Strategy Credit
PRSP	Poverty Reduction Strategy Paper
PUFMARP	Public Financial Management Reform Program, Ghana
ROSC	Report on the Observance of Standards and Codes, IMF
S&P	Standard and Poor's
SAR	Special Administrative Region

SDN	Sustainable Development Network
SIGFA	*Sistema Integrado de Gestión, Administrativa, Financiera, y Auditoría* (information financial management system), Nicaragua
SNIP	*Sistema Nacional de Inversión Pública* (National System for Public Investment), Nicaragua
SWAP	sectorwide approach
TA	technical assistance
UN	United Nations
USAID	U.S. Agency for International Development
WDI	World Development Indicators
WEO	World Economic Outlook
WGI	World Governance Indicators
WHO	World Health Organization

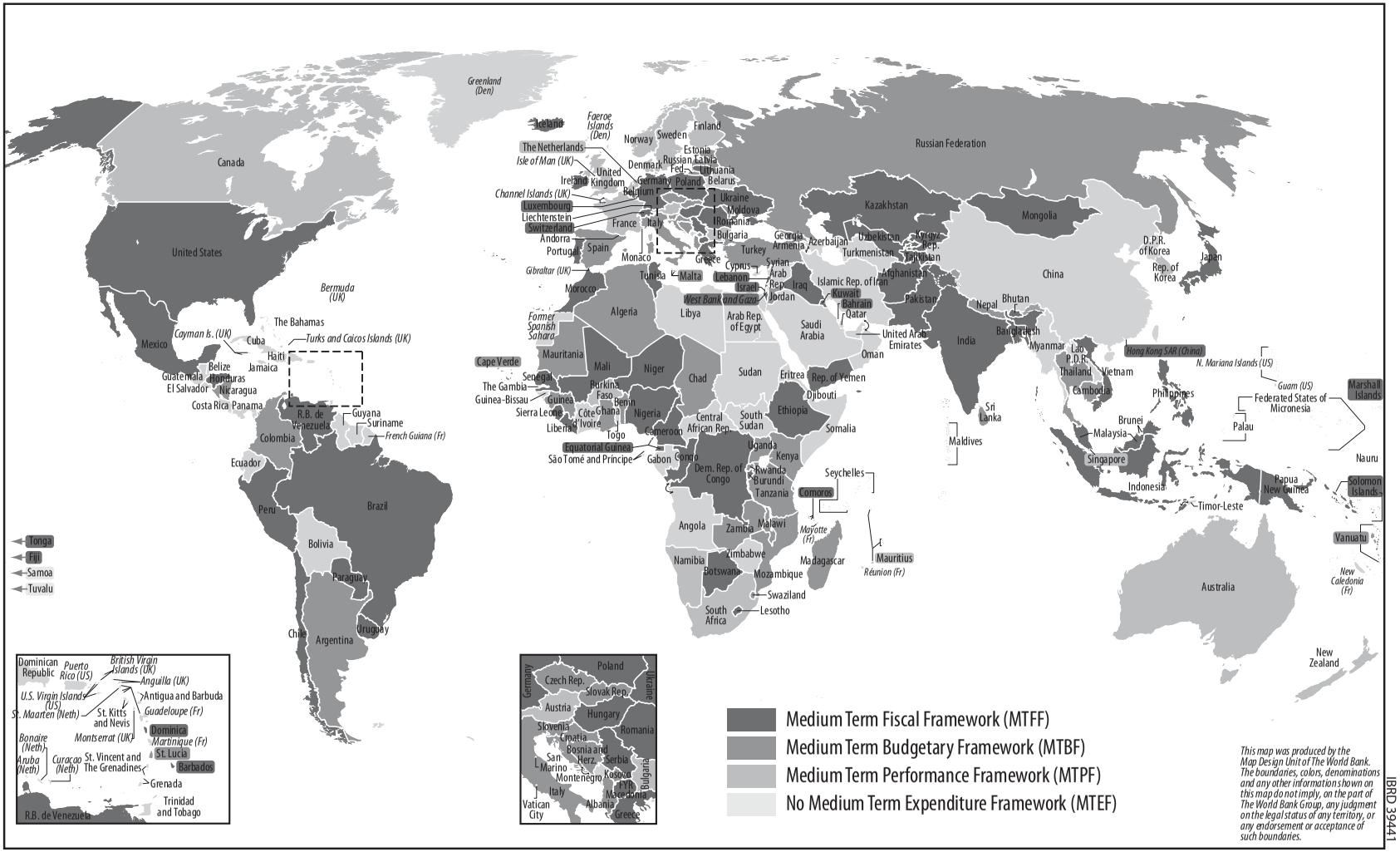
CHAPTER 1

Introduction

By the end of 2008, more than two-thirds of all countries had adopted a medium-term expenditure framework (MTEF). As map 1.1 shows, MTEFs are found in countries all across the world. Even though they have been around since the early 1980s, MTEFs did not gain prominence until the late 1990s. Two trends explain their spread. Low- and middle-income countries adopted MTEFs primarily because donors viewed them as a way to ensure a multiyear commitment of resources to the policies included in poverty reduction strategy papers (PRSPs) and incorporated them into their standard advice on budget reforms. The World Bank has been involved with MTEF reforms in more than half of these countries. High-income countries adopted MTEFs as a way to support budgetary targets, improve expenditure prioritization, and foster improved government performance.

However, successful implementation of MTEFs and their impact on budget management and fiscal performance vary widely across countries. An MTEF requires policy makers to look across sectors, programs, and projects to examine how public spending can best serve national development objectives over the medium term. In doing so, they must weigh the importance attached to short-term goals against that attached to medium-term objectives and set aside the narrow self-interests of spending

Map 1.1 MTEFs Worldwide, 2008



Source: World Bank.

agencies, politicians, and spending beneficiaries. Prioritization subject to resource constraints becomes the guiding principle of budgeting. The general view is that economic, political, and institutional factors have limited the application of this principle, along with the effectiveness of MTEFs.

In this connection, some analytical studies from the early 2000s, by the World Bank and others, identify important shortcomings of planning and implementation of MTEF reforms. These studies, which focus mainly on low-income countries, conclude that reforms have not paid sufficient attention to basic aspects of budget management or adequately addressed the political and institutional realities of budget reform. These weaknesses cast doubt on the feasibility of introducing full-fledged MTEFs in developing countries.

MTEFs have also been a subject of recent Bank evaluations. A report prepared by the Quality Assurance Group (QAG) notes that MTEFs have performed differently across regions and have been least successful in Africa (QAG 2008). Working for the Bank's Independent Evaluation Group, Wescott (2008) points to the decisive role of entry points—that is, whether MTEFs are first tried in sectors where they are likely to deliver the most success—in shaping the outcome of MTEF reforms. The QAG concludes, "There is a strong case for a Bank-wide review of the experience with MTEFs and lessons drawn."

This study responds to the QAG's conclusion by reporting on a comprehensive review of the experience with MTEFs that addresses some of the limitations of previous studies. It looks at the experiences of countries with and without MTEFs over the period 1990 to 2008, when most reforms were adopted.[1] It does so by employing a systematic methodological approach that relies on multiple analytical techniques, including event studies and econometric analysis, to obtain results about the impact of MTEFs on fiscal performance. It then draws on case study and other material to (a) determine whether MTEFs should be a common element of public financial management (PFM) systems given differences in country circumstances and (b) provide guidance on the design and implementation of MTEFs in the context of broader advice about PFM reform.[2]

In the process, the study attempts to answer the following policy questions:

- What initial economic, political, institutional, and other conditions determine the success of MTEFs? Are there key country, PFM, and MTEF characteristics that are critical for success?

- How should the implementation of MTEFs be sequenced and coordinated with other budget reforms?
- What role should the Bank, bilateral development partners, and other international agencies play in supporting the adoption of MTEFs?

Based on the answers to these questions, the study then provides guidance on the following:

- Is an MTEF always appropriate, or do differences in country circumstances call for different approaches?
- What characteristics give an MTEF a good chance of succeeding in different country circumstances?
- Are some ways of implementing a new MTEF or strengthening an existing one better than others?

This study is intended first and foremost to inform the World Bank's advice on MTEFs and PFM reform in general. It should also be of interest to other multilateral and bilateral providers of technical assistance in the area of PFM and to country authorities seeking to introduce or strengthen an MTEF.

The report is structured as follows. Chapter 2 provides background on what constitutes an MTEF and what it aims to achieve. It also describes the Bank's engagement with MTEFs, presents main points of debate over the experience with MTEFs, and provides a rationale for this study. Chapter 3 describes the key characteristics of MTEFs, explains the approach used to identify and classify them according to their stage of development, and reviews trends in their adoption. Chapter 4 outlines the methodological approaches used to examine the impact of MTEFs on fiscal performance, formulates the research hypotheses that are tested in the study, and presents empirical findings from the event studies and econometric analysis. It also presents qualitative insights, informed by case studies, on how MTEFs have affected the quality of budgeting. Chapter 5 draws some lessons about the key institutional determinants of MTEF performance. Chapter 6 discusses lessons learned from Bank support for MTEF implementation. Chapter 7 presents the conclusions of the study and discusses their implications for the Bank. Several appendixes provide supporting material, including a country-by-country tabulation of MTEF status, a full discussion of econometric results, and country case studies.

Notes

1. It would be instructive to look at how the onset of and recovery from the recent global economic and financial crisis affected the performance of MTEFs. However, data for some key variables used in the analysis are available for 2009, but not for 2010. The results will be revisited once data for 2010 and 2011 become available.
2. Detailed operational advice on the implementation of MTEFs will be provided in follow-up work.

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CHAPTER 2

What Are MTEFs and What Can They Do?

Medium-term expenditure frameworks (MTEFs) constitute an approach to budgeting and public financial management (PFM) that addresses well-known shortcomings of annual budgeting, including short-sightedness, conservatism, and parochialism (Wildavsky 1986). Most public programs require funding and yield benefits over a period of years, but annual budgeting largely ignores future costs and benefits. Multiyear budget planning is the defining characteristic of MTEFs. Annual budgets typically start with the previous year's budget and modify it in an incremental manner, making it difficult to reprioritize policies and spending.[1] As a result, spending patterns become entrenched, even in the face of changing needs. MTEFs take a strategic forward-looking approach to establishing priorities and allocating resources, which allows the level and composition of public expenditure to be determined in light of emerging needs. MTEFs also require policy makers to look across sectors, programs, and projects to see how spending can be restructured to best serve established policy objectives. As a consequence, the opportunistic interests of spending agencies and beneficiaries that are a feature of annual budgeting should no longer dominate to the same degree. However, for these benefits to materialize, an MTEF cannot be regarded as separate from and only loosely related to the annual budget. MTEFs must eventually replace

the annual budget as the centerpiece of the budget process. Indeed, an MTEF requires budget preparation to go beyond the annual budget to take account of the medium term.

MTEFs translate macrofiscal objectives and constraints into broad budget aggregates and detailed expenditure plans, guided by strategic expenditure priorities. When an MTEF is implemented well, public expenditure is limited by the availability of resources, budget allocations reflect spending priorities, and public goods and services are delivered cost-effectively. MTEFs therefore offer the prospect of achieving the three high-level objectives of public expenditure management: aggregate fiscal discipline, allocative efficiency, and technical efficiency (level-one, -two, and -three budgetary objectives).[2] Traditional annual budgeting often falls short of meeting these objectives. Moreover, with macrofiscal policy increasingly being framed in a medium-term context, guided by debt sustainability analysis, multiyear fiscal targeting, and in some cases permanent fiscal rules, MTEFs establish a formal link between broad fiscal policy objectives and budgeting, which can strengthen the credibility of both. This can be particularly important when countries are implementing a medium-term fiscal adjustment program, since an MTEF can signal a government's commitment to high-quality adjustment based on prioritization of spending and reduction of waste, which are often key to successful adjustment.

MTEFs can also leverage the fact that aggregate fiscal discipline, allocative efficiency, and technical efficiency are closely linked objectives. Governments can focus more on the microeconomic challenges of improving expenditure efficiency when they do not have to address the adverse macroeconomic consequences of persistent fiscal imbalances.[3] Conversely, efficient public spending makes it easier to maintain fiscal discipline, since both allocative and technical efficiency reduce waste and thus alleviate the overall resource constraints. While the search for allocative efficiency does this by squeezing unproductive expenditure programs, technical efficiency requires pursuing objectives with fewer resources. Moreover, when the government is committed to fiscal discipline, new expenditure needs are more likely to be accommodated by reallocating spending than by providing additional funding. Finally, both fiscal discipline and expenditure efficiency create fiscal space that can support productive spending on economic and social infrastructure as well as on other high-priority areas. Fiscal space can also be used to respond to upcoming fiscal challenges (for example, population aging, climate change) as well as ever-present fiscal risks (for example, calls

on government guarantees, natural disasters). MTEFs provide a basis for considering these fiscal management challenges and the links between them within a consistent framework.

The power of MTEFs to generate good fiscal performance derives from their impact on the quality of budgeting and budget credibility. MTEFs help to reduce shortcomings of annual budgeting by achieving the following:

- *Budget realism*. The revenue that the government can reasonably expect to collect and the new borrowing that it can safely undertake should place an upper limit on spending. This contrasts with the fairly common situation where governments formulate ambitious annual spending plans based on unreasonable expectations about potential revenue and borrowing capacity.

- *Spending driven by medium-term sector strategies*. Rather than preparing an annual budget by making incremental changes to current programs, determining priorities based on the latest political imperative, budgeting separately for capital and current expenditures, ring-fencing chosen programs and projects, and building other rigidities into the budget, resource allocation should reflect an assessment of priorities within and between sectors based on agreed objectives and policies.

- *Spending agencies with a voice*. Instead of focusing primarily on compliance with expenditure controls, ministries, departments, and other spending agencies should have significant input into the design of sector strategies and some flexibility in managing their resources to pursue sector objectives and implement sector policies efficiently.

- *Budgets containing multiyear spending allocations*. To the extent possible, spending agencies should have a predictable resource envelope to ensure effective decision making, which is lacking when budgeting involves annual negotiations over incremental resources. With an MTEF, spending agencies have reasonable assurance about the resources they are likely to receive over the medium term. This not only makes it easier to plan multiyear expenditures, but also gives spending agencies the confidence to change policy direction.

- *Budget funding linked more closely to results*. A shift in focus from control of inputs to flexibility in the mix of inputs to produce specific

outputs and outcomes allows greater emphasis on allocating resources according to the results achieved by spending programs and provides more discretion over the choice of inputs used to achieve particular results.

- *Greater fiscal transparency and accountability.* MTEFs provide a clear-cut mechanism for monitoring government performance against approved plans, which makes it easier to hold governments accountable for their choice of fiscal policies.

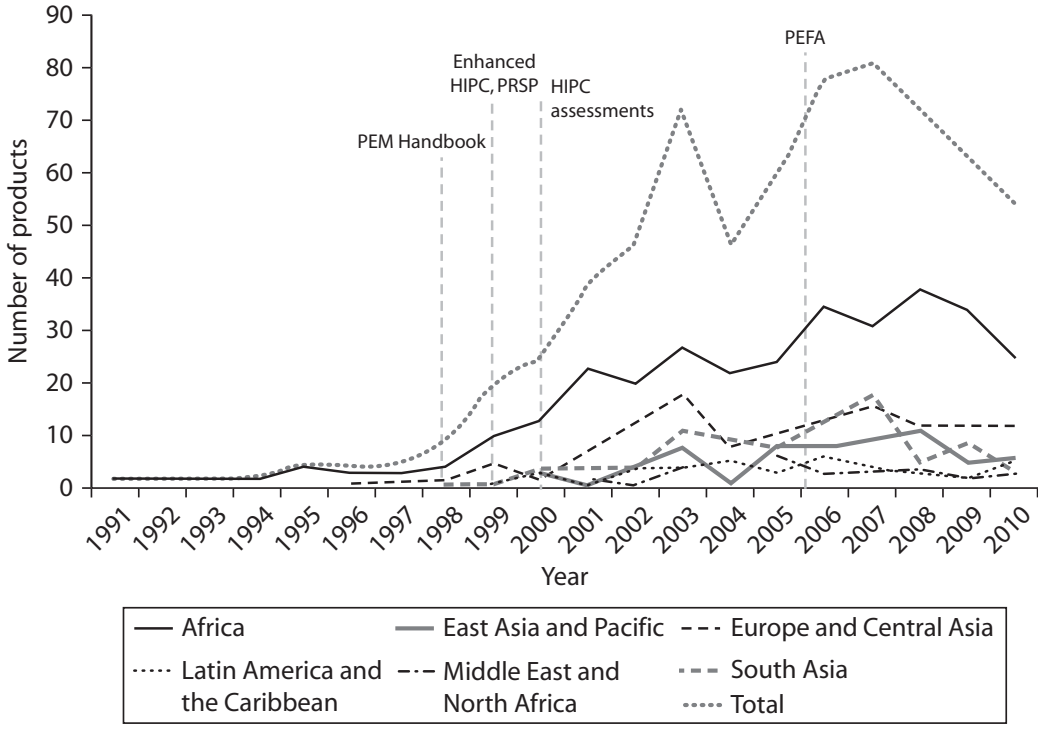
The Debate over MTEFs and the Role of the Bank

MTEFs are not a recent innovation, but their spread around the world is a recent phenomenon. In one form or another, MTEFs have been around since at least the early 1980s, when Australia launched its forward estimates system.[4] A few industrial countries followed suit in the 1980s and early 1990s (Denmark, New Zealand, the Netherlands, and Norway), but some African countries implemented MTEFs only in the late 1990s. The specific context in these countries (with the exception of South Africa) was the need to ensure a multiyear commitment of resources to policies included in poverty reduction strategy papers (PRSPs). Donors played an important role in encouraging the implementation of MTEFs. Part of their motivation was to improve public financial management as a means to ensure that external assistance and domestic resources would support development programs directed toward poverty alleviation.

Consequently, the World Bank built MTEFs into the standard budgeting toolkit that it was recommending to client countries at the time. This toolkit became an integral part of the *Public Expenditure Management Handbook*, which says that an MTEF "facilitates the management of policies and budget realities to reduce pressure throughout the whole budget cycle, … results in better control of expenditure and better value for money within a hard budget constraint, and resolves the tensions between what is affordable and what is demanded" (World Bank 1998, 9).[5]

Over the period from 1991 to 2010, the Bank was directly involved with MTEF reform in 109 low- and middle-income countries in all six regions.[6] Products focusing on MTEFs were mainly lending operations, analytical and advisory activities, and, to some extent, technical assistance. As figure 2.1 shows, the number of products has increased significantly over time, especially in the late 1990s and early 2000s, with the total number of products reaching 691 by 2010.[7] The Bank provided advice on

Figure 2.1 MTEF Bank Products in 109 Countries, by Region and Year, 1991–2010



Source: World Bank.
Note: HIPC = Heavily Indebted Poor Countries Initiative; MTEF= medium-term expenditure framework; PEFA = public expenditure and financial accountability assessment; PEM = Public Expenditure Management; PRSP = poverty reduction strategy paper.

MTEFs most actively in Africa (354 products) and in Europe and Central Asia (152 products), mainly in low-income countries. The spikes in the Bank's engagement with MTEF reforms shown in figure 2.1 tend to be associated with broader Bank initiatives in the area of public financial management, such as publication of the *Public Expenditure Management Handbook* (World Bank 1998), the launch of the enhanced Heavily Indebted Poor Countries (HIPC) and PRSP Initiatives, and the introduction of the public expenditure and financial accountability (PEFA) framework or work at the country level, such as the preparation of a PRSP or a PEFA assessment. The objectives most commonly pursued in the context of MTEF reforms supported by the Bank are allocative efficiency, followed by aggregate fiscal discipline. Appendix A provides more detail on Bank operations focusing on MTEFs.

The Bank's involvement with MTEFs picked up significantly despite early concerns that MTEFs might not be living up to expectations. Following some initial reviews that raised issues about MTEF implementation (see, for example, McNab, Martinez-Vazquez, and

Boex 2000; Oxford Policy Management 2000), two studies examined MTEFs in Africa. Le Houerou and Taliercio (2002), in a Bank study, draw lessons from MTEFs in 13 African countries, all but one of which were introduced with Bank support. Holmes and Evans (2003), for the Overseas Development Institute, review experience with MTEFs in the context of PRSPs in nine countries (eight of which are in Africa). Both studies identify similar shortcomings of the MTEF reforms:

- Initial country conditions, especially with regard to basic aspects of budget management, are not taken sufficiently into account.
- With the exception of a few cases, inadequate attention is paid to the political and institutional aspects of the reform process.
- Operational MTEFs do not resemble their textbook counterparts.

However, while Le Houerou and Taliercio (2002, 25) conclude, "MTEFs alone cannot deliver improved [public expenditure management] in countries in which other key aspects of budget management remain weak," Holmes and Evans (2003, 31) conclude more optimistically, "MTEFs are progressing, albeit unevenly, and . . . in many cases they have both facilitated and are being strengthened by the current emphasis on implementing PRSPs." These studies are summarized in more detail in appendix B.

The experience with MTEFs has also increasingly become a subject of other reviews. Oxford Policy Management (2008, 2009) has followed up on its 2000 assessment with suggestions on how to make MTEFs more effective. Filc and Scartascini (2010), Kasek and Webber (2009), and Oyugi (2008) examine the experience with MTEFs in Latin America, emerging Europe, and Southern Africa, respectively. These studies, which are summarized in appendix B, largely confirm the above observations about MTEF performance.

Rationale for This Study

On the basis of these studies, it may seem that there is little need for another assessment of the experience with MTEFs. Rather, the focus should now be on strengthening existing MTEFs as well as providing a blueprint for the successful implementation of new MTEFs. However, the available studies have significant limitations. First, their conclusions are derived mainly from country case studies, which lack empirical evidence supported by quantitative analysis. Second, they focus on a relatively

small sample of countries. The emphasis to date has been on countries with MTEFs, especially in Africa and where the World Bank has supported their implementation. Third, MTEFs have become much more popular since the late 1990s, so studies undertaken in the early 2000s had relatively little experience to work with or time series to analyze.

This study aims to undertake a more comprehensive review of the experience with MTEFs and to address the limitations of the previous assessments. This is accomplished in the following way:

- *Methodological approach*. While it is not unusual to employ country case studies when reviewing the experience with policy reforms, there is scope to apply a wider range of analytical techniques to the available qualitative and quantitative information, with a view to identifying economic, political, institutional, and other (for example, regional) patterns that may be helpful in understanding differences in country experiences with MTEFs as well as in examining the effect of MTEFs on fiscal performance. Therefore, this study relies on multiple techniques, including event studies, econometric analysis, and case studies.
- *Country coverage*. This study looks at the experience of countries with and without MTEFs. Even if the goal is to improve World Bank advice on MTEFs to its clients, much can be learned from the experience of all countries that have introduced MTEFs and, for benchmarking purposes, of those that have not.
- *Timing*. MTEFs can take many years to implement in full, which means that having an additional five or more years of experience to examine is significant and can potentially yield meaningful insights.[8]

Notes

1. While incremental budgeting can work well in times of revenue growth, it comes under particular pressure when revenue falls, becomes more volatile, or reaches its natural limit, because this is when expenditure prioritization takes on increased importance.
2. These objectives cannot be viewed in isolation. Success in meeting them requires that budgetary and PFM systems function well, a subject discussed later in the book. There is also a link to broader economic developments (Campos and Pradhan 1996). Improved fiscal outcomes contribute to higher growth, lower inflation, and macroeconomic volatility. In addition, as the quality of spending improves, higher incomes should be accompanied by lower poverty rates, while better infrastructure should contribute to even higher growth and further poverty reduction.

3. Some argue that, in fact, large deficits prompt better expenditure prioritization; however, the lessons from fiscal adjustments around the world suggest that spending cuts are borne disproportionately by high-priority spending, especially public investment in infrastructure, with adverse consequences for future growth (see, for example, Easterly, Irwin, and Servén 2008). Lewis and Verhoeven (2010) report that the growth of public social spending has dipped as the global financial crisis has put fiscal positions under pressure and suggest that this "risks setting back achievement of human development goals."
4. Australia replaced annually negotiated expenditure appropriations with policy-based medium-term allocations that were updated periodically to reflect new economic and programmatic developments. New policies were included as decisions were made (see Keating 2001). The United Kingdom had an embryonic MTEF system going back to the 1960s, when public expenditure survey committees were introduced, although the process was not called an MTEF in those days.
5. While recognizing the importance of multiyear planning, the International Monetary Fund (IMF) did not explicitly recommend MTEFs in its PFM guidelines (Potter and Diamond 1999). However, the IMF views MTEFs as good for fiscal transparency, for the same reasons that the Bank advocates them (see IMF 2007).
6. If products focusing on high-income countries are included, the total number of countries is 110. There are six such products and they comprise countries that reached high income level recently.
7. Out of this total, project documents are available for only 363 products.
8. On average, countries that take a gradual approach to implementation (as recommended later in this study) need about six years on average to put in place a full-fledged MTEF. Some countries have taken or will need much longer.

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CHAPTER 3

MTEF Foundations

This chapter describes the general characteristics of medium-term expenditure frameworks (MTEFs), explains the approach used to identify and classify them according to their stage of development, and reviews trends in their adoption in countries and regions worldwide.

General Characteristics

As noted, multiyear budget planning is the defining feature of MTEFs. The approach to planning can be thought of as a three-stage process.

- *Specifying a medium-term envelope of aggregate resources (the top-down approach)*. The Ministry of Finance (MoF) or other ministry responsible for preparing the budget, in conjunction with other economic ministries and usually the central bank, uses a macro-fiscal framework and forecasting models to assess the availability of total resources. This reflects the potential collection of tax and non-tax revenue, borrowing capacity and availability of loans, and aid committed to support budget programs and projects. Resource availability is translated into initial allocations for spending agencies, based on past spending, new priorities and policies, and relevant guidance provided by the cabinet, council of ministers, or a similar body.[1]

- *Determining medium-term resource needs of spending agencies (the bottom-up approach)*. Spending agencies prepare spending plans based on sector strategies and the estimated costs of continuing and new activities. These are translated into multiyear budget requests. In formulating their requests, spending agencies typically have to use centrally provided cost assumptions (for example, assumptions about salaries and prices) presented in the budget circular. In addition, the Ministry of Finance usually specifies initial allocations, in which case budget requests are a vehicle for spending agencies to justify requests for allocations that are different from those of the MoF.

- *Agreeing on expenditure allocations and finalizing the annual budget (the reconciliation process)*. The ministry reviews the budget requests of spending agencies, taking into account sector strategies and the resource envelope. Based on discussions with spending agencies, additional guidance provided by the cabinet, and consideration of the required tradeoffs, decisions are made, and agreement is reached on multiyear allocations for spending agencies and possibly programs. The annual government budget is prepared, endorsed by the cabinet, and submitted to parliament for approval. Spending agencies subsequently finalize their sector strategies and spending plans.[2]

MTEFs can also be viewed as a sequence of three increasingly demanding stages. This view is based on an approach to breaking down MTEFs suggested by Castro and Dorotinsky (2008), but it is applied differently. According to them, and most others who adopt a similar approach, a country's MTEF status is determined by the combination of stages adopted. For the purposes of this study, a country's MTEF status is defined by the highest MTEF stage achieved, assuming that the previous stages are in place. This approach has been chosen to facilitate the study's empirical work, which requires that MTEF stages be mutually exclusive. The three stages for an MTEF are as follows:

- *A medium-term fiscal framework (MTFF)*. This encompasses the top-down specification of the aggregate resource envelope and the allocation of resources across spending agencies. Putting in place an MTFF is desirable regardless of a country's level of budgeting capacity, because providing a medium-term macro-fiscal framework for budget preparation can improve the quality of even quite basic input-oriented annual budgeting.

- *A medium-term budgetary framework (MTBF)*.[3] In addition to the features of an MTFF, an MTBF includes both the bottom-up determination of spending agency resource needs and reconciliation of these with the resource envelope. Taking a medium-term approach to budget planning can improve expenditure prioritization even when emphasis is placed on the inputs needed to meet broad sector objectives and allocations are specified solely at the spending agency level. However, a more advanced MTBF can be combined with program budgeting to produce a programmatic MTEF, where allocations are linked to the objectives of and specified for individual programs. In the process, an MTBF can be a step in the direction of output-oriented budgeting.

- *A medium-term performance framework (MTPF)*. Starting from an MTBF, an MTPF completes the shift in focus from inputs to outputs, with an emphasis on the measurement and evaluation of performance. Thus it serves not only as a means of promoting results but also as a way of using budget allocations to encourage better performance (that is, by linking funding to results). An MTPF, and therefore a full-fledged MTEF, is a pinnacle reachable only by those countries that have implemented a well-functioning MTBF.

Spending strategies play a key role in determining the effectiveness of an MTEF. More specifically, under an MTBF spending agencies have to justify their budget requests by referring to *sector or agency strategies* that support them. This is the case whether the approach to budgeting is input or output oriented. If the former, input needs are explained by referring to strategic objectives (that is, placing more emphasis on preventive health necessitates hiring X doctors and Y nurses); if the latter, emphasis is placed on the cost of meeting output targets (that is, increasing primary school enrollment by X percent requires increasing the allocation for primary education by Y percent). A *national strategy*, which is a top-down statement of high-level expenditure priorities, is also needed. There is a presumption that sector strategies are consistent with a broader national strategy and that decisions about resource allocation across sectors are guided by such a strategy. However, national strategies often do not exist, at least not explicitly, in which case there is little to guide decisions about the budget allocations of different sectors. Moreover, when they do exist—for example, in countries that have introduced an MTEF but retained multiyear national planning—the two are often quite separate. It is also the case that the

links are quite weak between poverty reduction strategy papers (PRSPs), which are a limited form of national strategy, and budget allocations (World Bank 2007). The lack of a national strategy is a significant gap in the design of MTEFs and a potential obstacle to their effectiveness.

Specific Design Issues

Several design issues have to be addressed in implementing MTEFs. Countries have options when it comes to determining the key features of their MTEFs.

Coverage

Which levels of government should be included and what categories of spending should be constrained? Broad coverage is the most effective because it ensures that all spending is subject to scrutiny and prioritization under an MTEF.

A central government MTEF only covers central transfers to subnational governments. Ideally, a government-wide MTEF should cover subnational governments that have substantial budgetary responsibilities, but this may not be feasible when subnational governments have a significant degree of spending autonomy, at least with regard to using an MTEF for making decisions about general government spending as a whole. However, larger subnational governments should be encouraged to adopt their own MTEFs. Moreover, for analytical purposes at the national level, attention should always be paid to the size, structure, and efficiency of general government spending.

There is a tendency to frame the debate about the appropriate coverage of an MTEF in terms of what is and is not nondiscretionary spending. Thus some governments exclude interest and entitlements from MTEF coverage because of their nondiscretionary nature. Others exclude a wider range of spending (for example, aid-financed spending, capital spending). However, in principle, all spending programs (at the relevant level of government) should be covered, and attempting to distinguish discretionary from nondiscretionary spending misses the point: the larger the share of total spending that is excluded from scrutiny under the MTEF, the larger the potential fiscal discipline and efficiency gains that are forgone. Moreover, the distinction between discretionary and nondiscretionary spending can be manipulated to lessen scrutiny. It is also the case that some spending, while fixed in the

short term, can be changed over the longer term as priorities shift and new policy options emerge.[4] Australia, for instance, applies its MTEF to all spending, even though close to three-quarters of spending is appropriated via permanent or standing appropriations as opposed to annual appropriations.

Off-budget spending also creates a challenge for MTEFs, since it routinely falls outside normal budget scrutiny, especially in countries with substantial natural resource revenues. However, spending agencies often pursue important policy objectives through extrabudgetary funds, in many cases using earmarked revenue, and this fact should be taken into account in determining medium-term budget allocations. Similarly, insofar as governments provide guarantees that could have implications for future spending, expected calls on guarantees should be taken into account in making spending decisions. While there may be a case for placing limits on the stock of guarantees or new guarantees (as part of debt management) to limit future spending arising from guarantees, an MTEF contingency reserve is needed to accommodate the potential impact of guarantees on costs and other fiscal risks.

Detail

How disaggregated should an MTEF be by spending agency and program? It is usual to specify expenditure allocations under an MTEF at the spending agency level since this is the level at which spending is controlled. Where allocations are specified at the program level, they are often indicative, and spending agencies have some freedom to switch spending between programs. In any event, allocations for capital and current spending should be clearly distinguished. Under program budgeting, specifying program allocations (that is, moving to a programmatic MTEF) is justified, although too detailed a program breakdown can leave spending agencies with insufficient discretion. Moreover, large programs cut across spending agencies; insofar as possible, these should be broken into subprograms specific to one spending agency, so that joint responsibility for program implementation does not result in coordination failures and undermine accountability.

Time Frame

How long a time period should an MTEF cover, and how frequently should it be revised? Nearly all MTEFs cover three or four years. First-year allocations overlap with those of that year's annual budget, in some cases (for example, France and the United Kingdom) second-year

allocations are fixed, and out-year allocations are indicative, in the sense that they convey to spending agencies what they can reasonably expect to spend in those years based on unchanged (that is, existing and planned) policies, current macro-fiscal projections, and other relevant factors (such as the separately projected costs of entitlement programs). It is therefore understood that out-year allocations can be changed to reflect policy, economic, and other developments. An MTEF that is partly or wholly fixed for the time period it covers is, in effect, a multiyear budget, although multiyear appropriations are unusual. Out-years are rolled forward each year, with the first out-year providing the basis for the next year's budget (or the following year's where the second MTEF year is fixed). In rolling forward, policy adjustments may have to be assumed and allocations altered if, for example, adverse economic developments imply budget outcomes that are inconsistent with broader macro-fiscal targets. In other words, the out-years of the MTEF have to be plausible. An initial MTEF should be revised to reflect final budget allocations.

Expenditure Ceilings and Forward Estimates

How should an MTEF seek to constrain spending? MTEF spending allocations are often specified as expenditure ceilings, which are regarded as the ultimate disciplining mechanism under an MTEF. However, while first-year annual budget ceilings are usually hard in the sense that they can be relaxed only in exceptional circumstances, out-year ceilings tend to be no more than indicative. However, with multiyear budgeting, ceilings can be binding over the life of an MTEF, either in nominal or in real terms. Denmark and the Netherlands set real ceilings for each year of a four-year MTEF, while Sweden sets nominal ceilings for its entire four-year MTEF. The case for the former as opposed to the latter approach rests largely on the unpredictability of inflation and a desire to limit countercyclical fiscal impulses to the revenue side of the budget (for more detail about the use of expenditure ceilings in Denmark, the Netherlands, and Sweden, see Ljungman 2008). Forward estimates can refer to different things. Sometimes they amount to no more than projections of spending based on unchanged policies that are used as a guide for determining final spending allocations reflecting new priorities and for setting ceilings. As such, they are a routine input into MTEF preparation.[5] However, they can (as in Australia) represent a commitment of the resources that a spending agency will receive if policies, projections, and so forth do not change; as such, they can be

regarded as conditional out-year ceilings. While an MTEF can signal that governments are committed to sound fiscal policies, ceilings could be cast as expenditure rules to make them more effective in disciplining spending agencies, with explicit sanctions if spending exceeds ceilings (budgets could be cut or spending agency heads could be penalized). While expenditure rules are a useful disciplinary device, coverage can become an especially contentious issue if there are sanctions, since a spending agency does not want to be held accountable for something it cannot control.[6]

Margins

How should scope be provided to respond to unanticipated developments? Margins can be implicit or explicit. The use of conservative macroeconomic and revenue forecasts often provides an implicit margin, although if forecasts are systematically biased in this way, spending agencies are likely to anticipate this and reflect it in their budget requests. Conservative forecasts are in part a reaction to past optimism bias (which contributed to deficits and debt by treating bloated expenditure allocations as entitlements). Aiming to overperform relative to fiscal targets also provides an implicit margin. The intent and transparency of such approaches are difficult to defend. It is far better to use realistic forecasts (possibly reflecting independent input) and targets, which make the budget expenditure envelope more credible. Reliance should then be placed on contingency reserves to respond to revenue shortfalls and legitimate expenditure overruns. However, contingency reserves are meant to allow normal and modest budget deviations, both negative and positive, to be managed in a routine manner. The causes and consequences of larger deviations should be assessed and responded to appropriately through budget adjustments. Contingency reserves can be held by the central government for distribution across spending agencies, by spending agencies for distribution across programs, or by both. The last makes the most sense. The MoF can also ask spending agencies to identify programs and projects they would expand or new initiatives they would implement if resources are higher than projected and those they would cut if they are lower.

Institutional Responsibilities

Which agency should oversee application of the MTEF? It is often argued that a strong MoF is needed to steer the MTEF process to conclusion, although some say that an overly intrusive MoF can undermine

the legitimacy and effectiveness of the process. Whether the MoF is in a position of institutional strength may depend more on the budget legacy than on any decision made in connection with an MTEF. In any event, solid support from parliament and the cabinet is needed if an MTEF is to succeed. Spending agencies also have to be fully engaged. Institutional responsibilities are discussed in more detail below.

MTEF Good Practices

Countries have MTEFs with different characteristics and features. While it is possible to distill these as a set of *best* practices, these would be drawn largely from advanced economies with the best-functioning budget systems. More helpful for developing countries is a set of *good* practices to which most could aspire as they develop an MTEF, especially as they move through the three stages of an MTFF, MTBF, and MTPF. Box 3.1 contains such a set of MTEF good practices.

Data and Classification

This study uses a wide range of source material to determine the status of a country's MTEF. However, establishing which countries have an MTEF and what type of MTEF they have (fiscal, budgetary, or performance)—defined by the highest stage achieved—is sometimes unclear from what is known about a particular country's approach to budgeting. This study uses an indicators-based approach to identify and classify MTEFs, relying on a wide range of information, and then checks its classification with public financial management and country experts inside and outside the Bank, revising the classification as necessary. Box 3.2 summarizes how MTEFs are classified, and appendix C discusses in more detail the data and approach to classification and presents the full coding by country.[7] In the final analysis, a country's status is a judgment call. Moreover, as the description of MTEF characteristics suggests, not all MTFFs, MTBFs, and MTPFs are the same, and it is necessary to be alert to the possible implications of heterogeneity within MTEF stages.

MTEFs around the World

As of end-2008, 132 countries—more than two-thirds of all countries—are considered to have implemented a formal MTEF or an equivalent

Box 3.1

Guide to MTEF Good Practices

Medium-term fiscal framework

- Debt and deficit targets are established using model-based debt sustainability analysis, taking into account constraints imposed by policy rules.
- Revenue forecasts are based on revenue department or other tax and non-tax receipt models.
- Independent macroeconomic forecasts are used, and fiscal forecasts are subject to scrutiny by an audit office, fiscal council, or similar consultative body.
- Aid commitments are covered by debt sustainability analysis and revenue forecasts.
- The Ministry of Finance (MoF) issues a background paper on macro-fiscal objectives to inform budget decision making and form part of the budget documentation.

Medium-term budgetary framework

- The MoF issues a budget strategy paper describing the macro-fiscal framework and providing a broad indication of national development and budgetary priorities for the medium term.
- A budget circular is sent to spending agencies outlining the basis on which they should prepare their medium-term budget requests. This circular indicates the availability of budget resources, usually in the form of provisional agency or program expenditure ceilings, and the aggregate cost assumptions to be used, including changes in inflation and public sector pay.
- The budget requests of spending agencies reflect strategic objectives, the cost of current and new activities, expected cost recovery, and other relevant factors.
- Final expenditure ceilings are reflected in the annual budget submitted to the legislature for consideration.
- Spending agency budgets are finalized, and sector strategies are revised to reflect budget realities.
- Spending agency budgets and sector strategies are published.

Medium-term performance framework

- Sector strategies discuss program outputs, outcomes, and performance.
- Agency output, outcome, and performance indicators are used to establish budget targets.
- Spending agencies report on results relative to targets. Comprehensive spending reviews are conducted periodically.

Box 3.2

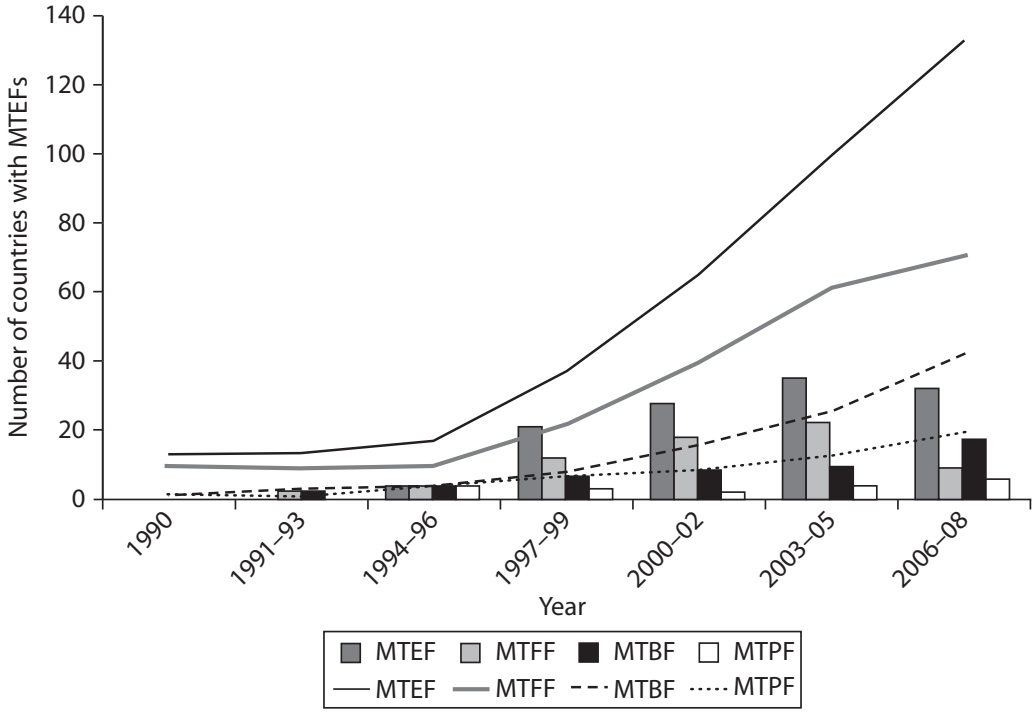
MTEF Classification and Indicators Used in This Study

A *medium-term fiscal framework (MTFF)* determines the availability of aggregate resources as an input into budget formulation and sets expenditure ceilings for spending agencies as a basis for budget implementation. The MTFF is top-down in nature, focuses on allocating resources to purchase inputs, and holds spending agencies accountable for the use of inputs. MTFF indicators include budget or other reports that contain the government's medium-term macrofiscal strategy, macroeconomic and fiscal forecasts, and the results of debt sustainability analysis, as well as agency expenditure ceilings formulated in the absence of an MTBF. Externally imposed MTFFs, such as those embodied in International Monetary Fund programs, poverty reduction strategy papers, or European union stability or convergence program targets, are not counted as MTFFs unless the preceding indicators also suggest that they underpin a country-driven MTFF.

A *medium-term budgetary framework (MTBF)* specifies spending agency and program expenditure ceilings based on a compromise between the availability of top-down resources determined using an MTFF and the need for bottom-up resources to finance sector spending plans. MTBFs are primarily input based, in that expenditure allocations may be determined by reference to outputs or outcomes, but spending agencies are still held accountable for the use of inputs. MTBF indicators include a budget strategy paper detailing budgetary objectives and constraints, spending agency or other reports explaining the objectives and strategies of aggregate and sector expenditures, budget circulars detailing medium-term expenditure allocations, and budget reports containing medium-term expenditure ceilings or forward estimates. In addition to having an MTFF, countries with an MTBF produce such documents or otherwise demonstrate that the allocation of budget resources has a medium-term, strategic focus. Some countries begin by piloting an MTBF for selected spending agencies; this study records a piloted MTBF as an MTFF.

A *medium-term performance framework (MTPF)* shifts the focus of attention from spending agency or program inputs to agency or program outputs and outcomes, holding spending agencies responsible for their performance and linking funding to results. MTPF indicators include budget, spending agency, or other reports explaining program objectives and strategies, listing specific agency or program output targets, and explaining results. In addition to having an MTBF, countries with an MTPF produce this information or otherwise demonstrate that budgeting focuses on performance.

Figure 3.1 Global MTEF Adoption, 1990–2008



Source: World Bank.
Note: MTBF = medium-term budgetary framework; MTEF = medium-term expenditure framework; MTFF = medium-term fiscal framework; MTPF = medium-term performance framework. The data lines show the cumulative number of countries with MTEFs. The bars show the number of new countries with MTEFs.

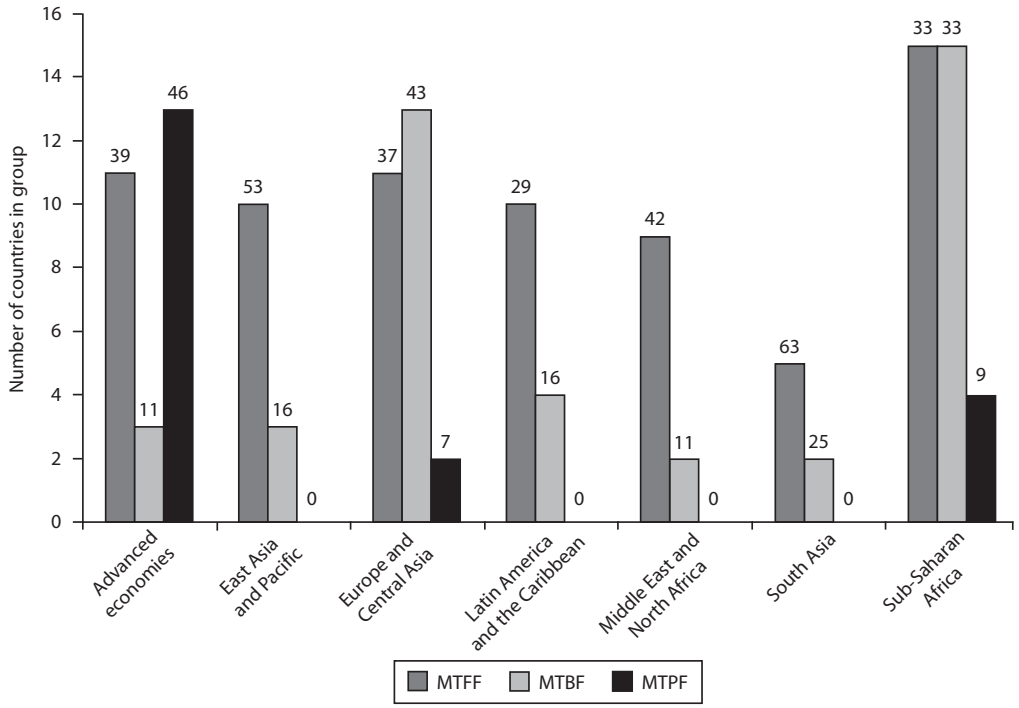
arrangement. As figure 3.1 shows, most of these have been implemented since the late-1990s. The widespread adoption of MTEFs coincided with the introduction of PRSPs, the inclusion by the Bank and other donors of an MTEF in their standard advice on budget reforms, and the post–Asian crisis pickup of interest in promoting and safeguarding fiscal discipline. More generally, many low-income and emerging-market countries implemented MTEFs in an effort to improve the link between the mobilization and use of public resources and the achievement of development goals, while several advanced economies embraced MTEFs as interest in modern budget reforms took off. As expected, MTFFs are the most commonly implemented form of MTEF, but recently there has been a shift to MTBFs and MTPFs. In 2008, the composition of MTEFs across countries included 71 MTFFs, 42 MTBFs, and 19 MTPFs, with countries transitioning to MTBFs and MTPFs as opposed to introducing new MTEFs, especially in the case of MTPFs (see table 3.1).

Table 3.1 Sources of MTEF Growth, 1990–2008

	Number of MTEFs		*Change, 1990–2008*		
Stage	*1990*	*2008*	*New MTEFs*	*Transitions*	*Reversals*
MTFF	9	71	104	–41	–1
MTBF	1	42	21	23	–3
MTPF	1	19	0	18	0
MTEF	11	132	125	0	–4

Source: World Bank.
Note: MTBF = medium-term budgetary framework; MTEF = medium-term expenditure framework; MTFF = medium-term fiscal framework; MTPF = medium-term performance framework. The MTFF reversal occurred in Argentina; the MTBF reversals occurred in Argentina, Estonia, and the United States. Out of the 18 transitions to MTPFs, 9 are from MTFFs and 9 are from MTBFs.

Figure 3.2 MTEF Adoption in the Advanced Economies and Developing-Country Regions, 2008



Source: World Bank.
Note: MTBF = medium-term budgetary framework; MTEF = medium-term expenditure framework; MTPF = medium-term performance framework. Percentage of countries in the region are displayed at the top of the bars.

MTEF coverage varies significantly across country groups. Figure 3.2 shows that MTEFs have achieved almost complete coverage of advanced economies where, as can be seen in figure 3.3, MTEFs were adopted in two waves.[8] As noted, in the late 1980s and early 1990s, some countries followed Australia's lead, and then in the late 1990s

Figure 3.3 MTEF Adoption in the Advanced Economies and Developing-Country Regions, 1990–2008

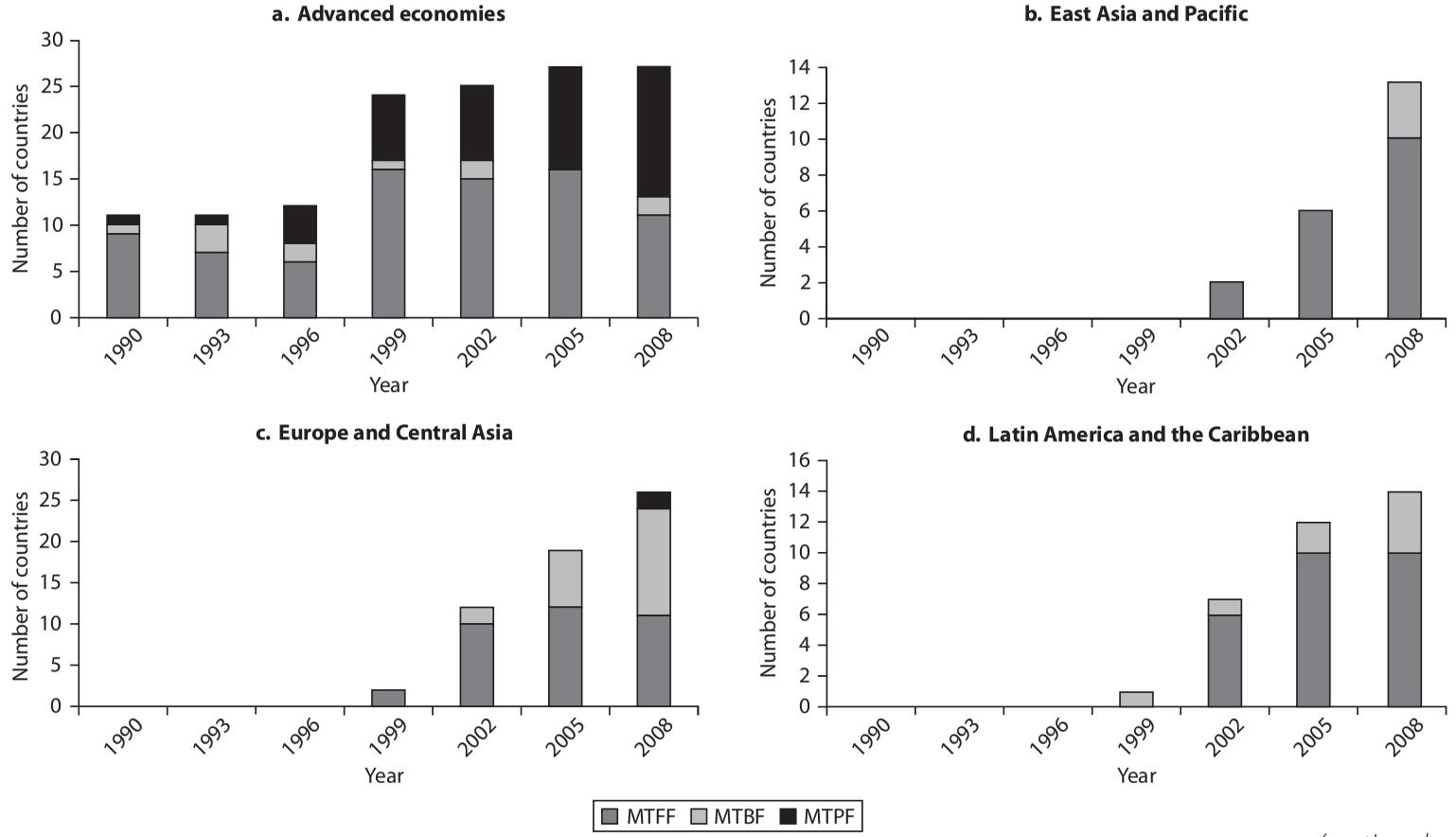


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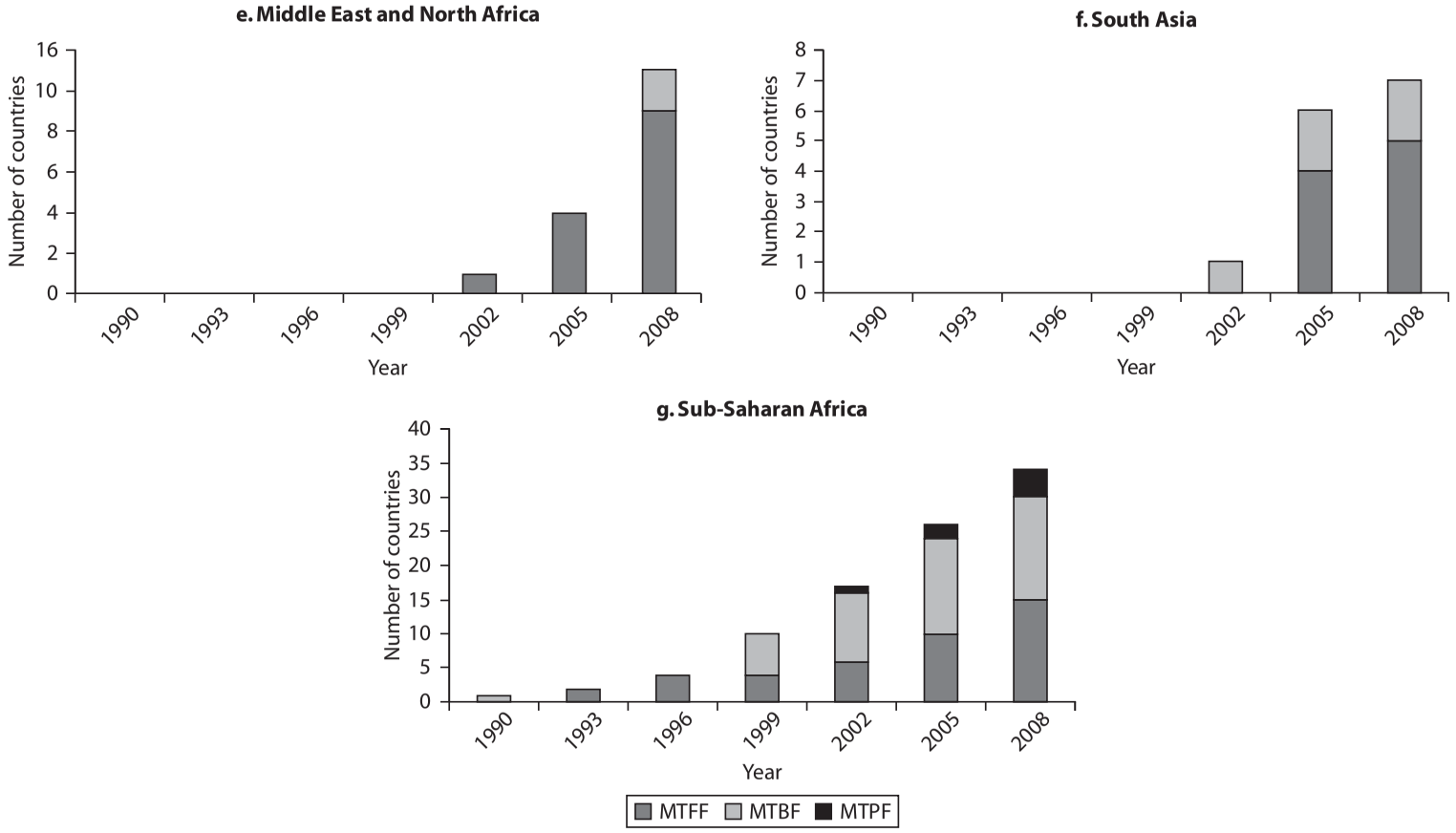
Figure 3.3 *(continued)*

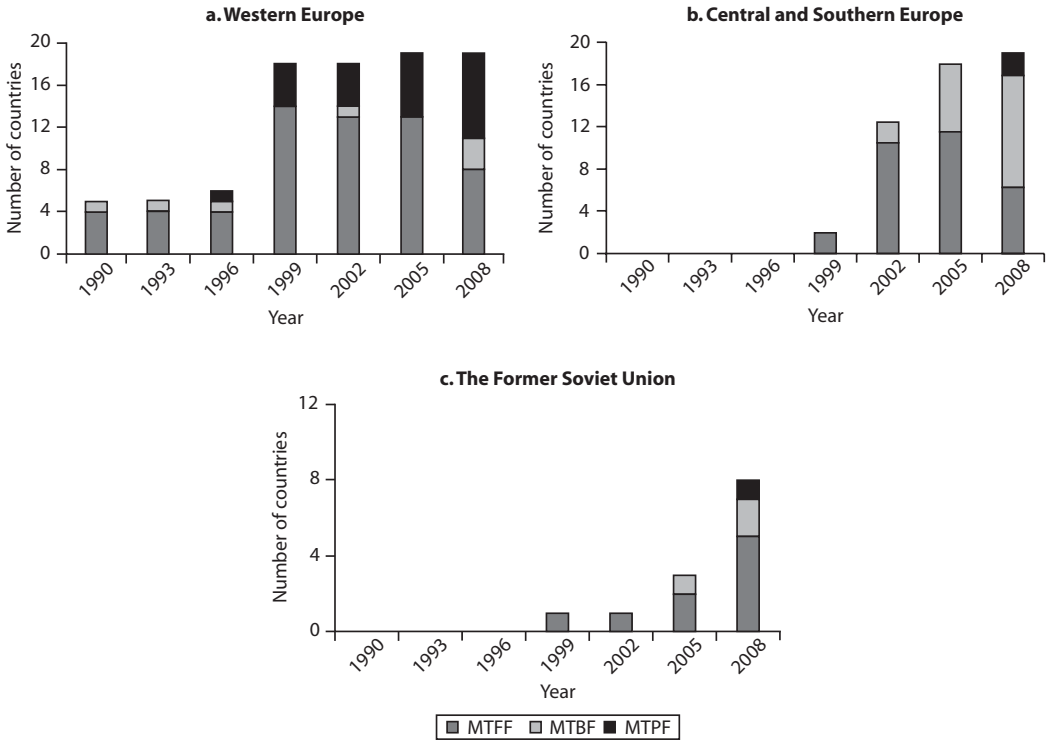


Source: World Bank.
Note: MTBF = medium-term budgetary framework; MTEF = medium-term expenditure framework; MTPF = medium-term performance framework.

MTEFs were introduced mainly in the European Union to support budgetary targets set as a precondition for the monetary union. Just under half of MTEFs are now MTPFs, while there are relatively few MTBFs, suggesting that when advanced economies decide to move beyond an MTFF, focusing on performance is a natural development given the sophistication of their budgeting systems. MTEFs have also achieved broad coverage of the countries in Europe and Central Asia, in part reflecting their universal adoption in Western Europe. As shown in figure 3.4, coverage spread faster and farther in Central and Southern Europe than in the former Soviet Union, but this is not surprising given that the former Soviet Union opened up later and that countries of Central and Southern Europe sought to integrate quickly with Western Europe.[9]

Building on an early start in Uganda, MTEFs spread across Sub-Saharan Africa.[10] Three-quarters of countries in the region had one by the end of 2008. There were an equal number of MTFFs and MTBFs,

Figure 3.4 MTEF Adoption in Europe, by Region, 1990–2008



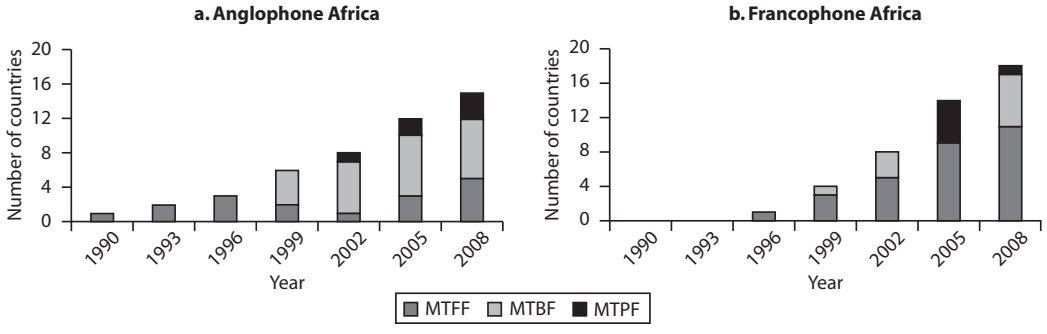
Source: World Bank.
Note: MTBF = medium-term budgetary framework; MTEF = medium-term expenditure framework; MTPF = medium-term performance framework.

and three countries (Burkina Faso, Mauritius, and Namibia) followed South Africa's lead and implemented an MTPF. While MTEFs can be thought of as Anglophone in origin, figure 3.5 reveals that they are now more numerous in Francophone than in Anglophone Africa, taking off, in particular, after France introduced an MTEF in the late 1990s. MTEFs have also been adopted by most countries in South Asia, with Nepal and Sri Lanka having MTBFs.

MTEFs are less widespread in other regions. However, there has been a recent spurt of adoptions in East Asia and the Pacific, including MTBFs in Cambodia, Thailand, and Vanuatu. The situation is similar in Latin America and the Caribbean, where several countries have introduced MTFFs following years of efforts to use similar frameworks to manage fiscal policy under IMF programs. Only four countries have moved beyond this and introduced an MTBF—Argentina, Colombia, Nicaragua, and St. Lucia—although Brazil's budgeting system has the characteristics of an MTBF.[11] In the Middle East and North Africa, MTEFs are a very recent innovation; only Algeria and Jordan have an MTBF, while the major oil-exporting countries (Saudi Arabia and the United Arab Emirates) do not even have an MTFF.

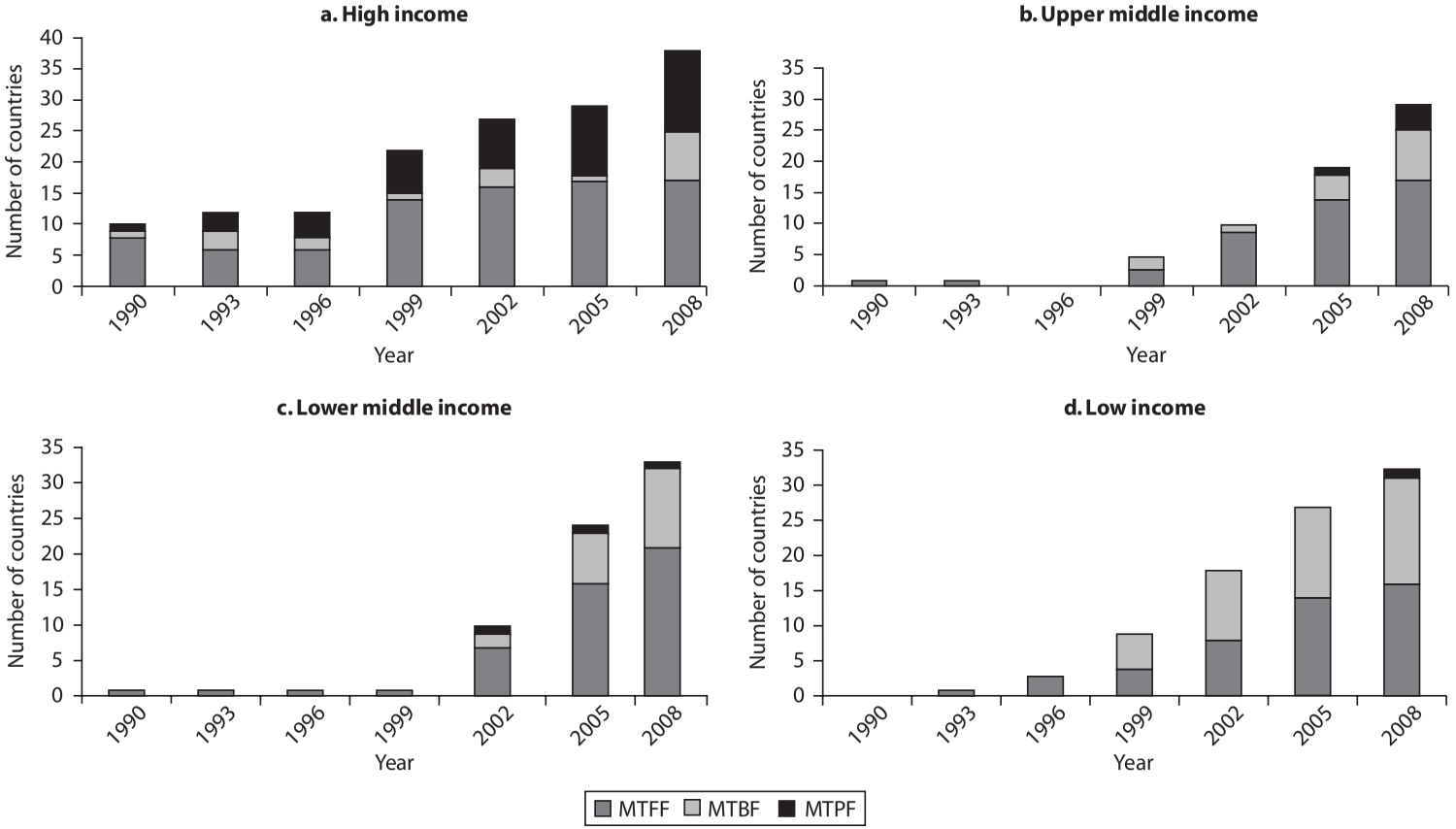
These patterns of adoption translate into fairly uniform coverage across income levels. Apart from the widespread MTEF adoption in high-income countries, which are essentially the advanced economies, there is little difference across upper middle-, lower middle-, and low-income countries; indeed, if anything, MTEF adoption appears to be inversely related to income level (see figure 3.6). This largely reflects the experience in Sub-Saharan Africa, on the one hand, and the Middle East and North Africa, on the other.

Figure 3.5 MTEF Adoption in Anglophone and Francophone Africa, 1990–2008



Source: World Bank.
Note: MTBF = medium-term budgetary framework; MTEF = medium-term expenditure framework; MTPF = medium-term performance framework.

Figure 3.6 MTEF Adoption by Income Level, 1990–2008



Source: World Bank.

Note: MTBF = medium-term budgetary framework; MTEF = medium-term expenditure framework; MTPF = medium-term performance framework.

Notes

1. Allocations across spending agencies can be forward estimates or ceilings. This distinction is discussed below.
2. This process can have additional stages, based on more detailed timelines for MTEF preparation. The Bank's *Public Expenditure Management Handbook* lists seven stages, with one stage involving three steps (World Bank 1998).
3. The term MTBF is sometimes used to describe the overall framework, with the term MTEF being used to describe the MTBF stage. There is some logic to this, but MTEF is more commonly used as the umbrella term.
4. Thus public pension spending may be difficult to change in the short term, but pension reforms (cutting benefits, raising contribution rates, pushing back retirement age, shifting to defined-contribution plans, relying more on private annuities, and so forth) offer the prospect of lower expenditures over the longer term.
5. Ceilings that are not based on forward estimates should be reserved for emergencies; for example, cash limits might be used to avoid a budget crisis.
6. The use of expenditure ceilings to support deficit or debt rules is discussed below.
7. In addition to distinguishing MTFFs, MTBFs, and MTPFs, an attempt is made to identify countries that have medium-term macro-fiscal frameworks agreed to under International Monetary Fund programs and to compare their effects with those of MTFFs.
8. Cyprus is the only advanced economy not to have implemented an MTEF.
9. The countries without an MTEF are Azerbaijan, Belarus, Montenegro, and Turkmenistan.
10. Botswana, which applies a national planning framework, was also an early adopter of an aggregate fiscal framework.
11. Brazil's budgeting system is the subject of a case study in appendix G.

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CHAPTER 4

What Works and Why

Medium-term expenditure frameworks (MTEFs) can promote fiscal discipline by addressing several causes of deficit bias. By specifying an overall resource constraint, MTEFs rein in the political tendency to overcommit public resources (the common pool problem) by requiring policy makers to acknowledge that the total amount of resources is limited, to negotiate collectively, and to commit themselves to detailed multiyear fiscal constraints. Further, by imparting a medium-term perspective to budgeting and taking into account the future fiscal costs of government policies and programs, an MTEF can fill information gaps that allow politicians to renege on their commitments to implement affordable policies (the time consistency problem). A medium-term perspective also encourages governments to conduct discretionary stabilization in a symmetric, countercyclical manner, rather than with the sort of asymmetry (countercyclical in bad times and procyclical in good times) that leads to rising deficits and debt (Kumar and Ter-Minassian 2007).

In that they set a top-down resource constraint, medium-term fiscal frameworks (MTFFs) should have a significant impact on fiscal discipline. Of course, gains in fiscal discipline are predicated on having an MTFF that works as intended. If spending agencies view allocations or ceilings as minimum entitlements rather than as constraints, MTFFs could be a source of fiscal indiscipline and deficit bias (Schick 2010).

Since medium-term budgetary and performance frameworks (MTBFs and MTPFs, respectively) incorporate an MTFF, they should have an increasingly stronger effect on fiscal discipline than an MTFF alone. This is, in part, because countries that have the capacity to implement an MTBF or an MTPF will have greater success in working with an MTFF. It is also a consequence of better prioritization and more emphasis on performance, which can bring into sharper focus the payoff to fiscal discipline and the costs of arbitrary fiscal adjustment.

Prioritization guided by longer-term sector strategies should improve the allocation of resources. Insofar as spending agencies prepare sector strategies, identify their resource needs, and allocate their budgets according to strategic priorities, this bottom-up prioritization should produce a shift to spending with higher economic and social returns. However, the full payoff to prioritization requires deciding how to allocate resources across sectors, which is done as part of the reconciliation between the top-down and bottom-up approaches involving a lead agency, normally the Ministry of Finance (MoF), and spending agencies; in connection with this, less strategic guidance may be available (for example, in the form of a national economic or development program or plan). Moreover, as discussed later, these may be new roles for all the agencies involved, and considerable learning by doing may be necessary before the potential gains are fully realized. In addition, difficult decisions have to be taken to cut low-priority but often politically sensitive spending.

The outcome of effective prioritization should be a shift away from unproductive spending. Poor-quality investment, distorting and untargeted subsidies, bloated civil services, and the like should not survive scrutiny under an MTEF, while productive spending on economic and social infrastructure, health and education services, and other growth- or development-friendly activities should be favored. So the introduction of an MTBF should certainly be associated with an increase in the total share of productive spending, and for an MTPF the impact should be somewhat stronger. An MTFF alone may also have a beneficial effect on resource allocation in that a medium-term resource constraint should lead to some reexamination of spending even with annual, input-focused budgeting.

Spending should also become less volatile. Since the path of spending should reflect the medium-term rather than the short-term availability of resources, total expenditures should be less volatile, with an MTFF having the main influence in this connection. There should also be a contribution from an MTBF—and to a lesser extent an MTPF—since better prioritization should lead to a more stable level of spending.

The volatility of the composition of spending should also be affected. In the short term, compositional volatility should increase following implementation of an MTBF, as spending is reallocated to more productive sectors and programs. Thereafter, insofar as spending decisions are guided by strategic priorities with a longer-term focus, the composition of spending should become less volatile. However, this depends on how previous spending has responded to short-term variations in the availability of resources.

If, on the one hand, agency and program allocations are subjected to ad hoc changes as aggregate spending responds to short-term variations in resources, then longer-term compositional volatility would probably decline. If, on the other hand, spending is cut and restored across the board or a few spending items are adjusted up and down, volatility would probably increase. On balance, based mainly on cross-country evidence that fiscal adjustment is often of low quality, it seems more likely that longer-term compositional volatility would decline (for a description of the characteristics of large fiscal adjustments, see Tsibouris et al. 2006). An MTPF could lead to some additional reduction in compositional volatility, while an MTFF could have a modest beneficial effect.

Technical efficiency is concerned with the link between inputs and outputs. Ideally, the link would be with outcomes, not outputs. Spending programs are typically directed toward achieving economic and social outcomes, such as stable growth, poverty reduction, social protection, law and order, and national security, but final outcomes such as these are often influenced by a wide range of factors other than government spending and are difficult to measure.

Outputs are measurable indicators linked with final outcomes, although some can be thought of as intermediate outcomes. Thus education spending to build more schools is an input, enrolling more children in school is an output, increasing literacy is an intermediate outcome, and poverty reduction and economic growth are final outcomes from education spending. The tendency is to measure a mix of outputs and intermediate outcomes in assessing agency performance and to be imprecise in describing them as either outputs or outcomes. With this distinction in mind, the idea in thinking about technical efficiency is that a spending agency is undertaking a constrained optimization exercise and is trying either to maximize outputs or outcomes with a given amount of budget resources or to minimize the budget resources used to achieve a given set of outputs or outcomes.

Budget allocations deriving from such an exercise are technically efficient (although they may not be allocatively efficient because the government could function cost-effectively but do the wrong things). Improved technical efficiency may follow from an MTFF but is more likely a consequence of an MTBF and MTPF, with the latter likely to have the largest effect, as budget funding is influenced by results in the form of outputs or outcomes.

Measurement and Hypotheses

This study uses the following measures of fiscal performance:

- *Fiscal discipline*—the overall balance of the central government as a share of gross domestic product (GDP) (fiscal balance). Central government data provide limited coverage of government revenue and spending, especially in countries where subnational governments have significant fiscal responsibilities, but a time series of general government data is not available for all countries. Other fiscal indicators can also be used to measure fiscal discipline. Government debt is an obvious candidate, but it is influenced by factors that lead to stock adjustments (for example, debt relief, recapitalizations) that are decided outside the MTEF. There are also alternative measures of the fiscal balance (for example, the primary, current, and operational balance), but the overall balance, which measures the government's borrowing requirement, is appropriate for measuring the impact of an MTEF intended to ensure that total spending is constrained by the government's envelope of total resources.

- *Allocative efficiency*—volatility of total central government expenditure as a share of GDP (total expenditure volatility), general government health expenditure as a share of total expenditure (health expenditure share), and volatility of general government health expenditure as a share of total expenditure (health expenditure volatility).[1] Volatility is measured by changes in the deviation from trend.[2] Health spending is only one component of productive spending, but the main sources of internationally comparable expenditure data for the other sectors, especially the Government Finance Statistics of the International Monetary Fund (IMF), have too many gaps across countries and over time to be usable. Health spending data are only available for general government. It is important to acknowledge that the general applicability of the results of this study is limited by the exclusive focus on health spending.

- *Technical efficiency*—the difference between actual life expectancy and maximum life expectancy for a given level of health spending per capita (cost-effectiveness of health expenditure).[3] This measure of technical efficiency has clear limitations, both because it is just one indicator of health outcomes and because life expectancy is determined by a wide range of factors not taken into account by the analysis in this study.

Based on these measures, the following hypotheses are tested:

- *Fiscal discipline*—an MTEF improves the fiscal balance. An MTFF has the largest effect, with an MTBF and MTPF having an additional impact.

- *Allocative efficiency*—an MTEF reduces total expenditure volatility, increases health expenditure share, and reduces health expenditure volatility. With regard to total expenditure volatility, an MTFF has a large effect that is bolstered by an MTBF, while an MTPF may or may not have much of an additional effect. An MTBF has the largest effect on the share and volatility of health expenditures, an MTPF has an additional impact, and an MTFF may or may not have a significant effect.

- *Technical efficiency*—an MTEF increases the cost-effectiveness of health expenditure. An MTPF has the largest positive effect, and an MTBF has a smaller impact. Again, an MTFF may or may not have a significant effect.

Investigative Approaches

Three approaches are employed to examine the links between MTEFs and fiscal performance: event studies, econometric analysis, and case studies.

Event studies are a simple graphic description of the behavior of a variable of interest on either side of a particular event. The event in this case is the adoption of an MTEF, while the fiscal performance measures referred to above are the variables of interest. Event studies are based on the identification of a window of time around MTEF adoption. If the MTEF has its anticipated effect, during this window of time variables of interest should move in a direction consistent with improvements in fiscal discipline, allocative efficiency, and technical efficiency. Moreover, the period after adoption should be characterized by better fiscal outcomes than the period before adoption.

Event studies simply compare the values of key variables before and after MTEF adoption; they say nothing about correlation and causation. Therefore, the econometric analysis exploits variations in the data on MTEF status, fiscal performance, and other relevant variables in an attempt to discover whether MTEF adoption has a statistically significant impact on fiscal discipline, allocative efficiency, and technical efficiency.

Case studies can also throw light on whether country experience affects the impact of MTEFs, especially insofar as MTEFs might influence fiscal performance via their impact on the quality of budgeting.

The Hypothesis

It is important to state at the outset of the discussion of the report's empirical work that the econometric analysis has to address a potentially serious reverse causality (or endogeneity) problem. The hypothesis being tested is that MTEFs have a positive influence on fiscal performance. Lying behind this is the idea that countries are persuaded to adopt MTEFs because they want to improve fiscal discipline and spending efficiency. However, there is another possibility, which is that countries do something else to improve fiscal performance and then adopt an MTEF only after they have achieved a fiscal improvement on which to consolidate and build. This may be an easier option insofar as governments are not preoccupied with addressing fiscal imbalances and reducing wasteful spending. The reverse causality problem means that the latter effect may be mistaken for the former.[4] This is obviously more than an econometric issue, in that it addresses a key policy question.

To address the reverse causality problem, the econometric analysis uses instrumental variables techniques designed specifically for this purpose, with the result that this study can make some of the strongest statements to date about correlation and causation, especially with regard to the positive impact of MTEFs on fiscal discipline. Moreover, although the econometric analysis validates these statements, the event studies, which are described first, provide a clear indication of fiscal performance before and after MTEF adoption.

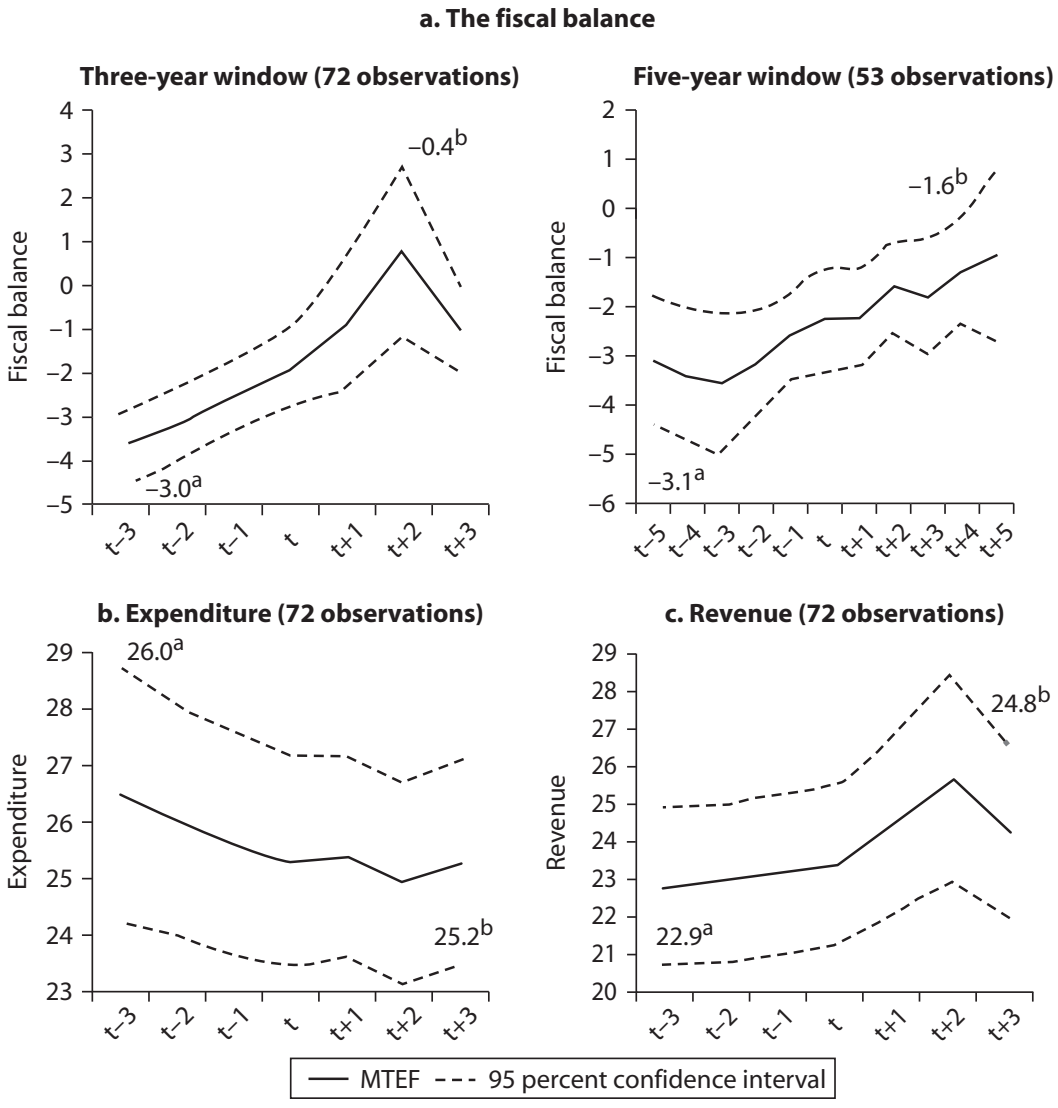
Event Study Comparisons

This section presents the methodology and results of the event study comparisons.

The event studies were conducted in the following way. The implementation date of each country's MTEF is normalized to year *t*,

distinguishing between MTFFs, MTBFs, and MTPFs. The measures of fiscal discipline, allocative efficiency, and technical efficiency, together with some supplementary variables, are averaged across countries and plotted for years $t-3$, $t-2$, $t-1$, t, $t+1$, $t+2$ and $t+3$, along with 95 percent confidence intervals. Given an interest in whether MTEFs spur better fiscal outcomes, it is instructive to compare years $t-3$, $t-2$, $t-1$ with years $t+1$, $t+2$ and $t+3$, and so averages for these periods are indicated in the boxes on each figure.[5] For example, as shown in figure 4.1, the average fiscal balance in the three years following MTEF implementation was –0.4 percent of GDP, compared with an average fiscal balance of –3 percent of GDP

Figure 4.1 MTEFs, the Fiscal Balance, Expenditure, and Revenue



Source: World Bank.
Note: MTEF = medium-term expenditure framework.
a. Pre-MTEF mean.
b. Post-MTEF mean.

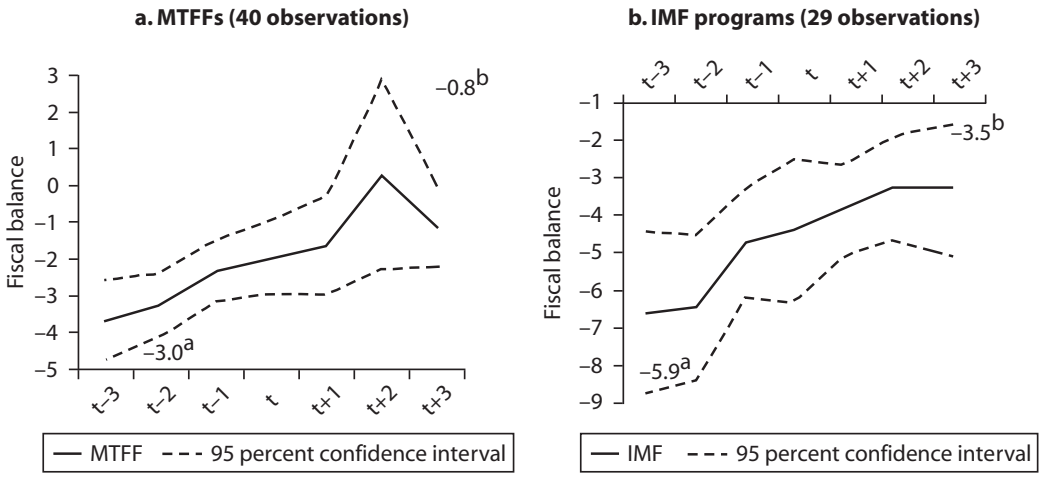
prior to implementation. Not all countries that have implemented MTEFs can be included in the event studies. This is because some MTEFs were in place or introduced very early or late in the 1990–2008 period. Also, since MTPFs are a relatively recent innovation, few countries have them. The event studies are based on a maximum of 72 MTEFs (40 MTFFs, 20 MTBFs, and 12 MTPFs).

The event studies suggest that fiscal discipline is stronger after MTEF implementation. Figure 4.1 shows that the fiscal deficit is, on average, around 2.6 percentage points of GDP lower in the three years following MTEF implementation than in the three years preceding it.[6] The fiscal improvement appears to be short-lived, with the fiscal balance weakening three years after MTEF implementation. However, an event study with a five-year window (panel a of figure 4.1) points to an improvement in the fiscal balance beyond the third year of MTEF implementation.[7] Figure 4.1 also indicates that the source of fiscal improvement is both lower spending and higher revenue, but more than two-thirds of the improvement comes from higher revenue. This could be interpreted as saying that improved fiscal positions reflect other policy changes that have led to improved revenue. In this connection, one possibility is that the adoption of MTEFs around the world coincided with the introduction of value added taxes that have considerable potential to generate revenue. Since MTEF implementation has attracted significant donor support, it may have triggered grant assistance. However, in both cases, the role of the MTEF may be to ensure that additional revenue is used at least in part to reduce deficits rather than being automatically spent.

The results for MTFFs are similar to those for MTEFs. However, figure 4.2 shows that the fiscal improvement is smaller, at 2.2 percentage points of GDP. This also derives almost entirely from higher revenue, suggesting that only MTBFs and MTPFs foster expenditure adjustment. The improvement in the fiscal balance before and after MTFF implementation looks much the same as in the years before and after an IMF program is put in place. This is not surprising because the macro-fiscal framework that anchors an MTFF is very similar to the one that underlies fiscal targets under IMF programs. However, as is clear from figure 4.2, IMF programs are usually agreed on under conditions of relatively great fiscal distress (the fiscal balance is, on average, 2.9 percentage points of GDP weaker than in the three years before MTFF implementation). The fiscal improvement is also slightly larger and sustained for longer.

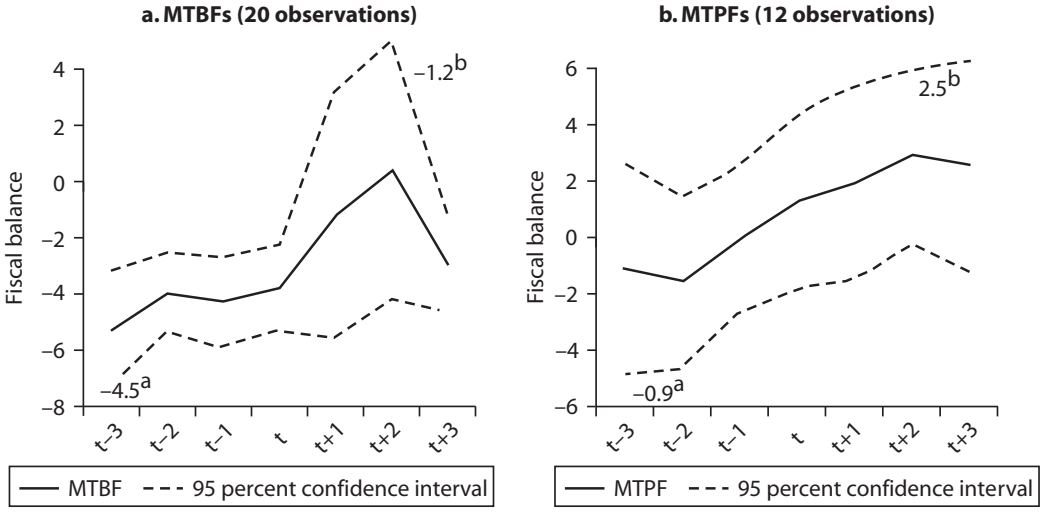
The implementation of both MTBFs and MTPFs is associated with larger improvements in the fiscal balance than the implementation of MTFFs. As figure 4.3 reveals, these improvements are 3.3 and 3.4

Figure 4.2 MTFFs, IMF Programs, and the Fiscal Balance



Source: World Bank.
Note: IMF = International Monetary Fund; MTFF = medium-term fiscal framework.
a. Pre-MTEF mean.
b. Post-MTEF mean.

Figure 4.3 MTBFs, MTPFs, and the Fiscal Balance



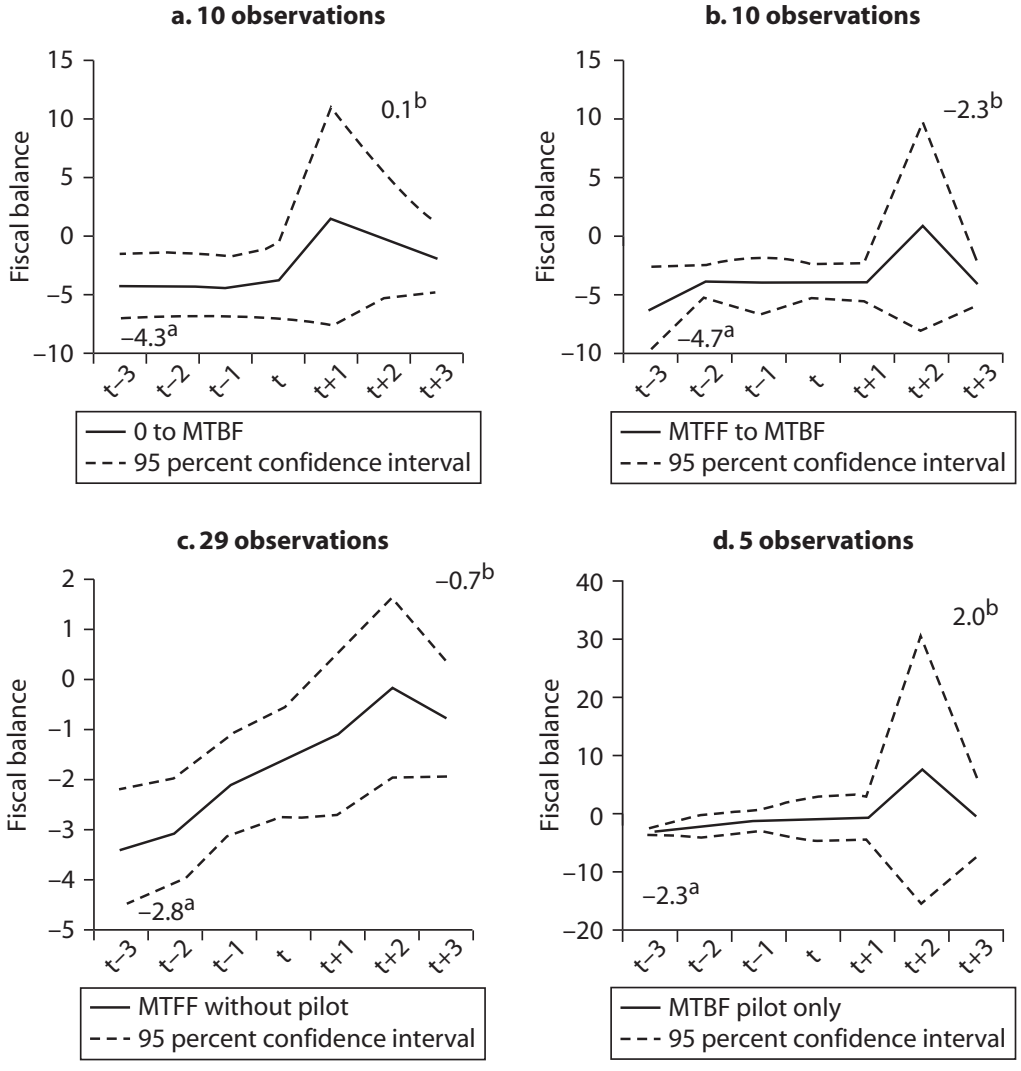
Source: World Bank.
Note: MTBF = medium-term budgetary framework; MTPF = medium-term performance framework.
a. Pre-MTEF mean.
b. Post-MTEF mean.

percentage points of GDP, respectively. MTPFs are also implemented in the context of much stronger fiscal positions, which could point to how a record of fiscal discipline provides countries with the opportunity to focus on improving efficiency as a means of further strengthening their fiscal position. That said, the small number of MTPFs means that this interpretation must be treated with caution.

It is useful to distinguish between the implementation of new MTEFs and the transition between MTEF stages and between full and piloted

MTEFs. In the case of MTBFs, where a distinction can be made between countries that introduce an MTBF with and without previously having an MTFF, the approach taken seems immaterial to fiscal discipline. Figure 4.4 shows that moving straight to an MTBF is associated with an improvement in the fiscal balance of about 4.2 percentage points of GDP, while implementing an MTFF (figure 4.2) and transitioning to an MTBF are each associated with improvements of about 2.2 and 2.4 percentage points, respectively. These outcomes are very similar. As indicated in box 3.2 in chapter 3, MTBFs that are piloted in select sectors are recorded as MTFFs,

Figure 4.4 MTEF Transitions, Pilots, and the Fiscal Balance

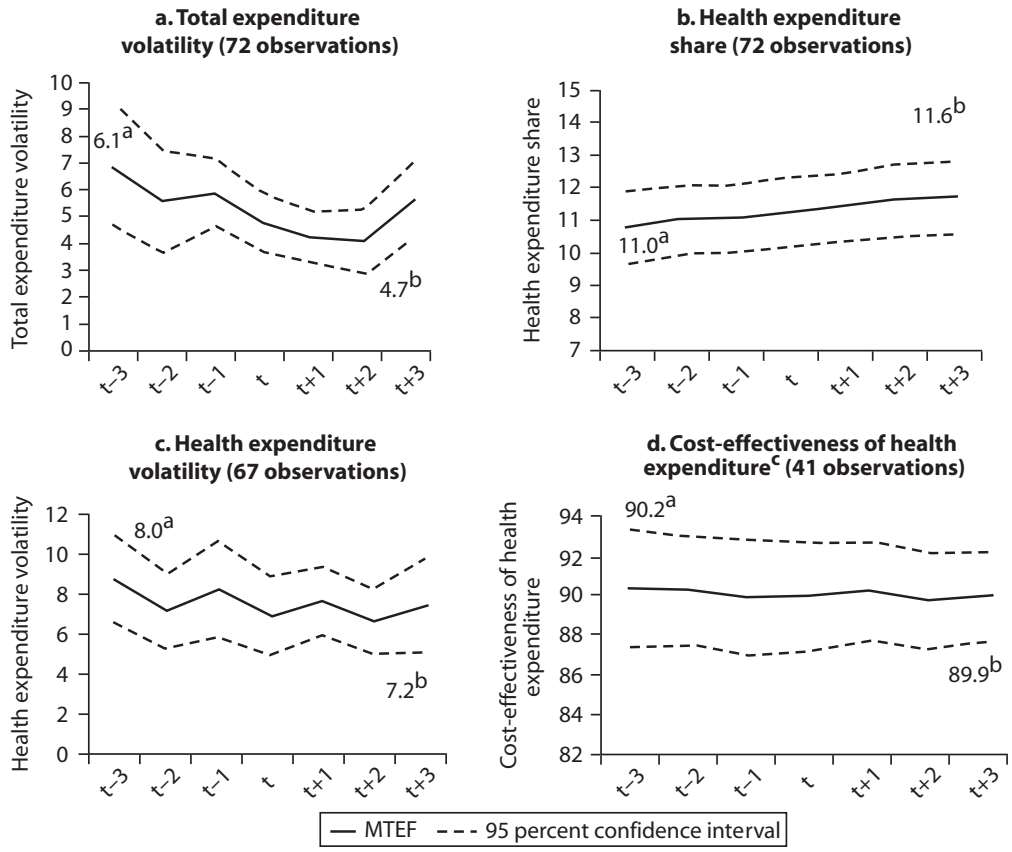


Source: World Bank.
Note: MTBF = medium-term budgetary framework; MTEF = medium-term expenditure framework; MTFF = medium-term fiscal framework.
a. Pre-MTEF mean.
b. Post-MTEF mean.

because it is assumed that the pilot is intended to test the MTBF approach and the systems designed to support it rather than to achieve significant improvements in resource allocation. However, figure 4.4 suggests that piloted MTBFs are associated with a fiscal improvement that is twice the size of the improvement associated with MTFFs alone. This suggests that an MTBF may have a large additional impact on fiscal discipline, but the sample of MTBF pilots is very small.

MTEFs are also associated with some improvement in efficiency. With regard to allocative efficiency, figure 4.5 points to less volatility in total expenditures, driven mainly by the impact of MTBFs (figure E.1 in appendix E). The health expenditure share increases only modestly, with little difference for the three MTEF stages (figure E.2 in appendix E), which may suggest that health spending was a sufficiently high priority before

Figure 4.5 MTEFs and Efficiency



Source: World Bank.
Note: MTEF = medium-term expenditure framework.
a. Pre-MTEF mean.
b. Post-MTEF mean.
c. A lower value of the index means an improvement in cost-effectiveness.

MTEF implementation and that any reallocation of expenditures occurred elsewhere.[8] However, health expenditures are less volatile after MTEF implementation. As for technical efficiency, the cost-effectiveness of health expenditures is much the same before and after MTEF implementation. Only an MTBF appears to be associated with any improvement (figure E.4 in appendix E). While MTPFs should be associated most closely with improved cost-effectiveness, the small sample of MTPFs prevents anything meaningful from being said about them, while the minimal variation in life expectancy and the short sample period are limiting factors affecting the analysis of technical efficiency more generally.

Econometric Analysis

The econometric analysis attempts to identify causal relationships between MTEFs and fiscal performance. The basic empirical relationship is as follows:

$$\text{fiscal performance} = f(\text{MTEF status, control variables}). \qquad (4.1)$$

Fiscal performance is measured using the same indicators of fiscal discipline, allocative efficiency, and technical efficiency as in the event studies—the fiscal balance, total expenditure volatility, health expenditure share, health expenditure volatility, and cost-effectiveness of health expenditure. A country's MTEF status at any point in time is measured by a dummy variable coded 0 or 1 for each of the mutually exclusive MTEF stages: MTFF, MTBF, and MTPF. Control variables (or covariates) are variables other than MTEF status that are commonly used in the literature to explain differences in fiscal performance. These are GDP growth, trade openness, being an oil exporter, being a conflict country, having an IMF program, population, inflation, designation as a heavily indebted poor country, receipt of aid, and credit market access.

In estimating the relationship, some common estimation problems arise that could jeopardize the econometric results. Mention has already been made of possible reverse causality (MTEF adoption could be a response to fiscal performance) and the use of instrumental variables to address this problem. In addition, there are both a potential omitted-variable problem (some factor or factors that might explain fiscal performance may not be taken into account) and a possible errors-in-variables problem (fiscal performance, MTEF status, and other variables may not be measured correctly). The response to the omitted-variable problem is to include fixed country and time effects that control for country

characteristics, such as culture and norms, and for global factors, such as oil price shocks, while the errors-in-variables problem is partially solved by the care taken to code countries' MTEF status, which is the only variable constructed specifically for this study.

Overall, nine econometric specifications are applied to pooled cross-section and time-series data. These are based on ordinary least squares with and without fixed effects, differences-in-differences with fixed effects and with and without regional trends, and generalized method of moments (GMM) techniques with and without static instrumental variables and year effects.[9] The static instrumental variable used to correct for the endogeneity of MTEF status is MTEF diffusion, which measures the geographic spread of each MTEF stage among a country's neighbors. The idea is that a country's MTEF status may be correlated with that of its neighbors, but its fiscal performance will be independent of the MTEF status of its neighbors. The GMM specifications include lagged dependent variables, which also control for the persistence of fiscal performance over time.

Table 4.1 provides a qualitative summary of the quantitative results reported in appendix E.

MTEF adoption has a significant positive effect on fiscal discipline. For the preferred specification (GMM with instrumental variables and year effects; column 8 in table F.2 in appendix F), an MTFF, MTBF, or MTPF increases the fiscal balance by 0.9, 1.0, and 2.8 percentage points of GDP, respectively. This means that, comparing years in which a country has an MTEF with years in which it does not, the fiscal balance improves more in countries that implement an MTEF than in those that do not. Moreover, the improvement is larger for more advanced MTEF stages. This result is qualitatively the same as that from the event studies, although the marginal impact of an MTPF (compared to an MTBF) is considerably larger. However, quantitative comparisons between the econometric and event study results are not valid given the differences in the two approaches.[10] That said, the marginal impact of MTPF adoption is implausibly large, and this may reflect the stronger fiscal position of advanced countries in the period considered. In the preferred specification, being an oil exporter has a positive influence on the fiscal balance, presumably because it implies higher revenue, while being a conflict country and receiving aid have a negative influence, in the first case because conflict goes hand-in-hand with economic collapse and in the second because the provision of aid is often associated with fiscal need.

The results for an alternative empirical relationship are reported for fiscal discipline. Appendix F describes and discusses the inclusion in the

Table 4.1 Summary of the Econometric Results

	Fiscal discipline	*Allocative efficiency*			*Technical efficiency*
Variable	*Fiscal balance (1)*	*Total expenditure volatility (2)*	*Health expenditure share (3)*	*Health expenditure volatility (4)*	*Cost-effectiveness of health expenditure (5)*
MTEF variables					
MTFF	0.85**	−1.74***	0.40***	−2.66***	0.11
MTBF	0.99*	−2.38***	0.48***	−2.95***	0.07
MTPF	2.82***	−3.42***	1.04***	−2.19	0.51***
Conditioning variable					
OECD	+ ✓✓				
Control variables					
Lag GDP growth	+ ✓	− ✓			
Trade openness					
Oil exporter	+ ✓✓	+ ✓✓	− ✓✓		
Conflict	− ✓✓		− ✓		
Lag IMF program					
Population			−✓		
Population square		+ ✓	+ ✓		
Inflation	− ✓	+ ✓✓			+ ✓✓
Heavily indebted poor country			− ✓		
Aid	− ✓✓	+ ✓✓	− ✓	+ ✓✓	
Lag credit market access					
Other variable					
Lag dependent variable	+ ✓✓	+ ✓✓	+ ✓✓	+ ✓✓	+ ✓✓

Source: World Bank.

Note: GDP = gross domestic product; IMF = International Monetary Fund; MTBF = medium-term budgetary framework; MTEF = medium-term expenditure framework; MTFF = medium-term fiscal framework; MTPF = medium-term performance framework; OECD = Organisation for Economic Co-operation and Developement. Coefficients from the preferred specifications are from column 8 of table F.2 in appendix F. * = significant at 10 percent; ** = significant at 5 percent; *** = significant at 1 percent; + = positive coefficient; − = negative coefficient; ✓✓ = significance with the preferred specification; ✓ = significance with other specifications yielding similar MTEF results as the preferred specification.

regressions of conditioning variables that the literature suggests could enhance the impact of an MTEF on the fiscal balance. Five such variables are included: the presence of a fiscal rule, which is justified by the fact that many countries have put in place fiscal balance, debt, expenditure, or revenue rules to bolster the credibility of fiscal policy; political cohesion, which makes it easier to implement reforms; democracy, because fiscal imbalances are likely to be larger when there is disagreement about spending priorities; membership in the Organisation for Economic Co-operation and Development (OECD), which creates peer pressure to adopt reforms that enhance fiscal discipline; and technical assistance from the IMF, which indicates support for the implementation of such reforms. Conditioning variables are included both as independent variables and interacted with MTEF status. Of these variables, only OECD membership is significant and only for MTPF adoption. This is not entirely surprising given that MTPFs are found mainly in these countries. Moreover, the large marginal impact of MTPFs on fiscal balances disappears when OECD membership is taken into account, confirming the advanced-country effect.

MTEF adoption also has a payoff in terms of allocative efficiency. Based on the same preferred specification, total expenditure volatility declines, starting with an MTFF and becoming stronger moving to an MTBF and then to an MTPF. Higher GDP growth in the previous year reduces the volatility of total expenditures, because more resources are available. Being an oil exporter, experiencing higher inflation, and being an aid recipient all increase the volatility of total expenditures, reflecting the fact that oil revenue and aid are themselves volatile, while inflation can create volatility in the availability of resources. The health expenditure share increases, with the more demanding MTEF stages having an increasingly strong effect. Being an oil exporter reduces the health expenditure share, presumably reflecting other expenditure priorities in these countries. Finally, health expenditure volatility also declines. A surprising finding is that an MTFF has a larger impact on the volatility of health expenditures than on total expenditures, which could be a consequence of coding piloted MTBFs, which often cover the health sector, as MTFFs. MTBFs still have a stronger effect than MTFFs, while MTPFs have a weaker effect. This could again be an advanced-country effect, since these countries are usually less volatile and typically have well-established, stable health sectors. Aid is the only significant control variable; it increases health expenditure volatility, again because aid is volatile and because donors favor health spending. Overall, these results are very

much as predicted, and they provide stronger evidence of improvements in allocative efficiency under MTEFs than the event studies.

The impact of MTEF adoption on technical efficiency is less pronounced. Only MTPFs have a noticeable impact on the cost-effectiveness of health expenditures, which is as expected, but the effect is not that significant. Inflation increases cost-effectiveness, perhaps because higher costs prompt the search for cost savings. As noted for the event studies, the ability to say much about technical efficiency is hampered by the small number of MTPFs, limited variation in life expectancy, and the short sample period.[11]

Case Study Insights about the Quality of Budgeting

The impact of MTEFs on fiscal performance works mainly through changes in the quality of budgeting. Because of data limitations, it is not possible to investigate this channel in the event studies or econometric analysis. Rather, reliance is placed mainly on case studies and other sources to reveal how MTEF implementation affects the quality of budgeting. To this end, it is important to ask whether an MTEF provides a basis for preparing the annual budget and influences key budget decisions, the MTEF and annual budget are based on reasonable forecasts of key variables, existing and new programs are properly costed, spending decisions are guided by strategic considerations, and agency performance is used to guide the allocation of budget resources. In addition, cross-country assessments provide some insight.

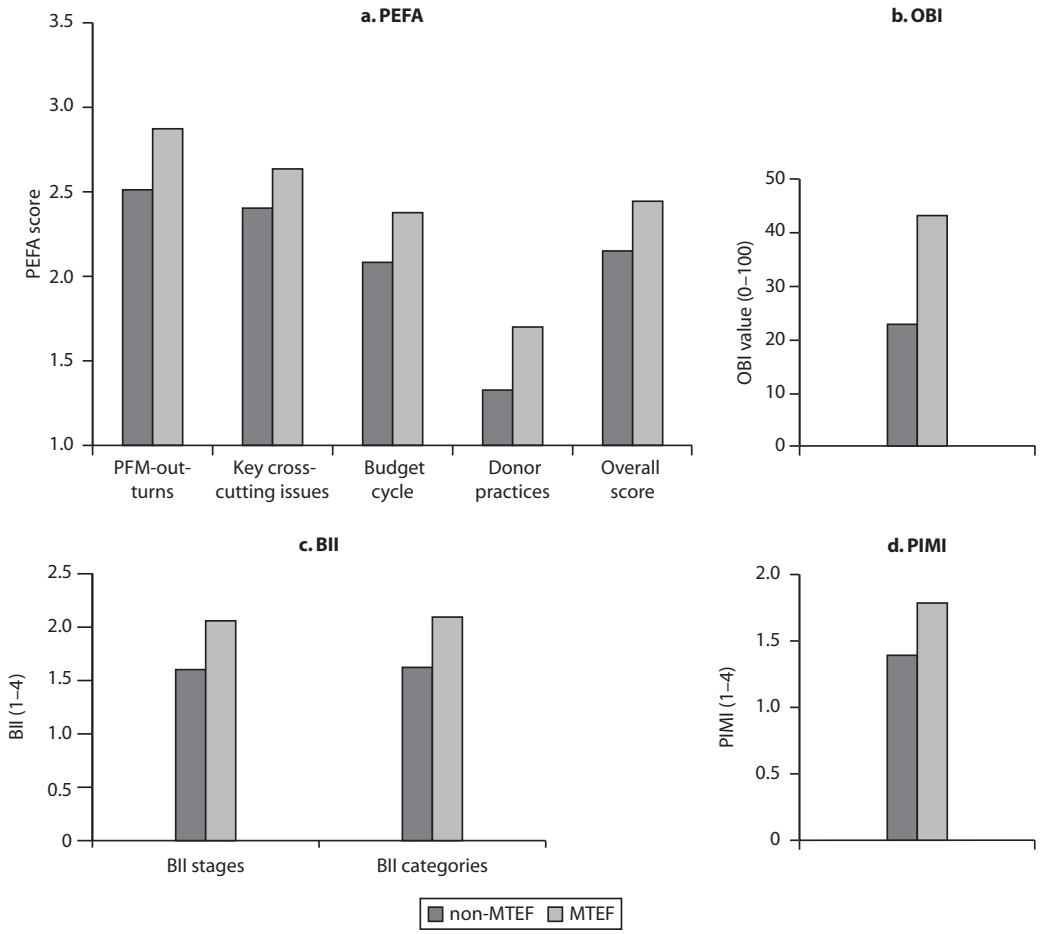
Cross-Country Assessments

Several instruments were used to assess various aspects of a country's budgeting and broader public financial management (PFM) systems and to compare them across countries. Most notable in this regard is the public expenditure and financial accountability (PEFA) framework, which specifically addresses budget credibility as reflected in deviations of revenue and expenditure (and expenditure composition) from the budget. Final or draft PEFA reports are available for 100 developing countries. The International Budget Partnership's Open Budget Index (OBI) focuses on transparency—access to information, public participation, and accountability—but provides a proxy for the quality of budgeting in 85 advanced and developing countries. The Budget Institutions Index (BII) is quite broad in scope, in that it covers transparency, fiscal rules, budget scrutiny, accountability, and other PFM characteristics.[12] Although it does not deal specifically with MTEFs,

the BII does provide a broad picture of the quality of PFM systems in 72 low-income countries. Finally, the Public Investment Management Index (PIMI) captures the institutional environment underpinning public investment management across four stages—project appraisal, selection, implementation, and evaluation—in 71 countries (Dabla-Norris et al. 2011).

PEFA, OBI, BII, and PIMI scores are higher in countries with MTEFs. Figure 4.6 indicates that the results from each assessment instrument and their components show consistently better scores for MTEF countries than for non-MTEF countries. While none of the instruments especially favors MTEF characteristics, PEFA deals separately with budget credibility—by comparing budgets and out-turns—where an MTEF is expected to have a direct beneficial effect. That said, MTEF countries

Figure 4.6 PEFA, OBI, BII, and PIMI Scores in MTEF and Non-MTEF Countries, as of 2008



Sources: Public Expenditure and Financial Accountability for PEFA scores, International Budget Partnership for OBI, Dabla-Norris et al. (2010) for BII, and Dabla-Norris et al. (2011) for PIMI.
Note: BII = Budget Institutions Index; MTEF = medium-term expenditure framework; OBI = Open Budget Index; PEFA = public expenditure and financial accountability; PIMI = Public Invesment Management Index.

outperform non-MTEF countries across all PEFA components. However, PEFA scores tend to deteriorate as the budget cycle proceeds (de Renzio 2009), which may mean that MTEFs add more to budget preparation than to budget execution. Moreover, the fact that PEFA scores are higher to the extent that budget decision making is more concentrated (Andrews 2010) could be linked to the benefits of an MTEF led by the Ministry of Finance.

Case Studies

Several case studies were undertaken in an attempt to derive some lessons about the experience with MTEFs. Appendix G reports in detail on the 10 countries covered by the case studies—Albania, Armenia, Brazil, Ghana, Jordan, Republic of Korea, Nicaragua, the Russian Federation, South Africa, and Uganda. The case study questionnaire asked for comments on various aspects of MTEF experience related to the quality of budgeting. The responses suggest both substantial improvements as well as challenges in relevant budget practices.

Budgeting improvements were reported for several countries. The most common claims are that the MTEF made budgeting more strategic, increased the recognition of resource constraints, fostered cooperation between agencies, and improved fiscal discipline. Improvements in expenditure efficiency are less clear, although spending in targeted sectors increased. Only in Ghana does the MTEF appear to have had little beneficial impact. Russia is an interesting case because the MTEF was introduced in the context of success in implementing sound fiscal policies and improving fiscal performance that the government was seeking to safeguard.

However, the positives for many countries may be exaggerated given persistent weaknesses. The following are the most notable in this connection:

- While MTEFs are formally integrated with the budget process in most countries, in practice the annual budget may not be influenced by the MTEF (in Ghana and Jordan the budget timetable is too tight for this to happen), coverage is limited (government wages are excluded in Ghana and Uganda, and donor-financed projects are excluded in Uganda), resource envelopes are overestimated in many countries, although some are improving in this regard (South Africa), and ceilings are routinely ignored (Korea, Uganda). In some cases, budgeting seems to have remained incremental in nature (Ghana), although even well-functioning MTEFs retain some incremental elements (Uganda).

- While sector strategies are usually prepared, this is sometimes a pro forma exercise (South Africa), coverage of government expenditure is limited (Russia), or programs are not costed properly (Korea, Nicaragua). When public investment plans or programs are supposed to guide national priorities, links to the MTEF and budget are weak (Albania, Armenia), often because the country is not resource constrained (Albania).

- When a performance element is introduced, this is often based on an excessive number of indicators (Ghana) or on indicators of dubious quality (South Africa), is ignored in the decision-making process (Armenia, Jordan, Nicaragua), and is weak at the budget execution stage (Russia).

The case studies also suggest that implementation of an MTEF can run ahead of itself. MTEFs undoubtedly introduce additional complexity into budgeting, especially MTBFs and MTPFs. When countries move too fast, an advanced MTEF is likely to be badly designed and poorly implemented, which makes it less effective than a more basic MTEF. Ghana is a case in point. A consultant-led push to jump immediately to an MTPF before the required systems and skills had been developed meant that public financial management is less advanced now than if a more measured approach to MTEF implementation had been adopted. Moreover, in some areas it may be weaker than before MTEF adoption.

The recent global economic and financial crisis has tested MTEFs. Countries suspended their MTEFs for a year or more in response to the crisis (Armenia, Russia) or did not fully internalize its impact (Albania, Jordan). To some extent, this is understandable given that the sharp slowdown in growth worldwide and recession in many countries, together with the uncertain prospects for recovery, made macroeconomic and fiscal forecasting and thus preparing an MTEF unusually difficult. At the same time, the fiscal consequences of declining revenue, fiscal stimulus programs, and bank bailouts made expenditure prioritization even more important, and a realistic MTEF could have been helpful in determining how to accommodate these fiscal pressures. Russia is again a relevant case in point. Restarting the MTEF effort relatively soon after the crisis, in the 2010–12 budget cycle, allowed the country to sustain improvements in its fiscal position.

Notes

1. The general government data on health expenditure are sourced from the World Health Organization, while the central government data are sourced from the International Monetary Fund's *World Economic Outlook*.

2. The precise measure is the absolute value of the year-on-year change in the percentage deviation of the expenditure share from trend calculated using a Hodrick-Prescott (HP) filter.
3. This is measured as the distance from a frontier defined by the countries that are the most efficient in increasing life expectancy given their level of health spending per capita. In effect, it measures inefficiency or waste.
4. The reverse causality problem is described in more detail in appendix F.
5. A case can be made for including year *t* as the first year of the post-MTEF period since the MTEF was in effect that year. However, in some cases it is unclear whether an MTEF became operational in the year of implementation, especially in cases where the calendar and fiscal years do not coincide; hence the implementation year is treated as transitional.
6. The fiscal balance begins to improve in the year of MTEF implementation. If the MTEF became fully operational in that year, this could reflect the immediate impact of the MTEF. However, there are reasons to treat this as a transitional year and not part of the post-MTEF period.
7. The three- and five-year event studies are not directly comparable because of differences in sample size.
8. Limitations on data availability mean that, while 72 MTEFs are used for the event studies on fiscal discipline and total expenditure volatility, 67 are used for the event studies on health expenditure share and volatility and only 43 are used for the event study on cost-effectiveness of health expenditures.
9. A region-specific time trend controls for regional shocks. Year effects control for global factors.
10. The event study for the fiscal balance describes whether, on average across countries that adopted an MTFF, the fiscal balance improves in the years after MTFF adoption compared to the years before adoption.
11. Grigoli, Mills, Verhoeven, and Vlaicu (2012) use the same dataset but another approach involving Difference (or D-) GMM rather than system GMM. They arrive at very similar findings for the impact of MTEFs on fiscal performance (see Appendix F). This adds further evidence on the robustness of this study's results.
12. The BII by Dabla-Norris et al. (2011) includes three budgetary stages: planning and negotiation, approval, and implementation. Each of these budgetary stages is made up of five cross-cutting categories: (a) top-down procedures, (b) rules and controls, (c) sustainability and credibility, (d) comprehensiveness, and (e) transparency.

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