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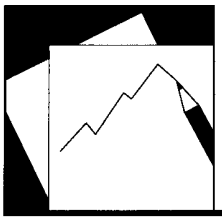

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Accrual Budgeting and Fiscal Policy

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Abstract

Can an accrual budgeting system—a system in which budgetary spending authorizations to line ministries are formulated in accrual terms—serve the needs of good fiscal policy? If so, how must such a system be designed? What are the practical challenges which may arise in implementing sound fiscal policy under a budgeting system which is significantly more complex than traditional cash budgeting? These are the primary questions addressed in this paper. Because any budgeting system must support the control of key fiscal policy aggregates, the paper also considers the case for reformulating fiscal policy in terms of accrual rather than cash aggregates. The primary focus is on the potential fiscal policy role of *net lending* and *net financial debt*. However, the paper also considers whether *net worth* is an aggregate with major fiscal policy relevance.

JEL Classification Numbers: H3, H6

Keywords: accrual budgeting, fiscal sustainability, fiscal stabilization policy, net worth, control totals, net lending, aggregate expenditure.

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I. INTRODUCTION AND OBJECTIVES[1]

This paper considers accrual budgeting from the fiscal policy perspective. Accrual budgeting means that spending ministries are given budgets which are defined in terms of accrual concepts—and, in particular, that the budget sets quantitative limits on the expenses which they incur rather than the cash payments they make. The case for accrual budgeting rests overwhelmingly on its microeconomic benefits in improving the efficiency and effectiveness of expenditure. However, any acceptable budgeting system must support the implementation of an appropriate aggregate fiscal policy. It is therefore of concern that there has been little analysis of the effects of moving to accrual budgeting on the implementation of fiscal policy (other than in respect to the "golden rule"). To fill this gap, this paper considers whether accrual budgeting system can meet the needs of fiscal policy, and whether there are particular design features which should be built into an accrual budgeting system to ensure that it does so.

These questions are closely related to the way in which key fiscal policy aggregates are defined.[2] Many assume that the focus of good fiscal policy must be primarily on cash fiscal aggregates. If this were true, it would raise a large question mark about any move to accrual budgeting because, if the budget places limits on the expenses incurred by each ministry but not on cash expended, it is not immediately clear how the government could successfully target, say, the cash budget deficit. This points to the second set of issues addressed by this paper: Is it in fact true that good fiscal policy requires that key fiscal policy aggregates are defined in cash accounting terms? Might it not be possible to base fiscal policy on aggregates derived from accrual accounting, ensuring a more natural fit between accrual budgeting and fiscal policy? Finally, if one does decide to retain a focus on cash fiscal policy aggregates, is one obliged to stick with a cash budgeting system?

The analysis assumes throughout that the two preeminent fiscal policy functions which any budgeting system must be capable of serving are the assurance of fiscal sustainability and fiscal stabilization policy. The latter means, of course, the promotion of macroeconomic stability through the management of the aggregate demand impact of government fiscal operations. Fiscal sustainability, on the other hand, refers to the degree to which current tax and expenditure policies are consistent with the intertemporal budget constraint—in formal terms, whether the present value of projected primary surpluses is sufficient to cover net debt (Blanchard, Chouraqui, Hagemann, and Sartor, 1990). Because at high levels of net debt it becomes difficult for governments to maintain sustainable tax and expenditure policies, it is commonplace to talk about the "sustainability" of debt. Either way, the practical essence of maintaining fiscal sustainability is keeping debt at moderate levels and avoiding fiscal policies which will result in ballooning deficits.

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[1] The author gratefully acknowledges the valuable comments of Marco Cangiano, Ian Lienert, Gösta Ljungman, David Fjord Nielsen, Eivind Tandberg, and of participants in a seminar in the Fiscal Affairs Department of the IMF in July 2008 at which a draft of this paper was presented.

[2] By "key fiscal policy aggregates" we mean the aggregates in terms of which the government specifies its main fiscal policy objectives, targets or rules—such as a balanced budget over the business cycle or reduction of debt to below 60 percent of GDP.

Fiscal sustainability and macroeconomic stabilization are, of course, not the only objectives for which governments employ fiscal policy. Other objectives include tax smoothing and intergenerational equity. A good case can be made that accrual budgeting is particularly useful if one is pursuing intergenerational equity via the so-called "golden rule" (see below). However, even if this is the case, fiscal sustainability and macroeconomic stabilization would generally been seen as higher-order fiscal policy objectives which it is absolutely essential that the budgeting system support.

For ease of exposition, this paper makes virtually exclusive use of the GFS 2001 conceptual framework of accrual accounting[3]—which European readers should note is essentially the same as ESA95.[4] The analysis also assumes (as is the case in most, but not all, countries) that fiscal policy is focused on general government fiscal aggregates—which exclude the public corporations sector—and not on public sector aggregates.

II. WHAT IS ACCRUAL BUDGETING?

"Accrual budgeting" is not a term with a generally agreed meaning in the literature, which makes a clear definition an essential starting point for any discussion of the subject. In this paper, accrual budgeting is defined as *the specification of budgetary expenditure authorizations and revenue estimates in terms of accrual accounting measures*—that is, measures which are specific to the accrual system of accounting. This means, in particular, the use of accrual concepts to specify budgetary *control totals*. Control totals are the quantitative spending limits imposed on spending ministries, whether as appropriations in the annual budget law or by administrative directive (e.g., from the minister/ministry of finance).[5]

The definition distinguishes accrual budgeting from accrual accounting, where the latter refers to the ex post recording and reporting of financial operations of government in accrual terms. It is therefore a definition which is consistent with the widely accepted notion that governments may *budget* in cash terms while *accounting and reporting* in accrual (including

[3] Although GFS/ESA is the appropriate framework for fiscal policy, spending ministry financial management and therefore the control totals used in the budgeting system will in practice be based on some version of generally accepted accounting practice. The precise specification of control totals under an accrual budgeting system will need to take systematically into account the important differences between these two frameworks. We abstract almost entirely from these more detailed issues in what follows.

[4] There is one major qualification to this, which is that ESA95 does not recognize the pension liability of governments to their civil servants as a balance sheet item, with the further consequence that changes in the pension liability are not part of ESA95 net lending. This represents an inappropriate exclusion from consideration of a government liability which is in many countries quite large. The analysis in this paper assumes throughout that, as under GFS 2001, the pension liability and pension expenses are recognized.

[5] In this respect, the paper largely abstracts from consideration of those expenditure authorizations which do not take the form of quantitative limits (e.g., authorizations to pay formularized entitlements such as social benefits or authorizations for spending ministries to retain and spend certain own-source revenues—so-called "net appropriations").

cash flow) terms. A growing number of governments have introduced accrual accounting in the general government sector, motivated by the belief that accrual information can significantly improve budget decision-making and financial management more generally. However, the use of accrual accounting information—such as actual or projected balance sheets or operating statements—merely to inform the preparation of a budget, without redefining the control totals in accrual terms, does not fit the definition of accrual budgeting used in this paper.[6]

What does it mean to use accrual concepts to specify budgetary control totals? The most basic type of accrual control total is an *expenses*[7] *control total*—that is, a centrally-imposed quantitative limit on the *expenses* each spending ministry is permitted to incur within the budget year.[8] An expenses control total means that current year expenses are counted as the use of the budgetary funding, irrespective of the timing of any associated cash payment. For example, the following would be counted against the expenses control total:

- Bills payable: amounts which are owed for goods and service delivered and used during the financial year, even though payment may not be made until the next financial year.
- The additional entitlements for future pension payments which civil servants accumulate during the financial year.[9]
- Stocks (of supplies, etc.) actually used in the production process during the year, irrespective of when those stocks were purchased.
- Vacation or long service leave entitlements earned by civil servant during the financial year, even when he or she does not actually take that leave until a subsequent year.
- Depreciation of the ministry's fixed assets.

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[6] The definition employed here is therefore more limited than that of Lüder and Jones (2003: 35), for whom "the term 'accrual budgeting' means, in practice, the extent to which the accrual accounting records and measures are used in the budgeting process."

[7] Throughout this paper, the term "expenses" always refers to the accrual concept. Expenses are, of course, a measure of the costs of service delivery (and transfers), irrespective of when those costs are paid. Equivalently, using GFS terminology, expenses are reductions in net worth arising from transactions.

[8] As explained later, it is not essential that an expenses control total cover all categories of the ministry's expenses. The imposition of an expenses control total covering most categories of each spending ministry's expenses should, nevertheless, be regarded as a core feature of any accrual budgeting system.

[9] Note that the liability to pay civil service pensions when civil servants retire is usually not left in the hands of spending ministries, but remains with the ministry of finance or a government-wide pension organization. Where this is the case, accrual budgeting requires that spending ministries be charged an employer contribution estimated to be sufficient to cover the additional pension entitlements accrued.

In some accrual budgeting systems, a so-called *capital charge* is also charged against expense control totals (Robinson, 1998a).[10] However, capital charging is a fading fashion, having been abolished in Australia in 2002 and being likely to be abolished in the near future in the U.K. (HM Treasury, 2008).

Expenses control totals should not be confused with commitments control totals. At the time an order for the delivery of supplies or services is placed or contract signed with a supplier, it would be counted against a commitment control total, whereas under an accrual budgeting system it will in principle only be counted when the supply has been received and used in the production process. Multi-year contractual capital expenditure obligations are also counted against commitments control totals at the time the contract is signed (and have historically been particularly used for this purpose in countries such as France and the U.S.)—long before the assets concerned give rise to any depreciation expense which would be counted against an expenses control total. Prepayments for goods and services to be delivered in future financial years will also be counted against commitments control totals, but not against expenses control totals.

As important as expenses control totals are, it should not be thought that this is the only possible type of accrual control total. As will be discussed in detail below, it is possible to have an accrual capital expenditure control total, for the purposes of which an accrual rather than cash concept of capital expenditure is used. ("Accrual capital expenditure" should not be confused with depreciation.) It is for this reason that the definition offered above refers in general terms to the use of accrual concepts to define control totals, and not merely to the use of expenses control totals.

The conception of accrual budgeting employed here parallels the widely understood conception of *cash* budgeting as a system of budgeting in which control totals are defined wholly or primarily as limits on payments—and of cash/commitments budgeting (as, for example, in the Argentine, French and the U.S. systems) as a system in which control totals are set for both payments and commitments. As the latter example makes clear, budgeting systems may be of a hybrid nature, using (say) mixtures of cash and commitment concepts, or accrual and cash concepts, in the definition of control totals.

Using the definition employed in this paper, the countries which currently have accrual budgeting systems include Australia, Denmark, New Zealand, and the United Kingdom. Other countries are considering its adoption.

Accrual budgeting should not be confused with the *accrual output budgeting* (AOB) systems introduced by Australia and New Zealand in the 1990s.[11]

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[10] The capital charge is not an expense in the accounting sense, but rather a synthetic charge which is supposed to reflect the "opportunity cost" of capital employed by the ministry. It is typically calculated as a percentage charge (e.g., 3.5 percent in the U.K.) on the net assets of each spending ministry.

[11] While accrual budgeting was one element of AOB, these systems went well beyond accrual budgeting in attempting to restructure budgeting on a "purchaser-provider" basis in which the government was to pay agencies competitive "prices" for their outputs (Robinson, 2007). This led to the conceptualization of budget

(continued…)

The main benefits which proponents of accrual budgeting claim for the system are microeconomic, and pertain to the allocative and technical efficiency of public expenditure. Specifically, it is claimed that accrual budgeting:

- Improves the effectiveness and efficiency of expenditure: more concretely, that by ensuring that these budgetary decisions are made in the light of the true costs of inputs and outputs, it promotes better choices about expenditure priorities (allocative efficiency), about the inputs to be used in producing public services, and about outsourcing vs. internal production (both technical efficiency).

- Improves decision-making in respect to assets—including the acquisition, disposal and maintenance of fixed assets, and the management of stocks. Of particular relevance to this paper is incentives for spending ministries to sell unneeded nonfinancial assets, arising from the inclusion of depreciation in the expenses budget.[12] The sale of such assets reduces the ministry's depreciation charge and thereby permits increased spending on other types of expenses.

It is not the purpose of this paper to assess these claims. It is, nevertheless, relevant that most of the putative benefits of accrual budgeting can only potentially be realized in the context of broader reforms which grant much larger operational freedom to spending ministry as part of a more performance-oriented budgeting and public management system. Without, for example, increased spending ministry freedom to decide the input mix to be used to deliver public services, or to decide whether to produce the service internally or outsource production, there is little point in worrying about using the budgeting system to fine tune input price signals to ministries.

III. Fiscal Sustainability and Capital Expenditure Controls

To assure fiscal sustainability, it is essential to contain the level of public debt to appropriate levels. To do this, it is necessary to avoid excessive budget deficits (appropriately defined). This in turn requires appropriate budgetary control over aggregate expenditure (again, appropriately defined). The validity of these basic propositions is not affected by the system of accounting used for budgeting.

This has a crucial implication for the design of an accrual budgeting system. A budgetary regime based on expenses control totals alone is insufficient to contain the level of debt, and cannot therefore support the implementation of a sustainable fiscal policy. This is because if

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funding provided by the government to agencies as "revenue" in spending ministry accounts, earned as a price paid for the delivery of outputs. Such an accounting treatment is derived not from the use of distinctively accrual concepts, but from the treatment of government agencies as if they were businesses.

[12] And also from net capital expenditure control totals, discussed subsequently.

control totals are set only for expenses, capital expenditure will be unconstrained.[13] (The fact that expenses include depreciation arising from past capital expenditure does not limit capital expenditure in the present.) Yet capital expenditure, ceteris paribus, adds significantly to net debt, as well as impacting substantially on aggregate demand. It follows that any accrual budgeting system must in some way limit the quantum of capital expenditure. The most simple and transparent way of doing this is the traditional way—to impose budgetary control totals in respect of spending ministry capital expenditure. This is what is done under the accrual budgeting systems which operate in both New Zealand and the U.K.

One reason why this point may not be as obvious as it should be is that two countries—Australia and Denmark—chose to introduce versions of accrual budgeting in which, unlike New Zealand and the U.K., there are no explicit control totals over annual capital expenditure. In Australia's case, the legal appropriations basis for capital spending provides what is in essence a pool of funding which parliament has authorized spending ministries to draw upon at any time for capital purposes. In Denmark's case, capital expenditure is financed by loans by an internal state loan scheme, and the budget law sets ceilings for such loans to each ministry, rather than annual capital expenditure budgets. In both cases, were ministries to draw particularly heavily on this pool of funding in any given year or sequence of years, the result would be a large surge in capital expenditure which would have undesirable fiscal policy consequences. Capital expenditure appropriation arrangements in these two countries are detailed in Box 1 below.

The reason that this is not a problem in either Australia or Denmark is that the level of annual capital expenditure is constrained by executive government decision. In both countries, cabinet approval is required for major capital projects to proceed. In Denmark, for example, projects worth more than approximately US$10 million must be approved centrally, so that major capital works such as buildings and other infrastructure are excluded from the system.[14] In Australia spending ministries submit their capital expenditure plans to the finance ministry as part of the budget process for approval.[15] So what has in essence

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[13] Over time, of course, capital expenditure generates depreciation expenses, but one cannot necessarily rely upon awareness of the *future* impacts of capital expenditure on expenses budgets as an adequate fiscal discipline.

[14] Sums below that limit also require central approval—namely, those that require an increase in the ministry's borrowing limit. In commenting on a draft of this paper, the Danish authorities noted that the budgeting system in Denmark, as well as the control of the state's, local municipalities' and regions' budget, is subject to the control of fiscal policy in a macroeconomic setting. In their view, as the focus here is on the fiscal effect/impulse of fiscal policy in the short term, and on fiscal sustainability in the long term, the before mentioned is completely decoupled from the development in actual accounts.

[15] In Australia, state governments which have introduced the same type of appropriation model as the national government have other arrangements which remove the discretionary power of spending ministries over the aggregate level of capital expenditure. In the state of Queensland, for example, spending ministries are not able to carry forward for future use any excess of the depreciation element of their expenses appropriation over the capital expenditure they undertake in the year concerned. And in the state of Victoria, spending ministries must obtain central approval from the ministry of finance to access depreciation funding.

Box 1. Capital Expenditure Appropriation in Australia and Denmark

In the Australian system, the main source of funding for ministry capital expenditure is the depreciation component of the expenses appropriation, supplemented when necessary by funding via a separate "equity injection" appropriation.[1] Unlike other accrual budgeting systems, depreciation is not only counted against the expenses appropriation. It is also funding which the ministry concerned can use at any stage it wishes in the future to fund capital expenditure. To the extent that a ministry's capital expenditure in any year is less than its depreciation, it accumulates "surplus" depreciation funding which it can use in future years. At any given time, therefore, each ministry will have a stock of accumulated depreciation funding which it can draw on at its own discretion, without requiring central authorization, for capital expenditure.[2] The equity injection appropriation, on the other hand, is used to provide ministries with additional capital funding when depreciation funding is insufficient to finance significant capital expenditure which the government wishes to proceed. Under this system, ministries can accumulate quite large pools of capital funds (mainly depreciation funding).

In the Danish system, all capital expenditure by government ministries is financed by internal loans from the ministry of finance, which must be repaid and upon which interest is charged. Parliament sets loan limits for each spending ministry as part of the annual budget legislation. Something like this type of capital loan arrangement may be found in some other Scandinavian countries which operate cash budgeting systems. However, the Danish accrual budgeting system has given this arrangement a distinctively accrual twist, the most important element of which is that ministries now repay the principal on its capital loans when they are charged depreciation against their expenses appropriations (Finansministeriet, 2006).

[1] Ministries are also permitted to supplement their capital funding by asset sales proceeds. We abstract from this and other second-order details here.

[2] The original rationale behind this system was a capital maintenance doctrine, discussion of which is beyond the scope of this paper. See Robinson (2002).

happened in each country is that regulation of annual capital expenditure by the executive arm of government serves the function performed by annual parliamentary capital expenditure appropriation limits in other countries.

The Australian and Danish systems may have certain advantages, but critics might suggest that they each suffer from disadvantages in respect to transparency and democratic control by parliament.[16] The decision of Australia and Denmark to adopt the second approach and dispense with explicit capital expenditure limits is one way—and not the only possible way—to design an accrual budgeting system. The alternative approach is, as in New Zealand and the U.K., to continue to impose an explicit capital expenditure control total—an explicit quantitative limit on total capital expenditure imposed by parliament or the executive

[16] A Committee of the Australian Senate has criticized the depreciation appropriation regime as "opaque" and asked the government to consider the reintroduction of capital expenditure appropriations. More generally, the Committee noted that the appropriations regime associated with the Australian accrual output budgeting system has "posed challenges for parliament's control of the appropriations process" (Senate Standing Committee on Finance and Public Administration, 2007: ix, 58, 75-76). As Blöndal et al (2008, p. 31) report, the Australian ministry of finance is reconsidering the capital appropriation arrangement.

government. What can certainly be said is that an accrual budgeting system must *either* include an explicit capital expenditure control total or it must employ indirect means of limiting annual capital expenditure so as to achieve the same result.

It might seem that the imposition of a control total on capital expenditure simply reintroduces a key feature of traditional cash budgeting systems. However, this is not necessarily the case. It is, as indicated at the outset of this paper, possible to use for this purpose an accrual concept of capital expenditure—the precise meaning of which is set out below. If a capital expenditure control total defined in accrual terms is combined with an expenses control total, one has a fully accrual budgeting systems, in the sense that all control totals are defined in accrual terms. Alternatively, one might stick to the cash concept, in which case one would have a hybrid budgeting system with an accrual expenses control total and a cash capital expenditure control total.

IV. The Accounting Basis of Key Fiscal Policy Aggregates

The choice of whether to define capital expenditure control totals in terms of a cash or accruals concept is related to a more fundamental choice which had major ramifications for the design of control totals in an accrual budgeting system: namely, the choice of the accounting basis of key fiscal policy aggregates. If the key fiscal policy aggregates are defined in cash accounting terms, it makes sense also to define the capital expenditure control in cash accounting terms, just as under a cash budgeting system. The choice of an accrual concept of capital expenditure, by contrast, hints at a different approach to the definition of the key fiscal policy aggregates.

As noted at the outset, it is a widely held view that it is essential to define key fiscal policy aggregates in cash terms. In respect to fiscal sustainability, the assumption seems to be that debt is necessarily a cash accounting concept and, therefore, that the key to ensuring debt sustainability must be the management of the cash budget balance (or some variant thereof).[17] And in respect to stabilization policy, the view seems to be that it is through cash expenditure that government adds to aggregate demand, and through cash revenue that demand is subtracted, so that is it once again the cash fiscal aggregates which matter.

It is not, however, the case that fiscal sustainability requires the management of cash aggregates. Controlling the level of debt is certainly fundamental to fiscal sustainability. However, accrual accounting offers a debt measure—what we will call here *net financial debt*, defined as liabilities minus financial assets—which is arguably superior to conventional cash accounting debt for fiscal sustainability purposes. The reason that it is a superior measure is that it captures assets and liabilities which are manifestly relevant to sustainability, but which are ignored by the conventional measure. Specifically, it counts, in

[17] Subject possibly to an acknowledgement that, in practice, it may be appropriate to make certain ad hoc accrual adjustments to the cash budget balance used for this purpose (for example, excluding privatization receipts).

addition to conventional debt obligations, quasi-debt liabilities such as civil service pension liabilities, financial lease obligations, de facto borrowing via public-private partnerships (PPPs),[18] and the stock of bills payable.[19] These liabilities can be substantial, and fiscal policy is manifestly improved by targeting a broader debt measure which includes them. This is not, of course, to suggest that any type of debt measure can ever provide all the information required to assess fiscal sustainability, the fuller assessment of which will always require projections of expenditure and revenue trends—so as to capture challenges such as the fiscal impact of adverse demographic trends. Theoretical constructs suggested by Buiter[20] (1982) and other economists may in principle do this, but these are not intended to have practical ongoing accounting or statistical application.

Box 2. Net Financial Debt

The stock measure that this paper suggests is superior for fiscal sustainability purposes to the net debt measure provided by cash accounting is what GFS 2001 terms *net financial worth (NFW)*, defined as total financial assets minus total liabilities. However, for ease of exposition, and following Canadian terminology (Statistics Canada, 2006: 45), the paper uses the term *net financial debt* (NFD), which is NFW with the sign reversed: i.e., liabilities minus financial assets. In addition to recognizing on the liabilities side various non-debt liabilities such as those mentioned in the text above, NFD recognizes financial assets not taken into account in the conventional net debt measure such as accounts receivable and—if, as in most countries the fiscal policy focus is on general government fiscal aggregates as opposed to public sector wide fiscal aggregates—holdings of shares in private sector companies (which might be held by a government pension fund). It also includes the value of the government's equity in public enterprise, because this is recognized as a financial asset in the general government balance sheet. From a sustainability point of view, the recognition of a broader class of financial assets and liabilities is useful because of their relevance to fiscal sustainability.

It is useful to clarify the relationship of NFW/D to Net Worth:

$$\begin{aligned} \textit{Net Worth} &= \textit{Assets} - \textit{Liabilities} = (\textit{Financial Assets} + \textit{Nonfinancial Assets}) - \textit{Liabilities} \\ &= \textit{Net Financial Worth} + \textit{Nonfinancial Assets} \end{aligned}$$

Or expressed differently,

$$\left|\textit{Net Financial Debt}\right| = \left|\textit{Net Worth} - \textit{Nonfinancial Assets}\right|$$

[18] That is, the component of the contractual payments made by government to the private provider which represents the reimbursement for the cost of construction of the PPP asset. In practice, of course, estimating this component can sometimes be difficult.

[19] Discussion also continues on whether other items such as social security obligations should be treated as liabilities.

[20] Which incorporated the implications of current fiscal policy by, for example, treating the present value of future revenue flows as an asset.

The considerable difference between accrual and cash debt measures is illustrated by the impact of the recent bank bailouts in many countries. Governments have injected large amounts of money into ailing banks, with the result that their conventionally-defined debt will have, broadly speaking, risen by the same large amount. However, they have acquired financial assets—in the form of the transfer of distressed assets, or debt/equity issued by the banks—in return for the funds injected. Net financial debt will recognize not only the increase in conventionally-defined debt, but also the value of these financial assets. So the impact of the bailouts on net financial debt will be equal to the difference between the capital injected into the banks and the value of the bank financial assets acquired in the transaction. If the financial assets acquired were of the same value as the capital injected, the impact on net financial debt would be zero. Only to the extent that these assets are worth less than the capital injected will net financial debt increase.[21]

The flow counterpart of net financial debt is what in the GFS/ESA framework is called *net lending/borrowing*, henceforth abbreviated to *net lending*. Reflecting the broader debt measure to which it is linked, net lending recognizes as deficit financing transactions which impact on fiscal sustainability without affecting the level of conventionally-defined net debt. For example, net lending:

- Counts increases in the government's civil service pension liabilities as part of the deficit, whereas the cash budget balance does not.

- Involves a more accurate treatment of interest expenditure, which avoids the measurement distortions which arise under cash accounting from the variety of arrangements for effecting interest payments (e.g., zero coupon, etc.).

- Cannot be manipulated via the privatization of public corporations, because such privatization receipts are treated as financing transactions rather than revenues. Expressed differently, they represent simply the transformation of one time of financial assets into another type of financial asset.[22]

Net lending is often referred to as the accrual equivalent of the cash budget balance, by which is meant that just as the cash balance is the key instrument for managing the level of conventional net debt, so net lending is the key instrument for managing net financial debt. Expressed differently, the difference between the two measures is that, on that outlays side, what reduces the cash balance are transactions which increase debt—i.e., payments—

[21] At the same time, this example highlights the practical issues that the accrual measure can occasionally face in respect to the application of the market valuation principle to difficult-to-value assets, because a key factor behind the banking crisis has been the difficulty of valuing many of the complex financial assets held by the banks. Another interesting aspect of the example is the implications of market valuation in a context where financial meltdown temporarily reduces the value of some financial assets to a level well below what they may be worth when the crisis is over. Under these circumstances, the initial impact of the bailouts on net financial debt will be greater than the longer term impact when there is some recovery in asset prices.

[22] This refers, of course, to *general government* net lending.

whereas what increases net lending are transactions which increase financial liabilities, irrespective of whether these financial liabilities result in payment this year or in subsequent year. This difference is mirrored on the revenue side in the manner in which revenue is conceptualized.

Net lending and the cash balance will generally track one another reasonably closely—and, indeed, it is easy to map out steady-state conditions where they will be essentially identical. However, the two measures can diverge substantially under some circumstances, examples of which are given in Box 3.

Box 3. Major Divergences Between Net Lending and the Cash Balance: Some Examples

The following are examples of fiscal operations which might lead to a major divergence between the two measures of the budget balance:

- *Cash payout of a substantial portion of the existing aggregate civil service pension liabilities.* Circumstances under which this might occur include (i) a significant downsizing of the civil service involving substantial payouts of pension and other leave entitlements to departing civil servants; and (ii) the privatization of civil service pension schemes (i.e., a move from government-run pension schemes for civil servants to a system where the government pays money into privately-operated defined-contribution schemes). These payouts will have no impact on net lending if the cash payout equals the actuarial value of the liability paid out. They will, however, result in a major one-off "deterioration" in the cash balance.

- *A major shift in the timing of tax payments.* If, say, the basis of collection of a major tax is shifted from one of settlement-after-the-end-of-the-financial-year (in which revenue attributable to year t will be collected in year $t+1$) to pay-as-you-go, net lending will be unaffected, but there will be a major one-off impact on the cash balance (it will increase by x in year t and then suffer an equivalent reduction of $-x$ in year $t+1$).

- *A major increase in the use of financial leases or PPPs to replace conventional government capital expenditure.* This will "improve," in the short run, the cash balance, but will only change net lending if and to the extent that the cost of financing capital expenditure by unconventional means differs from the cost of conventional financing.

- *Netting off in the cash balance of privatization receipts and other transfers from the public corporations sector.* In addition to privatization transactions, operations such as exceptional dividends from public corporations will have major effects on the cash balance while leaving net lending unchanged.

A small but growing number of countries are using these accrual fiscal aggregates as the key policy variables for fiscal sustainability purposes. The most important example of the use of net lending as the headline budget balance measure is the European Union, which uses it for the purposes of the Stability and Growth Pact deficit limit (3 percent of GDP). In the United Kingdom, so-called *public sector net borrowing* (PSNB), which is a key fiscal aggregate, is net lending by another name (Government Statistical Service, 1999). Less common is the use of net financial debt as the headline debt measure. Canada appears to be the one country at present which uses net financial debt to set debt reduction targets (Department of Finance Canada, 2006: 7; 2007: 18). (One possible reason why the use of the broader debt measure remains rare is political/symbolic: net financial debt is generally a larger number than

conventional net debt, providing a political disincentive for governments—even those which have move most fiscal and budgetary measures onto an accrual basis—to use it as the headline debt measure.)

Net lending and net financial debt are not, of course, perfect measures, and—just as with cash budget balance measures—governments may find that various adjustments to these measures improve their policy relevance. Indeed, net lending suffers from what might be regarded as the defect that it nets off receipts from the sales of general government assets. It may be appropriate to adjust for this, so as to treat such receipts as financing rather than revenue, in the way in which the GFS measure *overall fiscal balance* does (Box 4). For simplicity, references in this paper to the use of net lending as the primary budget balance measure for fiscal policy purposes will be taken to refer also to variants of the net lending measure, such as the overall fiscal balance.

Box 4. Netting off General Government Asset Sales Receipts?

While net lending has the considerable advantage relative to the cash balance that it treats proceeds from the privatization of government enterprises and similar operations as financing transactions for the general government sector, it nevertheless has the disadvantage that it treats the proceeds from the sale of *general government* nonfinancial assets as negative expenditure (analytically equivalent to revenue). An example of the type of general government nonfinancial asset the sale proceeds from which would be treated in this manner is the surplus land holdings of ministries such as defense and education. Experience in a number of countries shows that receipts from the sale of surplus general government nonfinancial assets can be quite significant, and may be sustained over a number of years.

The netting off of such receipts from net lending is nevertheless a minor defect by comparison with the netting off from the unadjusted cash budget balance of receipts from transfers such as privatization receipts from the public enterprise sector—a practice which has led to many episodes of the large-scale manipulation of cash budget balance measures. Nevertheless, from a fiscal policy perspective, financing expenditure via such asset sales both adversely affects fiscal sustainability and injects income into the economy, with potential impacts on aggregate demand.

In respect to fiscal sustainability, while the balance sheet value of a nonfinancial asset cannot in general be assumed to measure the asset's contribution to fiscal sustainability (see below), this is not true in respect to *surplus* assets (assets which are not in use and which are available for disposal), the balance sheet value of which should be their expected sale price (net recoverable value). The sale of the asset therefore has an impact on sustainability precisely equivalent to a reduction in net financial worth to the value of the asset's market price. Raising money by the sale of this type of asset is therefore analytically the same as borrowing the money concerned, rather than raising revenue. Moreover, the macroeconomic impact should be the same as borrowing, as the private sector agents who purchase these assets do not experience a loss of wealth as a result of their transaction, but rather exchange one asset (money) for another (the nonfinancial asset which they purchase).

It may therefore be desirable for fiscal policy purposes to adjust net lending by adding back general government nonfinancial asset sales receipts, so as to treat such receipts as financing. This is what, amongst other things, the GFS *overall fiscal balance* (IMF 2001: 46) does. Transparency considerations arguably reinforce this point—note the recommendation of the IMF's *Code of Fiscal Transparency* that "the proceeds from asset sales be treated as financing rather than revenue, negative capital expenditure, or negative net lending." (IMF, 2007: 99).

V. Net Worth, the Operating Balance, and Fiscal Sustainability

What about net worth? It is, of course, the most familiar and comprehensive accrual stock aggregate. So, would it be possible to shift the focus of fiscal sustainability analysis from debt measures to net worth? It is suggested here that the answer to this question is "no"—in other words, that net worth and its flow counterpart, the net operating balance, are much less meaningful aggregate for fiscal sustainability purposes than is a net debt measure.

On the asset side, net worth counts not only financial assets but also nonfinancial assets, of which the most important are fixed assets like roads, bridges, and public buildings. The relevance of financial assets to sustainability analysis is clear, because in general financial assets can be readily used to repay debt, and are valued at what they would realize if used to do so. This makes it reasonable to subtract them from debt when assessing sustainability. Hence the relevance of the *net* debt measure, whether defined in cash accounting terms (debt obligations minus cash balances) or in terms of the broader accrual concept of net financial debt (liabilities minus financial assets). By contrast, the balance sheet valuations of fixed assets have no necessary relationship to what they might realize if sold, and selling these assets is in many cases politically impracticable. To treat the balance sheet valuation of fixed assets as an offset against debt/financial liabilities for the purposes of fiscal sustainability analysis is therefore inappropriate.

Some appear to think that the application of the market value principle (or the closely related fair value principle) for the valuation of all assets and liabilities ensures that balance sheets valuations of government nonfinancial assets are relevant measures for fiscal sustainability purposes. But this is not the case. Consider, by way of example, a (non-tollway) bridge. Like many such government assets, such a bridge would typically be valued in government balance sheet on a "written-down replacement cost" basis—roughly speaking, the original construction cost in real terms reduced by a measure of depreciation and adjusted for maintenance. Because such an asset would have no ready market, and is not income-earning, this valuation methodology would be considered consistent with the market value principle (IMF, 2001: 114) and also with the fair value principle.[23] One struggles, however, to see the relevance of written-down replacement cost for fiscal sustainability. Any notion that one could treat such assets valuations as in effect cancelling an equivalent quantity of debt would seem quite peculiar.

[23] In the fair value framework, it would often be regarded as an appropriate application of what is referred to as the "cost approach" to valuation (FASB, 2006: §18.c).

Box 5. Net Worth as a Fiscal Sustainability Measure?

The value of nonfinancial assets in a general government balance sheet in general provides little information about the government's capacity to meet it financial obligations, because

- The only unambiguously relevant measures of nonfinancial asset value from a fiscal sustainability point of view are those which reflect either the future income flows which the asset will yield or the asset's potential sale price.
- Most general government fixed assets are non-income earning (by contrast to physical assets held by for-profit corporations in the private or public enterprise sectors). This means that valuation on the basis of future income flows (sometimes referred to as the "income approach" to valuation) is not relevant.
- Although valuation on the basis of potential sale price—what is sometimes referred to as "recoverable value"—would for many assets be highly relevant to fiscal sustainability, nonfinancial assets are not, as indicated in the text, generally valued in balance sheets on this basis.
- Many government nonfinancial assets would never be sold, even in an acute fiscal crisis. Many are also highly illiquid. Recoverable value in these cases would not even in principle be relevant to sustainability analysis.
- The only category of nonfinancial asset which is systematically valued in balance sheets on a recoverable value basis is nonfinancial assets which have already been identified as surplus. (Hence the point made in the previous section that it is reasonable to count the values of surplus assets in assessing sustainability.)

For these reasons, the inclusion of nonfinancial assets in net worth makes that measure much less suitable than net financial debt as a fiscal sustainability measure. It is possible for, say, the net worth of a government to "improve" but fiscal sustainability to deteriorate. Similarly, on a cross-sectional basis, two countries with similar economies might have similar net worth/GDP ratios, but completely different fiscal sustainability positions. There is, for example, a vast difference in sustainability terms between two countries both of which have net worth equal to 2 percent of GDP, where Country A has net (financial) debt of 20 percent of GDP and nonfinancial assets of 22 percent of GDP, and Country B has net debt of 150 percent of GDP and nonfinancial assets of 152 percent of GDP.

This is not to say that the stock of nonfinancial assets—including those social assets which provide major services to the community but have little recoverable value—is irrelevant to fiscal sustainability. Clearly, if countries C and D had the same level of net debt, but C had little public infrastructure while country D was very well endowed with such infrastructure, country D would, ceteris paribus, be at lesser risk of being unable to meet its financial obligations. However, this does not mean that it would be appropriate to use balance sheet values to measure the contribution of such nonfinancial asset holdings to fiscal sustainability. What it suggests, rather, is that that it can be useful at times to supplement debt measures with information on nonfinancial asset holdings, and particularly on the recoverable value of certain manifestly saleable nonfinancial assets (e.g., unused land holdings).

Viewing the matter from the flow perspective, the problem with reliance on a deficit target or rule defined in terms of the net operating balance (accrual revenue minus expenses) would have the effect of leaving capital expenditure unconstrained. This would, as pointed out in the earlier discussion of the inadequacy of an accrual budgeting system based on expense control totals alone, fail to meet the needs of fiscal policy in respect to the management of fiscal sustainability.

The one clear fiscal policy role for the net operating balance/net worth arises in countries which are committed to the *golden rule*. The golden rule embodies a traditional conception of intergenerational equity which asserts that taxpayers in each time period should as a group

contribute to financing public expenditure in accordance with the intertemporal allocation of the benefits to which that expenditure gives rise (Musgrave, 1988). In doing so, they may be regarded as "paying their way," without either subsidizing or being subsidized by taxpayers in other time periods. The main implication of this is that it is reasonable to use debt only to finance capital expenditure, with the debt (and interest charges) being repaid over the lives of the assets concerned, in accordance with the intertemporal allocation of the benefits which they generate for the community.[24]

A simple practical formulation of the golden rule is a requirement that the budget be (structurally) balanced in accrual terms. In other words, (accrual) revenues should cover expenses, so that net operating balance is zero. This means that the taxpayers are each year paying for the depreciation and interest arising from capital expenditure, rather than for the capital expenditure itself. Expressed differently, borrowing will essentially only be used to finance net investment (see Robinson, 1998b).

The most notable golden rule regime in recent times has been the United Kingdom, where the rule (currently suspended as a result of the financial crisis) took the form of a requirement that the so-called *surplus on the current budget* (SOCB)[25]—essentially the same as the net operating balance—should not be negative on average over the course of the business cycle.

VI. ACCRUAL AGGREGATE EXPENDITURE

Containing the level of debt requires managing the budget balance, and this obviously requires control and planning of aggregate expenditure and aggregate revenue. If the fiscal policy focus is on cash debt, then the relevant expenditure aggregate is well-defined—cash aggregate expenditure is defined as payments of cash which increase conventional net debt. But what is the appropriate expenditure aggregate if fiscal sustainability is being managed with reference to the broader accrual measure of debt? This is clearly a very important question in an accrual budgeting environment, but one which has received little attention.

It is suggested here that the appropriate expenditure aggregate for the management of fiscal sustainability in an accrual environment is *accrual aggregate expenditure*, defined as transactions which increase government net financial debt. Accrual aggregate expenditure is a new concept proposed in this paper. However, it is close to the GFS concept *total expenditure* (IMF 2001, p. 46), the key difference being that GFS total expenditure treats proceeds from the sale of general government nonfinancial assets as negative expenditure—

[24] As pointed out by, amongst other, the proponents of generational accounting, intergenerational equity cannot in fact be reduced simply to a question of the intertemporal allocation of the costs of capital. Proponents nevertheless argue for the golden rule as a fiscal smoothing device, and as providing at least a better approximation of intergenerational equity than the traditional balanced cash budget principle. Discussion of the merits of these propositions is beyond the scope of this paper.

[25] Defined as the public sector national accounts aggregate current expenditure plus depreciation less receipts. (HM Treasury, 2007: 5).

reflecting the netting off from net lending noted above—whereas accrual aggregate expenditure is a gross expenditure measure which does not. As suggested in Box 4 above, it may not be appropriate for fiscal policy reasons to treat asset sales receipts as negative expenditure.

This is, however, a question of second-order detail, from which it is useful to abstract in the analysis in the remainder of this paper. In what follows, we will therefore assume (unless otherwise expressly stated) that sales of general government nonfinancial assets are zero and that therefore *Net Lending = (Accrual) Revenue – Accrual Aggregate Expenditure*.

Box 6. Accrual Aggregate Expenditure

GFS defines total expenditure as expenses plus the net acquisition of nonfinancial assets (NANFA). Defined this way, *Net lending = Revenue - Total Expenditure*. To see this, note that net lending is defined as (1) net acquisition of financial assets minus net incurrence of liabilities or, equivalently, as (2) net operating balance minus NANFA. From the second definition we have:

Net lending = (Revenue – Expenses) – NANFA = Revenue – (Expenses + NANFA)
= Revenue – Total Expenditure

To understand how total expenditure relates to accrual aggregate expenditure and to the accumulation of debt, note that debt can arise from two types of outlays: expenses and capital outlays.

To measure debt arising from capital outlays, note that NANFA understates the impact on net financial debt of nonfinancial asset acquisition (whether fixed assets and increases in inventories) inasmuch as it nets off both depreciation and proceeds from sale of (general government) nonfinancial assets. The change in net financial debt arising from capital outlays can be measured by what we call here *acquisition of nonfinancial assets* (ANFA), defined as NANFA plus depreciation plus proceeds from sale of nonfinancial assets. In respect to debt arising from expenses, note that depreciation does not give rise to net lending, whereas other GFS expenses do. Hence expenses minus depreciation is a measure of the impact on debt from expenses transactions.

From this it follows that the impact of all outlays upon debt is measured by:

Accrual aggregate expenditure = (Expenses – Depreciation) + Acquisition of nonfinancial assets

By contrast, from the definition of total expenditure above, it will be seen that :

Total expenditure = (Expenses – Depreciation) + Acquisition of nonfinancial assets
– Proceeds from sale of nonfinancial assets.
= Accrual aggregate expenditure - Proceeds from sale of nonfinancial assets

Moreover,

Net lending = Revenue – Accrual Aggregate Expenditure + Proceeds from sales of nonfinancial assets.

Hence, the point made in the text that GFS Total Expenditure treats asset sales proceeds as negative expenditure, whereas the proposed accrual aggregate expenditure measure does not.[1]

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[1] Note that both GFS Total Expenditure and the proposed Accrual Aggregate Expenditure differ from the accrual expenditure aggregate developed in the U.K.—so-called Total Managed Expenditure (TME). TME is defined as current expenditure (i.e., expenses) + net investment + depreciation (HM Treasury, 2007b: 190), or (expressed in the language above) expenses plus acquisition of nonfinancial assets. This measure would appear to exceed the contribution of outlays to net lending by the amount of depreciation.

VII. Fiscal Policy for Macroeconomic Stabilization

It has been argued that, for the purposes of fiscal sustainability objectives, it is better to specify key fiscal policy aggregates in accrual terms—net lending, net financial debt, or variants thereof—than in cash terms. What about fiscal stabilization policy? Is it true that cash measures of aggregate expenditure, revenue, and deficits are more useful than accrual measures for assessing the macroeconomic stance of fiscal policy—i.e. the likely impact of fiscal policy on aggregate demand?

With growing support amongst economists for the use of fiscal stabilization policy, this question seems particularly relevant. Until a couple of years ago, majority opinion amongst economists favored permitting the automatic stabilizers to operate, but remained skeptical about the efficacy of discretionary fiscal policy (e.g., Eichenbaum, 1997; Feldstein, 2002; Taylor, 2000). More recently, the consensus started to move towards the view that discretionary policy can be effective and potentially more timely than monetary policy in counteracting the harm of economic downturn (see Boskin in Federal Reserve Bank of San Francisco, 2008; Elmendorf and Furman, 2008). Support for discretionary fiscal policy has manifestly being greatly strengthened by the widespread perception of the need for a bold policy response to the current severe financial crisis—and the awareness of the particularly severe limits of monetary policy as an instrument of stimulus under current financial market conditions.

In respect to the automatic stabilizers, the choice between cash and accrual measures would not appear to matter much. Allowing the automatic stabilizers to operate means, of course, accepting any increases in the deficit which result automatically from the impact of an economic downswing on tax revenues and on cyclically-sensitive expenditure such as unemployment benefits. A policy of allowing the unhindered operation of the automatic stabilizers makes it relevant to measure the "cyclical" component of the deficit, and to distinguish this from the underlying "structural" deficit. However, cyclically-induced changes in these expenditure and revenue items are very similar whether measured in cash or accrual terms, because the accounting basis has little impact on the measurement of transfer payments, and the widespread use of pay-as-you-go taxation arrangements means the same is true for the main relevant taxes (e.g., personal income tax).

To this extent at least, one can endorse the British decision, in the context of their move to an accrual framework, to use "the change in PSNB [i.e., net lending] ... to assess the overall impact of fiscal policy on aggregate demand"(HM Treasury, 2007b: 8).

By contrast, in respect to discretionary fiscal measures the choice between cash and accrual measures of expenditure may well matter. The question here is whether, in considering particular options for increasing expenditure (e.g., increasing unemployment benefits, boosting infrastructure spending, etc.) or cutting taxes, it is more useful to have regard to the cash expenditure involved or to their cost measured in accrual terms. There are reasons to believe that (Box 7), depending upon the type of economic agent directly affected by the specific discretionary measure under consideration, cash measures may in some cases provide a better indication of the demand impact of the discretionary fiscal initiative—

Box 7. Accrual vs. Cash Measures of the Cost of Discretionary Fiscal Measures

Accrual aggregate expenditure was defined as the increase in government net financial debt arising from transactions. Any increase in government net financial debt means an equivalent growth in private sector net financial worth. It follows that accrual expenditure measures the income—in the proper economic sense of increases of wealth—injected by government into the private sector. Conversely, accrual revenue measures the withdrawal of income. Cash expenditure and revenue, by contrast, measure payments or withdrawals of cash which, insofar as they differ in timing from the expenditure and revenue measured in accrual terms do not represent income but, rather, the bringing forward or postponement of the *payment* of income acquired in another time period. All the examples in Box 3 of transactions which can lead to significant differences between the cash budget balance and net lending are cases where the cash payment or withdrawal does not actually represent a change in private sector incomes. For example, the bringing forward (or deferral) in the required timing of corporate tax payments does not change corporate profits—corporations account on an accrual basis and record tax as an expense in the year the tax liability is incurred.

The question then is why the "mere" timing of the receipt of cash would make a difference to the behavior of economic agents. There are two obvious reasons why this might be the case. One is misperception—that is, an agent may misperceive a cash payment as the receipt of income even when this is not the case. For example, the civil servant who receives a cash payout of pension entitlements sees this as a windfall gain—and proceeds to spend some of it on that basis—not understanding that all that has happened is that income which was already theirs has been made available now.

The other reason why the timing of cash may make a difference is "liquidity constraints" (construed broadly not only to the ability of the economic to access credit, but also to the differences in borrowing and lending rates available to the agent). That is, an agent may receive cash from the government, may understand that it is not income, but may nevertheless spend some of it because there is some spending he or she would like to undertake, but has been unable to do so because of an inability to access sufficient credit or obtain that credit on acceptable terms. For example, suppose a civil servant accepts the cash payout of accumulated pension entitlements. He or she might spend a portion of the payout on, say, a new car or an overseas holiday not because he/she misconstrues it as income, but because it allows borrowing against the future much more cheaply and easily that by taking out a loan to finance the holiday.

It therefore seems reasonable to assume that the impact of specific fiscal measures can depend on the timing of the cash transactions where the measures impact on economic agents (particularly in the household sector) who are either subject to liquidity constraints or who misperceive cash payments as the receipt of income. In respect to such agents, therefore, the cash cost of the fiscal measure concerned may offer a better indication of its likely impact on demand. Conversely, however, the demand impact of fiscal measures which directly impact on economic agents (particularly in the corporate sector) who suffer neither from such misperceptions nor (normally) from such credit constraints may be better captured by an accrual measure of their cost, and the cash cost may—where it differs from the accrual measure—be misleading.

essentially because the timing of the injection of cash can be macroeconomically important even when it does not correspond to an injection of income. However, in other cases the cash measure may be quite misleading, and the accrual measure much more informative.

This is not, however, a reason for preferring cash to accrual fiscal *aggregates*, because discretionary fiscal policy is formulated by reference not to the aggregates but to the probable demand impacts of specific measures. In other words, the conduct of discretionary fiscal policy is not a matter of simply deciding to boost spending or cut taxes by some quantum. Rather, it is about selecting specific expenditure or tax measures which experience suggests will result in substantial increases in private sector spending. Thus, the active political and

public debate in the U.S. on the provision of a discretionary fiscal boost to the economy in the early stages of the subprime crisis in 2008 focused in large measure on issues such as whether accelerated depreciation provisions for corporations could have the same impact as tax relief or targeted assistance to low income people with a particularly high propensity to consume. Only in the simplest of introductory textbooks is the impact of discretionary policy assessed by taking the cost of the initiative and multiplying it by some standard expenditure or tax multiplier.

Governments which manage fiscal policy with respect to cash fiscal aggregates need to bear in mind that "stimulatory" measures which simply change the timing of cash transactions between government and agents who are not liquidity-constrained will probably have no impact on demand. Similarly, governments managing to accrual fiscal aggregates will need to bear in mind that the increasing accrual aggregate expenditure in ways which substantially defer the associated cash payments will likely also have little impact.

This suggests that there is no reason for a government which has decided to employ accrual fiscal aggregates for the management of fiscal sustainability to feel that it should use cash aggregates for stabilization policy. There are clear advantages in keeping it simple by using the same fiscal aggregates for both purposes.

VIII. Designing an Accrual Budgeting System to Support Accrual Fiscal Targets

The proposition that fiscal policy can be formulated in terms of accrual fiscal aggregates—in particular, in terms of net lending and net financial debt (or variants thereof)—seems to immediately broaden the relevance of accrual budgeting beyond the microeconomic benefits which are usually emphasized, because accrual budgeting and a fiscal policy targeted on accrual fiscal aggregates would seem to complement one another. Despite this, the specification of accrual control totals to ensure that fiscal policy objectives are met is not an obvious matter.

How then does one design an accrual budgeting system to tailor it to the management of net lending and, through that, net financial debt? The starting point here must be a recognition that, as discussed above, to exercise direct control over net lending, the budgeting system needs to control accrual aggregate expenditure, defined as transactions which increase net financial debt. One can then distinguish between two categories of accrual expenditure (again, these are new concepts), as follows:

- *Accrual capital expenditure:* Transactions which increase net financial debt in order to acquire nonfinancial assets. This concept of capital expenditure differs from cash capital expenditure in that it includes not only *payments* for the acquisition of nonfinancial assets (i.e., cash capital expenditure), but also the acquisition of

nonfinancial assets via deferred payment arrangements (e.g., financial leases) or by any other means that creates a liability for government.[26] [27]

- *Accrual current expenditure*: Transactions which, ceteris paribus, increase net financial debt for current purposes (i.e., to finance services or transfers rather than to acquire nonfinancial assets). This concept differs from cash current expenditure in that it includes consumption which is not immediately paid for, but which is financed by the accumulation of liabilities which have to be paid in the future.

Thus:

Accrual aggregate expenditure = Accrual current expenditure + Accrual capital expenditure

This means that the task of controlling net lending would be most directly accomplished by an accrual budgeting system which sets control totals for these two measures.

On the capital side, this is unproblematic. If it is accepted that—as was suggested earlier—it is best to build an explicit capital expenditure control totals into the accrual budgeting system, then any government wishing to control net lending should define that control total in terms of accrual capital expenditure rather than cash capital expenditure. This is, unsurprisingly, what New Zealand and the United Kingdom do. (Note, however, that these control totals are for *net* rather than *gross* capital expenditure. What this means and some of the issues it raises are discussed in the following box).

It is on the current side that the matter gets a little more complicated. If a control total were to be imposed over accrual current expenditure, how would this relate—if at all—to the expenses control total concept which is at the heart of an accrual budgeting system? To answer this question, consider the relation between expenses and accrual current expenditure. Expenses are a measure of the costs of government services and transfers, irrespective of when those costs are paid. Some expenses need to be paid either in the year they are incurred or in subsequent years, and it is these expenses only which increase net financial debt. It is these "debt inducing" expenses which represent accrual current expenditure. Not all expenses are, however, accrual current expenditure, because some expenses do not involve present or future payments—depreciation being the most important example, and the capital charge

[26] In principle at least, it would also cover not only fixed assets, but also increases in inventories. It is also necessary under an accrual budgeting regime to decide which control total (e.g., the expenses or the capital expenditure control total) prepayments should be counted against.

[27] We might also define *accrual net capital expenditure* as accrual capital expenditure minus (general government) nonfinancial assets asset sales receipts. This gives us *(GFS) total expenditure = Accrual current expenditure + Accrual net capital expenditure*.

Box 8. Net Capital Appropriations

The capital expenditure control totals which operate in New Zealand and the United Kingdom—the former via parliamentary appropriation and the later by Treasury regulation—are based on *net* (accrual) capital expenditure. That is, they are net of the proceeds of nonfinancial asset sales (NZ Treasury, 2005: 22; HM Treasury, 2007a: chapter 6). This is intended to provide a stronger incentive to ministries to identify and sell surplus assets.

The issue which net appropriations raises for fiscal policy is that financing new capital expenditure from the proceeds of the sale of nonfinancial assets will increase accrual aggregate expenditure. (This is the same issue discussed in the text below in relation to the virement from the depreciation component of an expenses appropriation to the accrual current expenditure component.) Expressed differently, there would be a potential fiscal policy problem if spending ministries were given untrammeled freedom to sell their nonfinancial assets and use the proceeds to increase their new capital expenditure. Such additional capital expenditure would impact on aggregate demand. It would also potentially impact on fiscal sustainability insofar as one would be replacing surplus assets with a balance sheet value equal to what they can be sold for (their "net recoverable value") with new assets which may not necessarily have a significant recoverable value (see on this Box 4 above).

In practice, however, such a problem does not arise in either New Zealand or the United Kingdom because of constraints on the freedom of ministries to sell large assets at their own discretion. Moreover, asset sales generally take significant time to carry out, and the finance ministry is able to estimate the relevant receipts in making budget decisions.

One could arguably retain the incentives benefits of this approach while improving the transparency of the budgeting process by setting an explicit dollar limit in each year's annual budget to the amount of capital expenditure each ministry can finance via asset sales.

(where it exists) another[28]—and therefore do not increase net financial debt. Summing up, accrual current expenditure is expenses which require payment in the present or future years, and is equal to total expenses minus depreciation and similar "non-debt inducing" expenses.

Because accrual current expenditure is a sub-set of expenses, it might be thought that the imposition of an expenses control total would be sufficient (in conjunction with the capital control total) to directly control net lending. However, a potential problem would still remain if, within the limits imposed by expenses control totals, spending ministries were able to shift ("vire") money from the non-debt inducing expenses in order to increase debt-inducing expenses. If that were the case, then it might be necessary to also impose a control total over accrual current expenditure.

This is, in fact, precisely the conclusion which the British government reached after some experience with accrual budgeting. When accrual budgeting was first introduced in the U.K., there was only a control total for expenses. Subsequently, however, a separate control total

[28] Provisions are another. Provisions are a non-cash expenses under GAAP accounting, whereas the capital charge is (as noted at the outset of this paper) not an accounting expense proper. Under GFS/ESA, neither provisions nor, obviously, the capital charge are recognized as expenses.

was set for the accrual current expenditure component of total expenses—what the British call *near-cash expenses* (as opposed to what they call *non-cash* expenses, which are expenses such as depreciation which do not contribute to net lending). The British had found that spending ministries were able to reallocate significant amounts within their total expenses budgets from non-cash to near-cash expenses, on a scale that could potentially put real pressure on the government's debt limit. The spending ministries accomplished this by a range of methods, including accounting revisions which significantly reduced their depreciation and capital charges (e.g., by substantially reducing the book value of specific assets or by lengthening their estimated lifespans), and by the sale of capital assets. It was the "need to protect the fiscal position" which led to the imposition of the additional control total on near-cash expenses as a means of "preventing funds from being switched from non-cash to near-cash spending" (HM Treasury, 2008: 17).

Perhaps as a result of the U.K.'s choice of the term "near cash," their imposition of the control total over accrual current expenditure has been misinterpreted as the reinstitution of cash budgeting. Thus, the U.S. Government Accountability Office (2007: 27) asserts that in Britain the "treasury has imposed limits on departmental cash spending because spending affects the country's cash-based fiscal position." It is, however, wrong to characterize the near-cash control total as a control on cash spending.[29] It is equally wrong to describe British fiscal policy as being targeted at cash fiscal aggregates, given that the key budget balance measure is net lending rather than the cash budget balance. (It is, however, true that the U.K. continues to use a cash debt measure,[30] and that this raises an issue of consistency between flow and stock fiscal aggregates.)

This analysis suggests, then, that the most direct manner to target net lending under an accrual budgeting system is to accompany the capital expenditure control total with a control total over accrual current expenditure (in British terminology, near-cash expenses). The latter could take the form of a sub-control total within the expenses control total given to each ministry—which is essentially the U.K. system.[31]

The problem with this approach is that it directly interferes, in an important respect, with the microeconomic advantages of accrual budgeting. As mentioned at the outset of this paper, part of the rationale for the inclusion of depreciation in the expenses control total is to give

[29] It is clear from the context that the GAO was referring to the near-cash control total. If, however, it had been referring to the parliamentary cash appropriation, its claim would still be erroneous. See the text below on the role of the cash appropriation.

[30] As does the Stability and Growth Pact, the debt limit of which is specified in terms of gross cash debt, which is inconsistent with the use of net lending for the budget deficit limit. The definition of the SGP debt limit may however, only be modified by changing the Maastricht treaty, whereas the budget deficit definition was able to be changed by agreement.

[31] In practice, it is a little more complex than this, because some virement from non-cash to near-cash expenses is permitted, subject to case-by-case approval.

spending ministries an incentive to identify and sell surplus assets, because in doing so they reduce their depreciation charge and increase their capacity to spend on other expenses.

In dealing with this conflict between microeconomic and macroeconomic considerations, the other possibility is to dispense with any explicit control total on accrual current expenditure, and instead impose other limits on the scope to vire funds from non-cash to near-cash expenses so as to prevent such virement on a scale which could threaten debt limits. The ministry of finance could, for example, impose quantitative limits on the magnitude of such virements without central approval, and could accompany this with other measures such as banning virement arising solely from accounting write-downs of the asset value.

The British have been wrestling further with this problem and in late-2008 announced their intention to abolish the "near-cash" limits. However, in foreshadowing this, they indicated—without being specific—that "different controls will need to be put in place to protect the fiscal position ... with some arrangements specific to particular departments" (HM Treasury, 2008: 17).

This issue has, it should be noted, an implication for the definition of accrual budgeting. It would be quite feasible to have an accrual budgeting system in which there is a control total on accrual current expenditure (near-cash) component of expenses, but no control total on expenses. This is an additional reason for defining accrual budgeting in terms of the use of accrual concepts to specify control totals, rather than as a budgeting system based on expenses control totals per se.

IX. Targeting Cash Fiscal Aggregates under Accrual Budgeting

Accrual budgeting and accrual fiscal aggregates may be a natural fit, but what about a government which, having adopted accrual budgeting, determines that it wishes to continue to base fiscal policy on cash fiscal aggregates—in particular, the cash budget balance, conventionally-defined debt, or variants thereof? Is this something which an accrual budgeting system can deliver?

If the fiscal policy focus is upon cash aggregates, the budgeting system must be capable of delivering sufficient control over aggregate cash expenditure. But if control totals are defined in accrual rather than cash terms, the center is no longer imposing quantitative limits on the annual payments made by each spending ministry. At first glance, this would seem to make it impossible to target cash budget outcomes.

In fact, however, the position is not this bad. Although direct control over cash outcomes is relinquished under an accrual budgeting system, the aggregate cash outcome will nevertheless remain reasonably predictable. It is therefore possible to adopt an accrual

budgeting system while continuing to pursue cash fiscal targets. This is in fact what Australia has done.[32] More generally, it is not necessary that the accounting basis of the budget be the same as the accounting basis of the key fiscal aggregates.[33]

The reason that it is possible to continue targeting the cash budget balance under an accrual budgeting system for this is that the net lending and the cash balance can normally be expected to track one another reasonably predictably. The key sources of large divergences between the two will be either significant changes in the required timing of tax payments, or actions which result in a major change in the stock of non debt liabilities (Box 9), examples of which are:

- Cash payout of a substantial portion of the existing aggregate civil service pension liabilities: e.g., arising from major downsizing of civil service, or from privatization of a civil service pension scheme; or

- Pay-off of a large stock of arrears to suppliers.

In general, these types of actions are under the control of the government and finance ministry, rather than under the control of spending ministries. (For example, even if line ministries enjoy considerable managerial freedom over hiring and firing matters, any civil service downsizing across the whole of government could be initiated only by the center.)[34] From this it follows that the center should be able to project with reasonable accuracy the aggregate cash balance which will result from the execution of any given accrual budgets.[35]

X. Controlling Budget Execution under Accrual Budgeting

The analysis to this point has made it clear that there is no technical difficulty in defining accrual control totals suitable for supporting the targeting of appropriate fiscal aggregates. If these control totals are then properly enforced during budget execution, accrual budgeting will not cause difficulties for the conduct of sound fiscal policy.

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[32] There was a brief period after the move to accrual budgeting when the government preferred net lending (which it referred to as the "fiscal balance") as the headline budget balance. However—for reasons which are extraneous to the present paper—the fiscal policy focus quickly reverted to the (adjusted) cash budget balance.

[33] Note here that the European Union's key deficit measures are defined in accrual terms (net lending), while the great majority of EU countries have cash budgeting systems.

[34] It is true that under an accrual budgeting system spending ministries could in principle significantly influence the aggregate cash balance if they were to engage in large scale across-the-board "leading or lagging" of payments (deliberate early or late payment of liabilities). However, under an accrual budgeting regime, they have no incentives to do so.

[35] Setting aside, of course, the impact of uncertainty in exogenous factors such as the state of the economy.

Box 9. Net Lending vs. the Cash Balance

The difference between net lending and the cash budget balance comprises two elements: (1) the difference between accrual aggregate expenditure (AAE) and cash aggregate expenditure (CAE); and (2) the difference between accrual revenue and cash revenue.

We can therefore say that:

AAE requiring cash payments = AAE – Noncash AAE = CA – Payments of liabilities from previous years

Where "noncash accrual aggregate expenditure" means those elements of accrual aggregate expenditure which are not paid for in the financial year concerned, and which therefore results in a liability will need to be paid in future years (e.g., unpaid accounts for supplies received and used this year; increased pension entitlements of serving civil servants; the present value of financial lease liabilities).

This gives us, approximately speaking:

$AAE = CAE - \Delta Non\ Debt\ Liabilities$[1/]

What this makes clear is that large differences between accrual aggregate expenditure and cash aggregate expenditure must arise from actions which substantially change the stock of non-debt liabilities.

On the revenue side, an example of the type of action which would lead a major divergence between accrual revenue and cash revenue is a shift from the pay-as-you-go basis for income tax to settlement at the end of the financial year (or vice versa).

The abstracts from a number of other potential sources of difference between cash and accrual measures, such as differential treatment of transactions between general government and public enterprise sectors.

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1/ To be more precise, this refers to the change in non-debt liabilities *arising from transactions*—i.e., excluding valuation effects (which are "other economic flows" in the GFS framework).

However, before concluding that accrual budgeting presents no difficulties for fiscal policy, it is necessary to consider its implications for central control of budget execution. This is because, under accrual budgeting, the ministry of finance's task of policing budget execution—i.e., preventing agencies from breaching their budgets—becomes more difficult in a way which could be problematic in some countries.

Under cash budgeting, the cash expenditure control totals are the basis for one of the most powerful instruments of financial discipline—namely, the control by the ministry of finance of spending ministry access to cash. Cash has to be actually released by the ministry of finance in order for payments to be made, and the budget control totals serve as clear quantitative limits on how much cash will be released. This control needs to be backed with appropriate disciplines to prevent excessive commitments being entered into (and, thereby, to limit the accumulation of payment arrears), but is nevertheless a powerful one.

In an accrual system, there is no such cash limit. In giving spending ministries control totals expressed in accrual terms, the government is delegating to spending ministries significant discretion about the timing of the cash payments associated with those expenses. Naturally, the budget preparation process each year under an accrual budgeting system will include the projection of cash requirements for each ministry and for government as a whole. However, a projection of the anticipated cash requirements of a particular spending ministry is not the same as a cash limit for the coming year. The ministry's actual cash requirements for the execution of its accrual budget can easily change during the year. Indeed, the greater the managerial freedom accorded to ministries—e.g., to change the input mix or choose between outsourcing and internal supply—the greater the potential variability in their cash requirements. It would therefore not be appropriate to turn the budget projections of ministry cash requirements into cash limits for the year. To do that would be to revert to cash budgeting, and would undermine the managerial flexibility rationale for accrual budgeting. The presence of dual accrual and cash limits would also make budgeting intolerably complicated for line ministries.

Superficially, the British budgeting system looks like one in which both cash and accrual control totals are imposed, because parliament sets appropriations for both the expenses incurred (the "net resource requirement") and the cash payments to be made ("the net cash requirement") by each ministry. However, superficial appearances are in this case deceptive. In practice, if the execution of ministry expenses budgets increases their cash requirements above the level authorized by parliament, the net cash requirement is changed via supplementary parliamentary estimates. The truly binding control totals in the U.K. system are those for expenses, accrual capital expenditure and (at time of writing) the near-cash component of expenses.[36] The British system should therefore be considered a fully accrual budgeting system, and not a hybrid accrual/cash system.

Spending ministry compliance with accrual budget limits cannot therefore be monitored (other than very approximately) in terms of their utilization of cash. Spending ministries use up their accrual budgets by incurring expenses and liabilities, and these show up in their accounts rather than in their use of cash. In policing the execution of an accrual budget, the ministry of finance must rely primarily on the monitoring of ministry accounts. Central financial control therefore relies primarily upon *ex post* monitoring and sanctions, whereas under cash budgeting ex ante control through the release of cash is the primary instrument. This makes the degree of spending ministry respect for budget limits, the level of accounting competence in the spending ministries, and the quality and timeliness of their within-year financial reporting, extremely important.

Can the ministry of finance control over the release of cash nevertheless play some supporting role in policing budget execution? To answer this question, it is useful to consider a little more closely the implications of accrual budgeting for the release of cash to spending ministries. As background, it helps here to think of accrual budgets as constituting a type of

[36] There are, of course, additional elements of the control total system which are not relevant to the subject matter of this paper, such as the distinction between DEL and AME.

bank account—a cash drawing facility at the ministry of finance—which the spending ministry can draw on to make payments arising from expenses (as well as from capital expenditure liabilities if there is an accrual capital expenditure control total). Suppose that a spending ministry receives in year *t* an expenses budget of $y million, of which $z is cordoned off for depreciation and other "non-cash" expenses leaving $x million to cover all expenses which require payment in the current or future years (i.e., to cover accrual current expenditure). The $x million is then like an amount of cash placed in the ministry's notional bank account upon which it can draw for the purpose of making payments in year *t and in subsequent years* arising from expenses incurred in year *t*. This means that after the ministry has drawn from the $x million in year *t* what it requires to pay those year *t* expenses which require payment that year, what remains needs to be sufficient to meet all payments it will have to make in future years arising from expenses incurred in year *t* but not paid in that year. Expressed differently, the ministry always "save" enough to meet its liabilities. At any point of time, it should therefore have in its notional bank account "savings" from previous years' (i.e., years *t-1, t-2* ...) expense appropriations sufficient to permit it to pay liabilities inherited from those years when they become due.[37]

The question is then what approach the ministry of finance takes to the release of cash to each spending ministry from its notional bank account. One approach—approximately speaking, the Australian approach—is to say that this is a matter entirely for the spending ministry itself. The spending ministry is not restricted from drawing as much or as little cash as it feels it needs to execute its budget. Accountability for the proper use of these funds is entirely ex post, with sanctions for abuse. For government-wide cash management purposes, the ministry of finance receives projections of cash requirements from spending ministries at regular intervals during year, and manages the cash position accordingly. However, it makes no attempt to approve/control those spending ministry drawings.

The potential danger of this arrangement will be obvious. There is nothing to stop the spending ministry overdrawing on its notional cash bank account and spending cash which it should be reserving to make future payments associated with liabilities which it is incurring. By doing this, it would of course be exceeding its accrual budget. However, the finance ministry would only become aware of this after the horse has bolted. And if the quality of spending ministry financial reporting is poor—or, in the extreme, if the spending ministry manipulates its accounts—it could take some time for the ministry of finance to become aware of what is going on. Particularly in the early days after the shift from a cash to accrual budgeting system, there is also a real danger that the spending ministry might overdraw its cash account as a result of a misunderstanding—viewing cash in its notional bank account as a pool of unused funds it can spend, rather than as money that has to be kept aside to pay liabilities.

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[37] This raises an important transitional issue: when moving from cash to accrual budgeting, it is necessary to give each ministry a drawing facility equal to the liabilities the ministry has accumulated up to the transition date, because the cash needed to meet these liabilities when they become due will not longer be provided via the budgetary control totals. The failure to fully finance transitional liabilities of this type was one of the problems which arose when accrual budgeting was implemented in Australia (Blöndal et al, 2008, 21).

The alternative approach would be for the ministry of finance to release cash only in line with an cash plan which it itself approves. The spending ministry would have to submit to the finance ministry a plan which indicated it cash requirements during the year and justified these by reference to the timing of payments associated with its expenses, liabilities, and nonfinancial acquisition plans. When its cash requirements changed during the year, it would have to submit a revised plan. The ministry of finance would then scrutinize these cash plans and form a view as to whether they were reasonable.

This latter course of action is obviously the safer one. However, it should be borne in mind that the review and approval of spending ministry cash requirements—including variations in those cash requirements during the financial year—is a considerably more complex process than required under cash budgeting. The question which would arise in many countries—particularly low income ones—is whether the skilled human resources and systems required for such a complex task exist. More generally, the task of policing budget execution becomes more complex under an accrual budgeting system, and the scope for spending ministries to exceed their budgets becomes greater.

XI. CONCLUSION

An accrual budgeting system—in which budgetary expenditure authorizations (*control totals*) are formulated in accrual terms—is compatible with good fiscal policy. However, this is only true if the accrual budgeting system is designed properly. A budgetary system in which each line ministry's resource utilization is limited only by an *expenses control total* (limit on the expenses it incurs) is inadequate for the implementation of good fiscal policy, because such a system is incapable of controlling the level of government debt. In order to limit debt and thereby ensure fiscal sustainability, it is essential also to impose limits on capital expenditure, and the best way of doing this is the traditional way—through explicit capital budgets. It is also necessary to design the accrual budgeting system in such a manner as to prevent line ministries shifting the composition of their expenses in such a way as to increase government debt.

The technical specification of control totals in an effective accrual budgeting system can only be discussed in relation to the specific fiscal policy aggregates which policy-makers aim to manage through the budgeting system.

Accrual fiscal aggregates fit naturally with accrual budgeting. A fiscal policy focused on accrual fiscal aggregates can, moreover, be very effective. More specifically, fiscal policy can be improved by shifting the primary policy focus from the cash budget balance and cash debt to their accrual counterparts—*net lending* and *net financial debt* (or variants thereof). Such a shift of key fiscal policy aggregates is advantageous for the management of fiscal sustainability because the accrual debt measure is a broader measure of indebtedness. Controlling net lending, rather than the cash budget balance, will help to ensure that one contains not only conventional debt, but also quasi-debt such as financial lease commitments and civil service pension liabilities.

Shifting the primary focus of fiscal policy to net lending and net financial debt will not, moreover, cause difficulties for fiscal stabilization policy. Discretionary fiscal policy is not a matter of deciding what quantum of public spending to inject into the economy, but is rather about the careful selection of specific measures which appear most likely to boost aggregate demand. The budgetary impact of automatic stabilizers, on the other hand, will in general be similar whether measured in respect to the cash budget balance or net lending.

The case for the use of accrual measures as key fiscal policy aggregates relates specifically to net financial debt and net lending (or variants therefore)—and not to *net worth* and its flow counterpart, the *net operating balance*. Net worth is not a good indicator of fiscal sustainability. To use it as a sustainability indicator would be, in effect, to assume that increasing the stock of nonfinancial assets has the same impact on sustainability as an equivalent reduction in debt. Although the stock of nonfinancial assets has some bearing on fiscal sustainability, this is not measured by the balance sheets value of these assets. The only clear case for the use of net worth and the net operating balance as key fiscal policy aggregates is in countries which choose to pursue the "golden rule" approach. Even in such countries, however, the crucial importance of ensuring fiscal sustainability means that net financial debt and/or net lending should remain key fiscal policy aggregates.

Although in principle an accrual budgeting system is fully compatible with good fiscal policy, in practice there are considerable risks arising from the complexity of accrual budgeting. Only if the financial management system is sufficiently strong to ensure effective implementation of the accrual control totals can it be said that the adoption of accrual budgeting poses no problem for fiscal discipline. Under an accrual budgeting system, central control of payments or over the release of cash to spending ministries is no longer available as an instrument for central control, and this makes central control of budget execution considerably more demanding than is the case in a cash budgeting system. The ministry of finance's task of policing spending ministries observation of budget limits becomes considerably more complicated, as does the task of cash management. This—in addition to other factors such as additional complexity—makes accrual budgeting inappropriate for many countries.

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