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Cash management in cash-constrained environments

A public financial management introductory guide

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Abstract

This public financial management introductory guide summarises the literature on cash management reforms for developing countries. Good cash management ensures public money reaches the right place, at the right time. Reforms to improve cash management in the OECD aim to make this process more efficient, by ensuring that the government's cash balances are known and invested properly. However, in fragile states or low-income countries, cash management systems are used for a different purpose: to maintain fiscal controls through a process called "cash rationing". Understanding these different objectives will help target the right reforms and the right problems.

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Public financial management introductory guide

This 'Cash management in cash-constrained environments' paper forms part of a series of introductory guides on key topics in public financial management (PFM). They are written specifically for capacity-constrained environments and provide an overview and discussion of the main issues related to each key topic, highlighting useful literature. Each introductory guide includes practical suggestions on how capacity-constrained governments can approach reforms, together with brief outlines of other countries' experiences of PFM reform. They are not intended to be detailed guides to the design and implementation of reforms. They are based on a review of the relevant literature and the practical experience of ODI staff working in these areas.

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1. Overview of cash management

1.1 Introducing cash management

The purpose of cash management is commonly understood as having '[a] the right amount of money in the right place at the right time to meet government obligations in [b] the most cost-effective way' (Storkey, 2003). In countries with strong public financial management (PFM) systems and established debt markets, the ready availability of money for payment is almost taken as a given. In such contexts, cash management is largely a matter of finding the most cost-effective approaches to meet a government's

Box 1: Useful terminology in discussing cash management

Arrears: outstanding obligations that the government has failed to pay within an agreed time frame. The acceptable time frame may be specified in the country's PFM legislation, though this is not always the case. The IMF sometimes uses non-payment periods to define an arrear, such as 45 days or 60 days after the date on which goods or services have been delivered and accepted.

Commitment: an obligation to make a future payment, subject to the fulfilment of pre-agreed conditions. Commitments create an obligation for one payment (e.g. the procurement of a consignment of drugs) or a set of payments (e.g. staff salaries).

Imprest: a 'petty cash' or other system of accounting whereby a fixed balance of readily available money is maintained for small purchases and replenished after it has been spent. For example, a school may keep $100 in reserve and top up this reserve on a monthly basis if any or all of the money is spent.

Purchase order: an official offer issued by the government to a seller or supplier, indicating types, quantities and prices for goods or services to be provided.

Payment voucher: a document which confirms that payment will be made against a given purchase order following necessary approvals. This effectively triggers the payment, mostly through the central bank or through a cheque for the seller to cash.

Treasury: this can refer to the name of a country's finance ministry (e.g. the Treasury in the UK or in New Zealand). However, for the purposes of discussing cash management it refers to the specific department or division within government (often part of a finance ministry itself) that handles payments, monitors and tracks expenditure, and manages government's financial accounting and reporting. In Anglophone countries, responsibility for this function often lies in the 'Accountant General's Department'.

Treasury bill: a short-term debt instrument that is issued by a government and which will be redeemed within one year. Treasury bills do not pay interest but are sold at a 'discount', meaning there is a difference between the value paid by the government on redemption (e.g. $100) and the amount actually paid by the purchaser to buy the bill (e.g. $95). The discount (e.g. $5) represents the cost to government and the profit of the purchaser. Treasury bills are traded in the 'money market'.

Treasury bond: a debt instrument that is issued by a government and which will be redeemed after a period of a year or more. A bond will typically pay a fixed rate of interest (often called a 'coupon') at regular intervals (e.g. every six months or every year) until the end of the bond period, at which point the government will repurchase the bond for an agreed price. Treasury bonds are usually traded in the 'capital market' (which includes debt and equity markets).

Warrant: an approval to spend public money that is granted by the finance minister, though in practice this responsibility may be delegated to a senior official (such as the head of the treasury department). Warrants typically authorise the spending of line ministries, and other heads of expenditure, who may in turn extend sub-warrants to budget units within the ministry.

Zero balance account (ZBA): an account in which a balance of zero is maintained. When payments are made from the ZBA, funds equal to the value of those payments are automatically transferred from a master account, so the net balance in the ZBA remains zero.

short-term financing requirements and of using any temporary cash surpluses as cost-effectively as possible.

For finance ministry officials in low-income countries, however, the situation may look very different. Faced with imbalances between the amount of cash the government has in its accounts and the demands to pay current bills and outstanding arrears, 'having money in the right place and the right time' would seem to be a very attractive but highly ambitious proposition. Paradoxically, however, the difficulties faced by many low-income countries in making cash available when and where it is needed may not stem primarily from failures in procedures commonly understood as 'cash management' but instead arise from weaknesses in the 'upstream' processes of budget preparation and management.

Understanding problems of cash management and how they arise is critical for designing appropriate reforms. This introductory guide reviews and summarises the available literature on cash management in order to answer some basic questions related to low-capacity environments:

- What is cash management and why is it important?
- How does cash management differ in high- and low-income countries?
- What are the most common cash management reforms?
- How can reforms be appropriately tailored to the needs of low-income countries?

The discussion focuses on cash management on the expenditure side rather than on the challenges of managing any temporary surplus cash that might arise from government revenue inflows.

The annotated bibliography at the end of this introductory guide summarises the key references used to compile this paper and provides a useful guide to further reading.

1.2 What is cash management and how does it relate to other PFM processes?

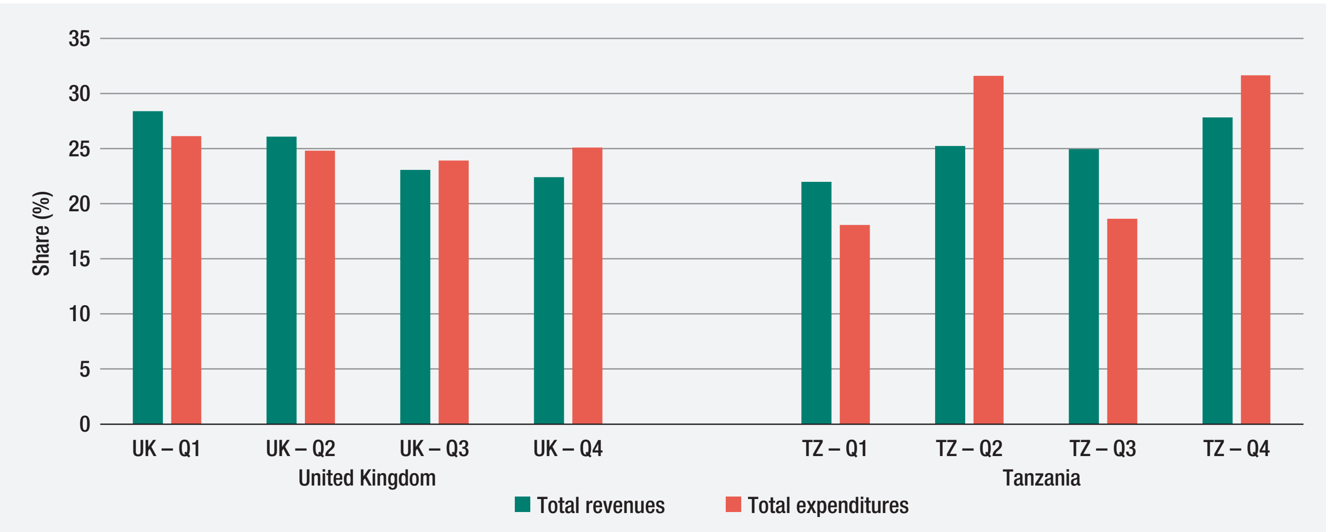
Cash management refers to the processes involved in efficiently transferring money from those who collect it to those who spend it – in order to pay creditors, suppliers, service delivery units, public sector workers and others. Responsibility for managing cash management systems typically rests with the 'treasury' function of the finance ministry.

Historically, systems of cash management used to involve the actual physical moving and holding of cash in chests. Although elements of such systems exist today in many low-income countries, the movement of money is increasingly managed electronically through expenditure management systems linked to bank accounts.

Regardless of how cash is handled, the underlying challenge in cash management is the fact that revenue inflows and payment obligations generally do not match in any given week, month or quarter (see for example Lienert, 2009, and Williams, 2010). (This is illustrated in the case of the UK and Tanzania in Figure 1, below.) As a result of this mismatch, governments cannot rely on sufficient revenues to come in at exactly the same time as payment obligations become due; and in certain periods revenue inflows will exceed expenditure demands. Governments have to manage their financial activities to deal with this timing gap and their principal tools in doing so are those of cash and debt management.

To better understand the challenge of cash management, the following discussion briefly outlines the key processes in a typical expenditure management cycle in low-income countries. The discussion is meant to be illustrative, and in practice the arrangements for expenditure management differ considerably between countries (described further in Pattanayak, 2016, and Lienert, 2003).

Figure 1: Share of total annual revenues and expenditures by quarter in 2012 in the UK and Tanzania



Sources: UK Office of National Statistics; Tanzania Ministry of Finance

1.2.1 Budget formulation

The government budget follows an annual cycle of preparation, approval, execution and evaluation (see for example Andrews et al., 2014). During budget preparation, the finance ministry forecasts the revenues it expects to flow into government and the expenditures it expects to flow out over the coming financial year. Ministries, departments and agencies are often asked to break down these forecasts in a quarterly or monthly cash plan to assist with cash management.

Budget formulation is one of the points in the cash management chain at which problems can begin to arise. Cash management is easier when the budget approved by the legislature is based on a reliable estimate of revenues and planned spending for the year ahead. For a number of technical and political reasons, however, formulating credible budgets is frequently a structural challenge in low-income countries (Simson and Welham, 2014). As a result, the budget approved by the legislature may not bear a close relationship to the revenues and expenditures that are likely to materialise over the year.

Where approved budgets are not credible and where expenditures cannot be financed within the available resource envelope, the budget must effectively be reprioritised in-year during execution so that it is affordable. In many countries, combinations of budget revisions, commitment controls and cash limits (or ‘cash rationing’) are used to force ministries to spend less money.

1.2.2 Providing the authorisation to spend

Regarding expenditures, a finance ministry (typically the treasury or the budget department) periodically – often on a quarterly basis – provides permission to line ministries to spend a portion of their overall budget. No actual money is transferred in this process of budget authorisation; rather, limits are set in the expenditure management system that fix how much can be spent (or committed) within a defined period. This is sometimes called the process of issuing ‘warrants’ or ‘releases’. It may be accompanied by a transfer of cash to the bank accounts of spending units, although it is often more efficient (and less wasteful of cash) to transfer a ‘permission to spend’, making cash available only when it needs to be spent.

To decide how much to release to spending ministries, a finance ministry typically prepares a quarterly forecast of planned expenditure. In Anglophone countries such as Uganda, Swaziland and Ghana, this responsibility commonly falls to the treasury or budget department, or whichever department is responsible for overseeing budget execution. Certain types of expenditure, such as wages and salaries, tend to be more evenly distributed during the course of the year and so are fairly easy to estimate. However, for certain types of spending, and especially capital investments, the timing of payments will depend upon when specific programmes are to be implemented. For this reason, a finance ministry typically requests that ministries submit cash plans showing how much they expect to spend and on which economic categories (e.g. wages, transfers or goods and services).

At this stage of the cycle, a finance ministry aims to bring together the demands for cash (from the warrants) and the supply of cash (from revenue forecasts and planned borrowing) to ensure that authorised spending can be financed. If expenditures are significantly greater than expected revenues in any given period, ways will need to be found to close the gap. A finance ministry may draw down on cash reserves or issue more debt to cover the shortfall; or it may instead try to manage releases to prevent formal commitments from being made by line ministries. In the latter scenario, the finance ministry may simply not authorise the full releases requested by line ministries in their cash-flow forecasts. This will force ministries to defer certain payments to later periods in the financial year, or even into the next financial year. As discussed below, in more extreme circumstances, a finance ministry may decide to ration the available cash by deciding which payment orders should be processed and which should be held back, even if they have been previously authorised.

1.2.3 Controlling commitments

Commitments are a legal promise to pay at a future date, for which at some point cash will need to be found, as long as the goods or services are supplied as required. For example, a ministry may order a delivery of fuel. Once the order is placed, the ministry has created a commitment that the government will pay the bill, subject to the delivery of satisfactory goods. If commitments are made without the ministries having been granted permission to make the necessary payments, this can lead to unpaid bills, referred to as arrears (Flynn and Pessoa, 2014).

There are various ways in which commitments are made and organisational structures are set up. However, Radev and Khemani (2009) usefully distinguish between specific commitments and continuing commitments:

- Specific commitments require a single payment or a number of payments over a fixed period (e.g. the purchase of stationery or construction contracts).[1]
- Continuing commitments require a series of payments over an indeterminate period of time and may not involve a specific contract (e.g. salaries or utilities).

Managing commitments is a key element of effective cash management, since only by knowing its commitments can a government know what bills it has to pay. Many

1. In the case of capital spending, commitments can often take the form of complex multi-year contracts that do not fit neatly within the annual budget cycle but which are nonetheless time-bound.

countries have some system of 'commitment controls'. These controls aim to prevent ministries from entering into commitments when authority to spend has not been granted (through the budget or a warrant) or when there is a risk that revenue will be insufficient. They often work differently for specific and continuing commitments and are increasingly automated in the new generation of financial management systems (Pattanayak, 2016).

In practice, however, commitment controls may be lacking, ineffective or simply not enforced. In countries where this is the case, ministries, departments and agencies will often commit to paying more bills than there are resources available to finance these commitments. This imbalance is often then passed through to departments responsible for cash management and payments. The nature of cash management then often becomes one of 'cash rationing' and the risk of building up arrears becomes more pronounced, as will be described later in this introductory guide.

1.2.4 Making a payment

The final stage of the expenditure cycle is payment (followed by accounting or reporting for that payment). Depending on the country, there may be a number of steps in this process. Once goods and services have been delivered, someone will verify their receipt. Thereafter, a purchase order (if they are used) is typically generated and attached to the invoice or bill. In cases where a centralised payment system has been established, spending ministries may submit payment orders electronically to the finance ministry's treasury department for payment; in other countries, ministries handle their own payments. Once all the approvals have been given, payments may be made in cash, by cheque or through an electronic transfer to a bank account. This is simplified in Figure 2 below.

1.3 How does cash management work in practice?

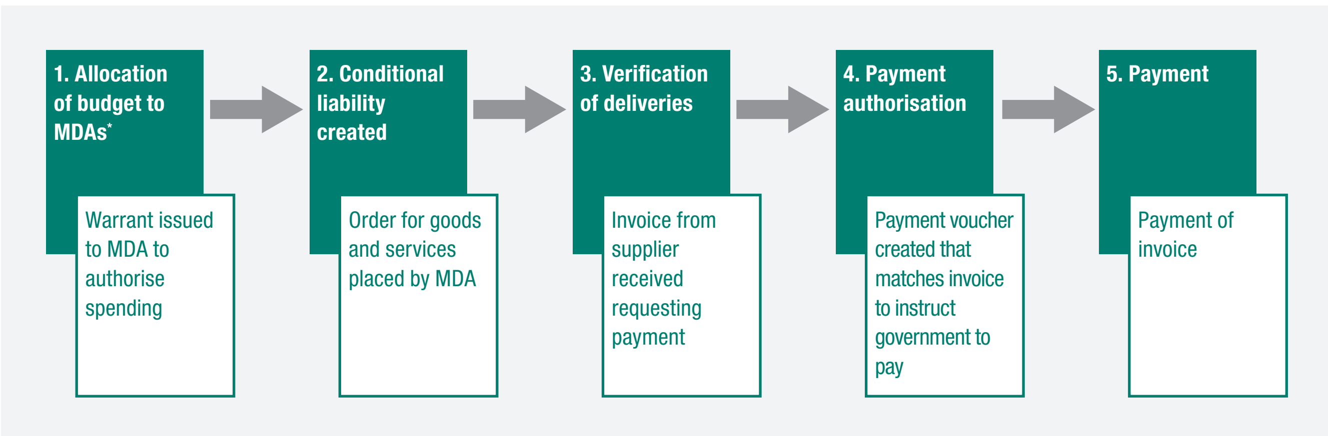
The preceding discussion has described some archetypal processes for the cash management aspects of budget execution, drawn from key references on this topic. However, the discussion so far has not shown the significant variety in the ways these processes work (or indeed do not work) in different countries. These variations are most pronounced when comparing the cash management practices of advanced economies with low-income countries.

Box 2: Factors that affect cash management arrangements

There are a number of factors that affect the manner in which cash management works in practice in different countries. Below are listed four of the most important factors that determine how the cash management system operates:

- The way that payments are made, e.g. in cash, by cheque or by electronic transfer.
- The agents that are available to make payments, e.g. the central bank, commercial banks or both, and whether those payments are centralised (e.g. in one payment institution in the capital city) or dispersed (e.g. through many institutions or through regional branches of one central institution).
- The institutions responsible for managing cash balances, e.g. local government, agencies, ministries or the treasury.
- The level of market development and, in particular, the depth and liquidity of the government bond and money markets.

Figure 2: Simplified diagram of the expenditure process



Source: Authors' representation

**Ministry, Department or Agency*

1.3.1 Cash management in advanced countries

In most advanced economies the processes described above function well. The adopted budget is credible and provides a reasonably accurate forecast of what will be received as revenue and what will be paid as expenditure over the year, although there will still be differences in timing. There is typically a strong political commitment to delivering the budget as approved by parliament. There are well-established systems of budgetary controls to manage commitments and payments. Ministries are held accountable for staying within their budgets, and systems are often sufficiently developed so that the responsibility for periodic authorisation of spending is delegated to line ministries.

In such countries the ability to make payments when and where required is taken as a given. Deep domestic debt markets and a liquid money market mean that if there is a shortfall in revenues on any given day the government can borrow to finance this gap. Sophisticated banking systems mean that payments can be made electronically through country-wide branches of the central bank (as in France) or the commercial banking network (as in the UK). Vendors and employees almost always have bank accounts, so only a few payments are made in cash. Tax and other receipts also flow rapidly through the banking system into government accounts.

The focus of cash management in these countries tends to be on *minimising the net interest costs paid by the government*. This is achieved by trying to keep the balances in government accounts as close to zero as possible. When revenues are higher than expenditures, the balances are invested to earn interest or used to pay down other debts (which thereby lowers the total amount of interest that needs to be paid). When expenditures are higher than revenues, the government will issue securities or borrow in the money markets to make up the difference.

There are two common features in the ways that advanced countries try to minimise interest payments. One is that cash balances are pooled in a 'treasury single account' (TSA – described in more detail below), even if expenditures are managed by line ministries. A TSA typically allows cash managers to automatically use surpluses in one part of government to cover shortfalls in another and therefore reduce the need to borrow overall. Through arrangements for linking and sweeping sub-accounts, the government targets a zero or near-zero balance on all accounts at the end of the day.

The other common feature is that cash managers are able to forecast cash flows into and out of the TSA, looking weeks or months ahead, in order to identify when and how much the government should borrow. Using this information, the government is able to engage actively with debt markets by providing information in advance on the planned auctions of different types of debt. Typically, this will involve a mix of longer-term securities (e.g. treasury bonds) and shorter-term securities (e.g. treasury bills), although treasury managers often retain some flexibility with regard to treasury bill issuance so that they can respond to unanticipated cash flows.

This practice is more precise in some systems than in others. Williams (2009) distinguishes between 'rough tuning' and 'fine tuning'. In the case of rough tuning, cash managers take account of the cash-flow forecasts and vary the volume of treasury bills auctioned each week in order to moderate the fluctuations in government cash balances, thereby also reducing the surplus cash balance on a *weekly* or *fortnightly* basis. This is more common than fine tuning, which aims to remove fluctuations in cash availability almost completely: this approach is restricted to a small number of countries in northern Europe, and a few others such as New Zealand. In these governments, cash managers use a wider range of financial instruments to minimise the balances of the TSA on a *daily basis*. This includes direct borrowing and lending, or buying and selling existing securities in the secondary debt markets on a daily and/or overnight basis.

These 'active cash management' approaches have led to increasingly close integration between cash and debt management functions. In the UK, Sweden, New Zealand and many Eurozone countries, debt management and cash management offices have effectively been merged. By smoothing government cash flows, active cash management has also facilitated monetary policy operations, since the government is one of the main contributors to liquidity in the banking sector (for more details, see Pessoa and Williams, 2012).

1.3.2 Cash management in low-income and fragile countries

Cash management in low-income countries and fragile states is usually very different. The structure of economies in low-income countries means that revenues tend to be more erratic (IMF/World Bank, 2011). Countries may be reliant upon donor funding to finance large proportions of the budget and this funding is often uncertain. This makes the gap between revenues and expenditures in any given week, month or year large and unpredictable. Donors may also require separate bank accounts or other arrangements to handle their funds, which can have the effect of making this money less fungible across government accounts.

Institutional weaknesses and issues of political economy often contribute to failings in the upstream PFM processes around planning and budgeting described in the previous section (Simson and Welham, 2014). These failings might include perennial over-optimistic revenue forecasts during budget formulation to justify higher expenditure plans. If the forecasted revenue then fails to materialise, this creates pressure to identify savings when executing the budget. The budget department may come under pressure to 'find money' for powerful spending entities over and above initial budget allocations. Systems for controlling spending by line ministries may also be ineffective: for example, ministries may enter into commitments without having been given prior authorisation to spend.

The institutional architecture necessary for modern systems of cash and debt management may also be absent in low-income countries. Governments in such countries typically cannot rely on a developed banking sector and deep money markets to access finance as and when it is needed. For example, most of the inhabited islands in Kiribati do not have bank branches, so the government keeps money physically in cash chests. (A similar system is used in some of South Sudan's county governments.) Without electronic bank transfers, cash management focuses partly on moving this money between these cash chests. In Swaziland, by contrast, the banking system is more developed, though even in this context the government cannot always issue enough treasury bills to make its payments on time. In some years this is because the budget deficit is too large to be financed through the domestic markets; at other times it is simply a factor of poor linkages between the cash-flow needs and the securities auctions.

These political, economic and institutional weaknesses contribute to the following two key differences in the way cash management operates in low-income countries as compared to high-income countries:

- The processes by which cash is managed tend to be less efficient.
- Cash limits are commonly used as a way to control spending.

1.3.3 Inefficient cash management processes

The lack of a developed banking sector and the absence of deep debt and money markets in many low-income countries mean that the costs of having money readily available tend to be much higher. Governments often engage in a number of strategies to manage this challenge, all of which carry certain costs.

Some countries maintain high balances in government accounts so that they can respond to unexpected payments without having to rush to the debt market. In doing so they accept the opportunity cost of holding those balances. For example, if salaries are paid in the fourth week of the month, idle balances must be built up gradually over the first three weeks of the month in order to meet the salary costs that are due in week four. This is the case in Swaziland, for example, as it was in South Sudan in the years shortly after independence before borrowing was an option for the government.

Other countries make continued use of short-term borrowing to cover frequent shortfalls in cash availability. In Myanmar, for example, the government honours payments as and when they arise, but will access short-term debt such as overdrafts or treasury bills to fill temporary cash shortfalls.[2] Until recently, the government in Kiribati also used overdrafts at its only commercial bank as a source of easy-to-access cash. Such short-term borrowing from banks is often particularly expensive.

Because costs are incurred in having cash readily available, governments may in some cases delay certain payments or adjust commitments within their controls. In Tonga, for example, the government's practice is to pay public sector salaries every two weeks and suppliers mainly in the weeks in between, especially if the payments are large. In some countries, politically less important

Box 3: Examples of cash management in developing countries

Kiribati does not have a central bank and around half the population live on islands without a bank, so payments are made in cash. This is done through an imprest system whereby the finance ministry gives spending agencies cash advances with which to make payments. The cash chest is topped up on request, while receipts are sent back by the spending agencies for accounting purposes. Cash is ferried to outer islands from the capital through the postal system. Cash is rarely in short supply in the treasury because the government has access both to overdrafts at the only commercial bank and to its sovereign wealth fund. In contrast, there are cases where money held on outer islands falls short of payment obligations.

Swaziland is able to use electronic payments for most transactions, but its debt markets are not well developed. All payments are made through the Treasury Department, and cash management relies on maintaining large bank balances. Accounting practices are weak, so separate accounts are maintained for important payments such as debt interest and principal and salaries. Surplus funds are invested temporarily in special accounts at the central bank that earn more interest. There is some domestic borrowing but this is not coordinated with the cash management function.

In Myanmar, each spending unit has a dedicated zero-balance account at the local branch of the state-owned Myanmar Economic Bank. Limits are set on these accounts on a quarterly basis once authority to spend has been granted. Any payment requests in excess of agreed limits are automatically rejected by the bank. This provides a strong control over how much can be spent. It also clearly identifies which agency has made a payment, since each bank account relates to a specific spending entity.

2. Note that overdraft facilities at the central bank are sometimes called a 'ways and means advance' in Commonwealth countries (Potter and Diamond, 1999). In many countries there are legal prohibitions or other restrictions on government borrowing from the central bank.

payments may simply roll over unpaid from week to week until eventually either cash is found to pay the bills or their political importance suddenly increases. Non-payment of bills raises costs for government in other ways, however. These may be costs explicitly stated in contractual agreements (e.g. suppliers can legally charge a fixed interest rate per day on the value of unpaid bills; or some capital project contracts will specify fixed penalties for non-payment) or hidden additional costs (e.g. suppliers inflate the cost of goods and services to cover the cost of anticipated long delays in payment).

1.3.4 Using cash limits to control and monitor spending

Weak budgetary controls and unpredictable revenue inflows mean that low-income countries often use the availability of cash as the *de facto* mechanism (albeit blunt and imperfect) for trying to keep expenditure within set limits. This is sometimes called 'cashbox budgeting', with budget execution managed through 'cash rationing' (Schick, 1998; Williams, 2009).

In order to achieve agreed aggregate deficit targets, the budget office and/or treasury may use a number of tools to limit and monitor the total cash outflows in a given period.

- Spending may be limited by reducing the amounts that ministries are authorised to spend below the legally adopted budget. The cash-flow needs submitted by line ministries are simply reduced (often arbitrarily) from month to month, rather than honoured in full through the warrants that are issued. In extreme cases, the legally adopted budget becomes almost meaningless and the budget is remade on a month-to-month basis through cash releases (Caiden and Wildavsky, 1974; Schick, 1998).
- Controls may be enforced through 'hard limits' in banking arrangements. Instead of trying to manage pressure on cash availability through commitment controls and/or controls over expenditure warrants at the centre, many low-income countries set fixed limits on bank accounts, above which all payments are automatically rejected. This may take the form of a transfer of a fixed amount of actual cash to a specific bank account with no facility for an overdraft; or it may take the form of a total expenditure limit on ZBAs above which payments cannot be made.
- The payment of certain obligations may be deliberately delayed, even as they fall due. Payments for capital projects and goods and services are often the first to be delayed, though such decisions may also extend to transfers to government agencies and local governments, and, in rarer cases, to salaries, pensions and debt service. Ultimately, the decision as to what to pay and what not to pay depends largely on local politics.
- Separate bank accounts may also be actively used as a means of monitoring expenditures across different categories. In countries with weak financial reporting, government may use dedicated salaries accounts or separate accounts for each ministry within the central bank. In these circumstances, bank account statements can potentially provide more immediate clarity over what cash has been spent for broadly what purposes than the use of a smaller number of bank accounts and dysfunctional financial reporting systems. By contrast, OECD countries tend to manage control and reporting through financial management and accounting systems rather than separate accounts.[3]

Where cash is used as the primary means of limiting spending, cash management takes on an almost completely different meaning. It becomes a system of matching available cash against a politically-informed prioritised list of outstanding demands on a week-to-week (or month-to-month) basis. In such circumstances the responsibilities for budget management and cash management processes often become blurred.

Some authors argue that cash rationing is not cash management at all (e.g. Williams, 2009). However, in many low-income country contexts it is difficult to draw a sharp distinction between the two. For example, a finance ministry may use quarterly budget authorisations to prudently match revenue and expenditure flows throughout the course of the year (as an example of 'cash management'). Yet in the absence of good information about existing commitments and a lack of effective controls over these commitments, a government's payment liabilities may still have exceeded their available cash inflows and, as a result, the government may resort (at least temporarily) to delaying payments (as a form of 'cash rationing').

1.3.5 Costs of cash rationing

Cash rationing delivers an obvious and immediate benefit in that it ensures that expenditure matches income overall and that deficits are strictly controlled. This can be particularly useful for controlling inflation where it is driven by excessive government spending. As an example, cash rationing was used to bring an end to hyper-inflation in Zambia (Dinh et al., 2002). However, the manner in which cash rationing achieves this control over inflation also generates costs.

A common cost for countries that practise cash-rationing is the accumulation of arrears. Where line ministries and agencies see their budgets cut they may often continue to make commitments (formally or informally) in the hope that permission to spend is *delayed* rather than necessarily cut off all together. In some cases this can be done with a

3. As explained by Pattanayak and Fainboim (2010:5): 'While it is necessary to distinguish individual cash transactions for control and reporting purposes, this purpose is achieved [in OECD countries] through the accounting system and not by holding/depositing cash in transaction specific bank accounts'.

view to maintaining a necessary basic level of services. In other cases, ministries may enter into commitments they know are not permitted in the expectation that doing so will eventually 'force the hand' of the finance ministry to pay. However, an uncontrolled build-up of arrears can damage economic growth and raise the cost of government procurement (Checherita-Westphal et al., 2015; Flynn and Pessoa, 2014). Large arrears may reduce the financial capacity of suppliers to restock, to invest, to pay staff and/or to meet tax obligations; moreover, as noted above, the additional cost to suppliers is often ultimately passed on to the government through increased prices for providing certain services.

Cash rationing means that the provision of resources to spending agencies is unpredictable. This makes it difficult for ministries to plan activities in their sector, with potentially negative impacts on the delivery of public services. A review of public expenditure tracking surveys suggests that delays and bottlenecks in the allocation of resources affects the quality of services and staff morale (Gauthier, 2010). The use of cash rationing also opens up opportunities for corruption. This is because decisions over which commitments will be paid are no longer determined by a pre-agreed plan (i.e. the budget) or some other predictable process, but rather through the decisions of individuals. Ministries and vendors therefore have strong incentives to offer favours or bribes in return for being paid first (Flynn and Pessoa, 2014).

In the most extreme situations, cash rationing means that the budget prepared by the finance ministry and approved by parliament loses validity (Rakner et al., 2004). The real process of budgeting happens from month-to-month or week-to-week as varying levels of cash are released to ministries based on what is available and discretionary decisions are made as to which outstanding bills should be paid. In such a context there is little incentive for a government to carefully plan its financial activities for the coming year in a robust budget, since the actors in the process know that in practice they will not receive what has been formally agreed.

Box 4: Experiences of cash budgeting

Although there is no common definition, a cash budget is usually characterised by (a) the use of cash availability as the primary fiscal control, and (b) strict limits on printing money to finance government spending. This approach became common in Africa in the 1990s as a way of limiting government borrowing from central banks with a view to reducing inflation rates. It has also been used in other regions.

Stasavage and Moyo (1999) reviewed the economic impacts of cash budgeting in Uganda and Zambia and found that cash budgets increased the volatility of spending for line ministries but did help to improve expenditure controls. Wokadala and Davies (2012) studied how the process of matching expenditure to available revenues worked in Uganda and how this changed over time. They conclude that while aggregate controls were indeed improved, this was at the expense of budget credibility, and the government continued to accumulate expenditure arrears. Both of these studies noted that political commitment to better fiscal management influenced the relative success or failure of these systems in controlling inflation.

1.4 Common cash management reforms

Most cash management reforms are referred to as reforms that will 'modernise' cash management or make operations more 'active'. These reforms typically aim to achieve two objectives. One set of reforms aims to improve the handling of cash within government systems so as to minimise idle balances, often starting by introducing a TSA (discussed below). Another set of reforms aims at supporting the institutional arrangements for forecasting the government's cash needs, often through the creation of cash management committees and units. If successful, these reforms would facilitate the introduction of 'rough tuning'.

There is a substantial body of literature on PFM reforms relevant to cash management. This introductory guide provides a generalised summary of how a practitioner might use this literature to approach the problems of cash management. For more detailed discussions, see Lienert (2009) and Williams (2009) for their descriptions of possible options to 'modernise' cash management; and for detail on the TSA, see Pattanayak and Fainboim (2011; 2010) and Tommasi (2007).

1.4.1 Management of government bank accounts to minimise 'idle balances'

The discussion has already noted that holding idle cash balances constitutes an opportunity cost to the government. Common reforms to minimise idle balances include:

- *Consolidating bank accounts.* Many countries have numerous government bank accounts, which increases the risk of cash balances sitting idle in one account while the government goes to the domestic debt market to top up a shortfall in another account. One common reform is to review all bank accounts and to close those that are no longer active and/or to consolidate some of the balances.
- *Adopting TSAs.* Over the last two decades, most countries have undergone reforms intended to introduce TSAs. This involves unifying all (or almost all) government bank accounts under a single structure so that the finance ministry can easily trace all flows in and out of these accounts. The balances are then pooled together so that surpluses in one area of the government are automatically used to cover shortages in another. Cash management can then focus on maintaining adequate cash balances overall.

Box 5: Treasury single account (TSA)

A TSA is an arrangement whereby government payments are made through a single account or a set of linked accounts. The aim is to give the government a consolidated view of cash resources, including all inflows and outflows. This information can be used to maintain the smallest total balance sufficient to meet the day-to-day requirements of the government, sometimes with a contingency reserve in case of unanticipated costs.

A TSA is not a fixed structure and can be arranged in a number of different ways. The account(s) can operate through the central bank or through commercial banks. Payments from the TSA can be managed by a centralised treasury system or through the bank accounts of spending agencies. This arrangement works by consolidating ('sweeping') the balances from all these accounts each day into one 'main account'. Commercial banks and sub-accounts in the central bank permit transactions up to a predetermined level and are then reimbursed from this main account each day to maintain a zero balance. The accounting system is then used to capture all transactions in order to track and monitor what has been spent by which agency and for what purpose. The reconciliation process is described by Pattanayak and Fainboim (2011:12).

In principle, no central government agencies would operate accounts outside of the TSA. However, this does not mean that all government money is in the TSA. Local governments are excluded from the TSA in some countries. External donors may require that aid is managed in designated accounts outside the TSA. Similarly, some extra-budgetary funds (like road maintenance funds) may have legal independence and may extend this to their banking arrangements. It is also generally agreed that public corporations are excluded from the TSA.

Sources: Tommasi, 2007; Pattanayak and Fainboim, 2010; 2011

1.4.2 Improving cash-flow forecasting and planning

Effective cash-flow forecasts are a critical requirement for more efficient cash management. A key goal of consolidating bank accounts is to reduce idle balances and thereby reduce the net interest costs of government debt. Accurately forecasting cash inflows and outflows allows governments to go a step further and actively target a specific balance (or at least a range) in the TSA. This allows the government to minimise its overall borrowing and at the same time ensure there is enough cash available when payments fall due each day.

This process relies on robust data about past revenue and expenditure performance to inform analysis of likely future trends. The information needed for this process usually includes: (a) data on outstanding and expected payments in the period ahead; (b) the current available bank balances to meet these payments; and (c) forecasts of weekly cash inflows and outflows for the future period. Typically, the focus is on the amount of resources needed in the coming week, though ideally it would be useful to look ahead over a longer period, e.g. for at least the next three months. If resources are short then the debt management unit (or the central bank on the ministry's behalf) may raise additional finance, usually by issuing extra treasury bills. If resources are plentiful, then the government may repay debt or invest some of the balances in the higher-interest accounts of the central bank. The longer the period, the more notice there will be for the government to plan its debt issuance or repayment strategy and/or to cut or reorient the budget if necessary.

Cash-flow forecasting and planning is challenging because it involves a substantial degree of analytical judgement and coordinative skill. It requires ongoing analytical judgement to correctly estimate and model inflows to and outflows from government accounts based on historical experience. It requires coordinative skill to ensure that the various parts of government involved in the process (e.g. the revenue authority or department; the central bank; the accountant general; the budget department; and ideally the finance functions of the main spending ministries) are fully engaged in providing timely and accurate data and forecasts.

1.5 Designing appropriate reforms in low-income countries

1.5.1 Identifying the key problems to be addressed

The above discussion has outlined the challenges involved in cash management and how low-income countries struggle, for a number of reasons, to achieve effective cash management. Given these difficulties, the starting point for any reform is to consider the key problems that need to be addressed. These problems are likely to vary considerably according to different country contexts.

In most advanced economies, as noted above, spending is limited through a credible budget process and a well-established system of cash controls. In such circumstances there are typically two key objectives of cash management:

- *To execute the budget* – and make payments when they are due.
- To do this *in the most cost-effective and efficient way* – with processes that not only minimise the net interest costs incurred in the use of cash but which also facilitate good planning and link efficiently with debt management and related policies.

Both of these objectives still apply in low-income countries, but cash management (or 'cash rationing') is also often used to serve a third objective, namely:

- To *control expenditure*, keeping it within aggregate spending targets.

This distinction has important implications for the donor–government dialogue. There is a need to be clear about what the government expects from cash management reforms. For finance ministry officials, cash management reform might mean 'wanting to control spending more effectively'; for external technical advisers, however, such reforms might have the objective of 'reducing interest costs to the government'. Being clear about the specific cash management objectives that need to be supported reduces the risk of receiving advice intended to 'fix' a very different problem.[4]

Given these multiple objectives of cash management reform, there is a need to carefully consider reform proposals. Reforms may seek to improve performance in more than one aspect of cash management. For example, even in a context where strict cash limits are used to manage the aggregate fiscal position, there may still be opportunities to use cash more efficiently, such as by consolidating some bank accounts to reduce debt servicing costs. There is also some agreement that basic internal controls are a precondition for developing more sophisticated PFM and cash management systems (Diamond, 2013). However, given the manner in which cash management performance is related to other parts of the budget cycle, the benefits of introducing a complete and modern cash management system may not be realised until the upstream process of budget preparation results in a realistic guide for future expenditures (in aggregate at least) and commitment controls are strengthened. As a result, and given that resources are likely to be limited in capacity-constrained environments, it may be more appropriate to address basic issues first.

1.5.2 Improving the cost-effectiveness of cash management operations

Implementation of a TSA

Although the implementation of a TSA is a common reform promoted by the World Bank, the IMF and others, it is not straightforward. Aiming for a *complete* TSA and strict adherence to it might not be technically or politically possible in all low-income countries. Pattanayak and Fainboim (2011) identify four pre-conditions for implementing a TSA: (a) the right legal framework; (b) a complete inventory of existing bank accounts; (c) political support for reforming banking arrangements; and (d) the right banking networks and technology. Accordingly, governments in low-income contexts might usefully take into account the following points when considering a TSA reform strategy:

- *Be realistic about whether a full TSA can be implemented in the country context.* At a technical level, electronic payment and banking systems may not be sufficiently developed to allow transactions to be made on a daily basis, or may cover only a proportion of expenditures. At an administrative level it is also not uncommon to see reform efforts stall after early progress because ministries do not want to give up control over their accounts. This may be a particular challenge in ministries that generate their own fee income. Keeping certain accounts separate can also serve political interests by reserving some funds outside of public scrutiny. Typically, the starting point is to develop a full list of accounts and then consolidate those that are redundant. Rather than aiming for a full TSA from the start, reformers should set a realistic target for what can be achieved after this first step.
- *Be aware of how a TSA is likely to affect the existing control environment.* In a weak control environment there may in fact be benefits to maintaining sub-accounts within the TSA that impose cash limits on ministry expenditure. Such an approach allows governments to reap the efficiency benefits of account consolidation, while keeping cash limits on individual ministry accounts and facilitating easier tracing of transactions to specific ministries. For example, the Government of Malawi recently reintroduced sub-accounts for ministries within the TSA, reversing a previous decision on consolidating accounts from 2005. This decision was made in the wake of audit reports that showed widespread instances of ministries executing payments in excess of the warrants they had received in a given period. In addition, donors may insist that their funds are paid into separate government accounts and monitored individually.

Forecasting cash requirements

Williams (2009:3) explains that '[i]nternational experience offers little guidance as to the precise organisational responsibility for bringing together the forecasts'. Countries will need to experiment to find the institutional structure that best matches cash management demands with their capabilities. Reviewing this part of the literature suggests some key lessons:

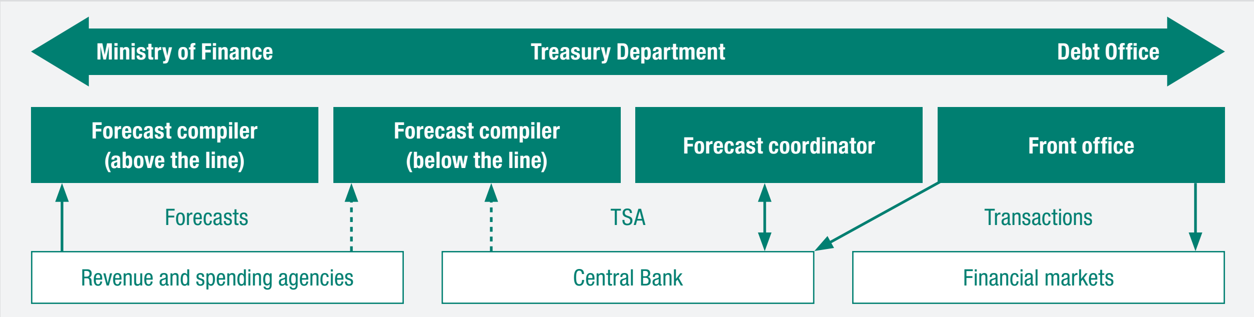
4. Differentiating between the objectives of PFM reforms is not always straightforward. Systems are interrelated, so some reforms may ultimately satisfy multiple objectives at once. Improving spending controls, for example, may also support more efficient cash management. However, the immediate objective is to keep expenditure within approved limits. It is this objective which should be discussed with the government when considering what needs to be reformed.

- *Ensure that the right actors are involved and facilitate engagement*. Good cash-flow forecasts require effective coordination across a range of players. A common recommendation for strengthening cash-flow forecasting in low-income countries is to form a 'cash management committee' supported by a 'cash management unit' in the treasury department. The committee might comprise senior officials from the finance ministry and the central bank and major government departments responsible for warrants, revenue, payments, debt and financial markets (many of whom may be in the finance ministry). In many low-income countries the challenge for the finance ministry is to use its coordinative and regulatory powers to facilitate effective coordination among the wider policy network.
- *Recognise that initial cash forecasting may be relatively crude, but aim to improve accuracy over time*. Due to data limitations and other capacity constraints, cash management forecasting may not initially cover all of a government's financial activities. In such circumstances the cash management unit may usefully concentrate primarily on the largest ministries and revenue sources (covering some 80% of revenues and expenditures, for example). The aim is to support immediate operational decisions rather than fully conform to accounting standards (the latter objective typically requires greater precision and attention to detail). The accuracy of cash forecasts can be gradually improved and the forecast time horizon can be gradually increased by iteratively adapting the approach where there are regular errors and by repeatedly evaluating the accuracy of forecast results.
- *Be clear about the policy objective(s) of the cash management committee*. As with the general point made about the donor–government dialogue, it is important to know the key variables that the committee is trying to monitor and influence as well as the overall objective it is trying to support. Is the main objective of cash management to achieve efficiencies in short-term cash management, for example? Or is it to execute the budget more accurately in line with plans? Or to minimise deficits in order stay on an IMF-sponsored macroeconomic programme? Clarity is important because each of these objectives requires different information.

Box 6: Organisational arrangements for cash-flow forecasting

Cash management requires coordination across a range of departments in the finance ministry (e.g. across the budget and treasury departments) as well as institutions such as the central bank, revenue authority, debt management units and, sometimes, larger spending ministries. Specific country examples of cash forecasting structures have been documented (or recommended) in part in case studies of Malawi (World Bank, 2000) and Tanzania (MEFMI, 2001). (Full sources of those studies are listed later in the final reference list.) Some of the possible options for how cash management institutions can be structured are set out in the diagram below.

Figure 3: Organising responsibilities for cash management



There are multiple transactions that affect the availability of cash, and these transactions are often monitored by different units. Critically, one department may be responsible for the compilation of 'above the line' (i.e. revenue and expenditure) forecasts that track the budget deficit, while a different department is responsible for recording those transactions that fall 'below the line' (i.e. debt and other financial transactions) and which show how the deficit is being financed. All this information needs to be brought together to ensure effective cash-flow forecasts.

Such compilation of information is important because if a forecast is only based on income and expenditures, and if expenditures exceed income, there will be a deficit (above the line) that requires financing. However, there may not be a shortage of cash if, for example, the government has raised cash that month through a domestic debt auction (below the line). It is only possible to know the government's cash needs by obtaining a reasonably complete picture of the major transactions both above and below the line. Processes to generate forecasts must therefore bring together and analyse information from all relevant departments.

Source: Williams, 2009

1.5.3 Better budget management and commitment control

Where a finance ministry has to resort to 'cash rationing' to control spending, the root causes behind the need for this response tend not to lie solely in failures in cash management processes. In many cases, persistent shortages of cash to make payments result from failures in upstream technical and political processes for formulating and executing a credible budget. Paradoxically, the best ways to improve cash management outcomes may therefore be not only to reform the cash management systems but also to focus on addressing the causes of the persistent imbalance between obligations and the cash to pay for these obligations through an improved budget process.

Budget preparation and the issuance of warrants

There is an extensive literature on reforming budget institutions in low-income countries to deliver a better budget (e.g. Allen, 2009; Gupta and Ylaoutinen, 2014). While space does not allow for this literature to be fully explored in this introductory guide, the following recommendations may be relevant to support better cash management reforms in low-income countries:

- *Make the revenue forecasting process more transparent*. A number of countries bias their revenue figures upwards in order to justify higher spending, which causes problems when those targets cannot be met during the year. Danninger et al. (2005) suggest that making forecasting more transparent is one way to reduce bias and interference. Accordingly, they suggest improving access to information and ensuring greater participation of non-government institutions in revenue forecasting.
- *Be realistic about the actual resource envelope as early as possible*. Recurring problems with aggregate estimates for the budget can often be identified even before the budget is published. Simple retrospective analysis can uncover persistent high-level over- or under-optimism in key aggregates. Estimates of resource availability may be crude and yet still be effective. In Uganda, for example, a simple rule of thumb was applied to discount *pledged* donor budget support from forecasts in order to arrive at a more accurate estimate of how much support would actually be disbursed.
- *Consider setting periodic aggregate targets for budget authorisations from the start of the financial year*. In some countries, cash flows are fully honoured at the start of the financial year but later there is a desperate scramble to limit cash outflows to achieve planned deficit targets. Wokadala and Davies (2012) document how Uganda linked quarterly budget authorisations to the achievement (or non-achievement) of macro targets. This gave the government more space to make adjustments in later periods of the financial year.
- *Consider the appropriate frequency for issuing warrants*. Warrants can be issued for different periods. Some countries use warrants to authorise budget spending for the full year ahead while others do so only for the month or fortnight ahead and repeat the process regularly. Monthly warrants can provide the finance ministry with a better tool to respond to changing circumstances; however, this makes it difficult for ministries to plan and implement programmes. One way of supporting more predictable funding for line ministries would be to move towards conservative quarterly allocations, or to guarantee that certain kinds of expenditure obligations will always be honoured.
- *Regularly update a record of risks to budget implementation arising from revenue under-performance or expenditure overruns*. This record might include forecasts to check the following: whether large or recurring commitments are in line with initial forecasts (e.g. on debt servicing, wages and pensions); and whether the performance of big-ticket expenditure programmes is on track. The record might also highlight instances of specific commitments that have been funded or will need to be funded, but which were not initially budgeted for. Such a record would give decision-makers a guide to any likely deviations between budget targets and the likely outturn, in the absence of any corrective measures.

Improving commitment controls

As discussed above, commitments are a critical part of the cash management process, since it is at this stage of the expenditure chain that government becomes liable for payments. Commitment controls can therefore be especially helpful in limiting spending, and strengthening such controls is frequently recommended to low-income countries as part of reforms to strengthen budget execution. Standard reform recommendations include the following:

- *Manual commitment registers*. Many countries operate mainly cash-based accounting systems that do not systematically capture information on commitments. A common intervention is to introduce reporting systems to keep track not only of payments but of all commitments and expenditure arrears. Where a country's computerised expenditure management system does not offer this function, reporting can be managed in physical books or common software packages such as Microsoft Excel or Access. These records are often called 'vote books'.
- *Automating systems of commitment controls*. Modern software packages for integrated financial management systems typically incorporate electronic commitment systems. These work by blocking the approval of purchasing orders where the budget is insufficient to cover the value of the commitment. This system can help to keep spending within budget limits by providing a disincentive for making informal commitments without a purchase order – a disincentive that is often lacking in low-income countries.

Box 7: Cash management and forecasting in Sierra Leone

Sierra Leone has recently taken steps to improve its cash management and cash forecasting processes. Sierra Leone is a challenging environment in which to establish such systems. The country experiences substantial macroeconomic volatility in light of its relatively small and undiversified economy, which relies heavily on exports of primary commodities and donor funding. From an institutional perspective, Sierra Leone's low capacity in the public sector and dysfunctional politics makes the technical application of rules-based cash management procedures a difficult task.

Sierra Leone has instituted reform through a number of straightforward steps. It has identified a lead institution, the Accountant General's Department (AGD), to be responsible for cash management issues. AGD staff have brought together the key central actors in the cash management process (e.g. the finance ministry, the central bank and the revenue authority) to share information, encouraging a continuous dialogue between them. Efforts to gather and present clear basic data on the government's cash position have been anchored around an agreed process to prepare for a weekly 'Cash Management Committee'. This weekly process has been adapted and changed several times in order to establish arrangements for data collection and presentation that fit within existing institutional and political constraints.

With basic procedures to track the current cash position now agreed, attention is turning to the development of better cash forecasting. Efforts are focused on building an accurate immediate-term and short-term forecasting horizon, with a view to extending this over a longer period as expertise grows. A key part of the forecasting process is retrospective analysis of previous cash management outturn compared to expectations. This analysis can then be used to inform future forecasts. Improvements in cash management and forecasting have also revealed deficiencies and inconsistencies in related areas of fiscal management (e.g. debt issuance and fiscal reporting), and these are now also being tackled alongside cash management issues.

Source: based on experiences of the Budget Strengthening Initiative

- *Explicit authorisation for multi-year commitments*. Multi-year commitments such as capital projects cannot be stopped easily without incurring additional costs. For this reason, some countries require line ministries to declare the full cost of a commitment and to present the requirements for annual payments so they can be included in medium-term budget forecasts. In some cases, Parliament authorises the full cost of a project and not just the annual provision in the budget.
- *Centralising authority to commit.* A more radical reform is to centralise the control of certain commitments within the finance ministry itself. For example, commitments to spending on capital projects over a certain size might be centralised in the finance ministry, with no formal commitment allowed to be entered into without approval at central finance ministry level. In Sierra Leone, the Ministry of Finance has informed all major suppliers that only financial commitments bearing a physical stamp of approval from the Ministry of Finance should be taken as a guarantee of future payment (see Box 7).

1.6 Conclusion

This introductory guide has provided a high-level summary of some of the literature on cash management. It has explained the core differences between the more active cash management systems used in OECD countries and many middle-income countries and the use of cash rationing as a system of expenditure control, particularly in low-income countries. Most of the literature assumes that reforms will gradually allow developing countries to transition to the more active cash management systems found in OECD countries. However, many elements of these reforms may prove challenging to implement in low-capacity countries and it may be more appropriate, therefore, to aim at more modest and incremental changes that build up systems over time. Even the initial reforms required to consolidate bank balances, for example, may bring significant benefits by reducing the opportunity costs of holding idle balances at the central bank and in commercial accounts, and may further serve to stimulate a broader understanding of the number and type of the government's bank accounts.

This introductory guide has separated the different objectives of cash management to provide a way to use the available literature in low-income countries. In such contexts, cash management is used for the following three objectives: (a) to execute the budget efficiently; (b) to ensure that cash is used cost-effectively; and (c) to control expenditures within aggregate spending limits. The third of these objectives does not apply in OECD countries, where expenditure is not controlled on the basis of available cash. However, in many low-income countries, building more effective spending controls is an essential additional measure for making cash management more efficient. Raising awareness of these distinctions amongst government officials who engage in discussions about cash management reforms is necessary to ensure that knowledge about cash management practices is applied in ways appropriate to the specific context.

2. Annotated bibliography of key sources

2.1 Overviews

Lienert, I. (2003) 'A comparison between two public expenditure management systems in Africa'. Working Paper 02/3. Washington, DC: International Monetary Fund.
This paper summarises some of the main differences between Anglophone and Francophone expenditure management systems in a clear and well-structured paper. The sections on budget execution and government banking arrangements are particularly relevant, since these are areas where the two systems differ most. For example, Anglophone countries control spending with a warrant system when funds or permission to spend are released, whereas Francophone countries have formal controls at each stage of the expenditure process. Although the paper debates the relative merits of both systems, this does not imply that one should aim to copy the other or that all Francophone/ Anglophone countries face the same PFM problems.

Potter, B. H. and Diamond, J. (1999) *Guidelines for public expenditure management*, Washington, DC: International Monetary Fund.
These guidelines (only available online) were designed to help IMF economists understand basic expenditure management principles and how public expenditure management influences the macro economy. Sections 4 and 5 cover budget execution and cash planning and management. The paper is action-oriented and effectively highlights some of the typical challenges that governments face when executing their budgets. The guidelines are written to assist IMF economists in monitoring and advising governments on their fiscal performance and do not go into depth about the mechanics of cash management and commitment control.

Tommasi, D. (2007) 'Budget execution'. In A. Shah, (ed.), *Budgeting and budgetary institutions*, pp. 279-322. Washington, DC: World Bank.

Schiavo-Campo, S. and Tommasi, D. (1999) 'Budget execution (Part 2)'. In S. Schiavo-Campo and D. Tommasi (eds), *Managing government expenditure*. Manila: ADB.

Both of these papers provide a simplified overview of budget execution processes. The 1999 chapter has more detail, but the 2007 chapter by Tommasi is also instructive. The 2007 chapter focuses mainly on good practices, such as the treasury single account, and includes a useful discussion of how cash management systems can be conducted, with a good overview of centralised, decentralised and imprest systems for making payments.

Wokadala, J. and Davies, F. (2012) *Uganda: fiscal discipline and cash management*. London: Overseas Development Institute.
This paper provides a brief snapshot that helpfully summarises the arrangements of cash management and commitment control in Uganda in a 'cash budgeting' environment. The authors conclude that these systems have helped establish control over inflation and aggregate spending, although expenditure arrears continue to be a problem. The paper highlights how Uganda's finance ministry was delegated considerable responsibility for cash management, underpinned by strong political support after a period of hyperinflation.

Zohrab, J. (2015) 'Sequencing improvements in cash management', Washington, DC: IMF PFM blog.
This blog provides a useful starting point for anyone seeking to understand what cash management is and why it is useful to consider both cash management and commitment controls together in low-income countries, even if this is not the case in advanced economies. This blog has a different emphasis than standard papers on cash management that focus mainly on using cash resources more efficiently.

2.2 Commitment controls

Pattanayak, S. (2016) 'Expenditure control: key features, stages and actors.' Washington, DC: International Monetary Fund.
This paper is useful for those seeking to get a sense of the range of expenditure management systems used in different countries, as well as those who need a quick introduction to the expenditure management cycle. It provides a simple outline of the key stages of the expenditure cycle and the ways in which controls should ideally relate to each

stage of that cycle. It covers different transaction types and organisational arrangements and identifies common weaknesses in different control 'traditions'. The paper also provides descriptions of the ways in which centralised systems were devolved in France, Morocco and Thailand.

Flynn, S. and Pessoa, M. (2014) 'Prevention and management of government expenditure arrears'. Washington, DC: International Monetary Fund.
This paper gives an overview of what arrears are, why they occur and how they can be controlled and cleared. As with many IMF Technical Notes, there is a focus on central controls and good practices, which may not always be necessary or appropriate in countries with lower levels of capacity and significant challenges in maintaining aggregate spending controls. There are a number of interesting examples of how countries have managed arrears that could be drawn on, though it is not clear whether or not the interventions described were effective.

Radev, D. and Khemani, P. (2009) 'Commitment controls'. Washington, DC: International Monetary Fund.
This note provides a description of different commitment control systems (centralised and decentralised), their objectives and the preconditions for their introduction. It provides greater detail and a more operational focus than Tommasi (2007) and Schiavo-Campo and Tommasi (1999). It is particularly useful for the distinctions it draws between the ways in which different types of spending are committed and the many factors that are likely to impact on the credibility of commitment controls. The conclusions focus mainly on IMF engagements and therefore may not be as useful as the body of the text.

2.3 Active cash management

Williams, M. (2004) 'Government cash management: good and bad practice'.

Williams, M. (2009) 'Government cash management: international practice'. Oxford: Oxford Policy Management.

Williams, M. (2010) 'Government cash management: its interaction with other financial policies'. Washington DC: International Monetary Fund.

Three papers by Mike Williams, who was the first CEO of the UK Debt Management Office. Although these papers all encourage the adoption of more active cash management processes, which may not always be appropriate in low-income countries or fragile states, they do provide an excellent summary of some of the main issues involved in introducing a treasury single account and in minimising bank balances. The 2004 paper gives a quick, well-structured overview, and is a good place to start understanding 'active' cash management. The 2010 paper goes deeper into the interactions with monetary policy and financial market development.

Gardner, J. and Olden, B. (2013) 'Cash management and debt management: two sides of the same coin?' In M. Cangiano, T. R. Curristine and M. Lazare (eds.) *Public financial management and its emerging architecture*. Washington, DC: International Monetary Fund, pp. 283-310.
The focus of this chapter from a recent book on public financial management is on the integration of cash management and debt management, which is clearly articulated. This issue is very much at the cutting edge of cash management reforms in OECD countries, so may not be appropriate in low-income countries or fragile states where debt markets are less developed and spending controls are typically reinforced using cash limits.

Lienert, I. (2009) 'Modernising cash management'. Washington, DC: International Monetary Fund.
This note provides a detailed and technical description of cash management processes and practices in advanced and developing countries. It is aimed at a technical audience and provides guidance to middle- and low-income countries seeking to upgrade their cash management systems. The note illuminates an important difference between, on the one hand, a modern cash management system that aims to maximise returns on government cash holdings by minimising idle balances and, on the other, cash management systems in developing countries that are often a method for controlling expenditure. It also provides a useful description of the treasury single account.

Pattanayak, S. and Fainboim, I. (2010) 'Treasury single account: concept, design and implementation issues'. Washington, DC: International Monetary Fund.

Pattanayak, S. and Fainboim, I. (2011) 'Treasury single account: an essential tool for cash management'. Washington, DC: International Monetary Fund.

These two papers by the same authors explain the treasury single account and some of the common challenges involved in its implementation. The 2011 version is shorter, but carries the same broad messages. One of the most helpful aspects of this paper is its account of the many different ways that a TSA can be implemented, with useful reminders of some of the prerequisites that may not be in the direct control of the government, such as a developed banking system.

Storkey, I. (2003) 'Government cash and treasury management reform'. Manila: Asian Development Bank.
A very brief note on cash management reforms in OECD countries, with specific summaries of active cash management in Australia, New Zealand and the UK. Storkey concludes that these should be encouraged in low-income countries, but is also cautious to note that these types of advanced cash management reforms are not easy for a number of reasons.

Pessoa, M. and Williams, M. (2012) 'Government cash management: relationship between the treasury and the central bank'. Washington, DC: International Monetary Fund. This note from the IMF Technical Notes and Manuals series discusses the interactions between cash management and monetary policy tools. It also discusses the institutional and contracting arrangements for coordinating between the finance ministry and the central bank – largely in the context of developing a 'modern' and transparent cash management system. More detail is provided on recommendations for the cash coordinating committees and arrangements for government accounts in commercial banks than in most other notes.

2.4 Government debt markets

The introductory guide has discussed some of the issues around treasury bills and government bonds as examples of debt instruments that are typically used in government cash management operations. The issues of government debt operations and the numerous different types of debt instruments available comprise an entire field of study in their own right; however, in the context of an introductory discussion on how these relate to cash management, some useful references are:

- **Turner, P. (2003)** ***Bond market development: what are the policy issues?*** **Basel: Bank of International Settlements.**
- **Karacadag, C., Sundararajan, V. and Elliot, J. (2003)** ***Managing risks in financial market development: the role of sequencing*****. IMF Working Paper WP/03/116. Washington, DC: IMF.**
- **Christensen, J. (2004)** ***Domestic debt markets in sub-Saharan Africa*****. IMF Working Paper WP/04/46. Washington, DC: IMF.**

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Allen, R. (2009) 'The challenge of reforming budgetary institutions in developing countries'. IMF Working Paper 09/96. Washington, DC: International Monetary Fund.

Andrews, M., Cangiano, Cole, N. de Renzio, P., Krause, P. and Seligmann, R. (2014) 'This is PFM'. CID Working Paper 285. Cambridge, MA: Center for International Development at Harvard University.

Caiden, N. and Wildavsky, A. (1974) *Planning and budgeting in poor countries*. New York: Wiley.

Checherita-Westphal, C., Klemm, A. and Viefers, P. (2015) *Governments' payment discipline: the macroeconomic impact of public payment delays and arrears*, Washington, DC: International Monetary Fund.

Danninger, S., Cangiano, M. and Kyobe, A. (2005) 'The political economy of revenue-forecasting experience from low-income countries.' Washington, DC: International Monetary Fund.

Daimond, J. (2013) 'Good practice note on sequencing PFM reforms'. Washington, DC: International Monetary Fund.

Dinh, H. T., Adugna, A. and Myers, B. (2002) 'The impact of cash budgets on poverty reduction in Zambia'. Washington DC: World Bank.

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