Escalati ng Cost of Service Due to Higher Degrees of Accrual

Cash	Payment of salary and fringe benefi ts	$43,000
Degrees of Accrual	+ short-term payable for benefi ts earned	+1,000
Mild	Expenditure as measure of cost of service	=44,000
	+ long-term payable for pension benefi ts earned	+8,000
Moderate	Expense as measure of cost of service	=52,000
	+ depreciati on expense of equipment used in service delivery	+10,000
Strong	Expense as measure of cost of service	=$62,000

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DEGREES OF ACCRUAL

Basis of accounting refers to the measurement rules that instruct accountants and budget scorekeepers about ways to deal with the effects of an entity's transactions or events. Accountants typically frame the issue in terms of the *timing* of registering the effects of those transactions or events. Accordingly, there are two primary bases of accounting: the *accrual basis* and the *cash basis*. The cash basis records the transactions or events "when cash is received or paid"; the accrual basis recognizes those effects "when the transactions or events place," according to the Governmental Accounting Standards Board (Governmental mental Accounting Standards Board, 1996b, para. 3b). Actually, accrual is not merely a matter of timing; it involves the complex issue of tracing the deli financial effects of budgetary decisions and related actions. Unfortunately, discussions about accrual are often complicated by the different approaches use by budgeting and accounting professionals in interpreting those effects.

Budgeting and Accounting Perspectives

Budget analysts tend to assume a periodic operational perspective while accountants are trained to think about financial position in a double-entry framework. Budget discussions often seem fixated on the effects of decisions on the deficit—the excess of financial resource outflows over inflows during a period. Accountants also deal with such *flow measures,* but they are equally concerned about the balance sheet and the relationship between resources and debts— stock measures—at some points in time, most notably at the end of a fiscal year.

There are several other differences between budget and accounting analyses. First, budgeting is oriented to the future while accounting looks backward. Both time perspectives are necessary because government requires both planning and feedback based on actual performance. Whereas a budget makes promises, financial statements report whether those promises were kept. These roles give rise to the complementary and yet competitive relationship between accounting and budgeting.

Second, budgeting tends to focus on discrete periods while accounting is concerned with the continuous carryover effects from one period to the next. Politicians and the public alike focus on the bottom line of a budget—the annual deficit figure. Under the cash basis, the budget deficit for year t+1 is the projected deficiency of cash receipts to finance the cash outlays:

Equation 1

$$\text{Deficit}_{(t+1)} = \text{Outlays}_{(t+1)} - \text{Receipts}_{(t+1)}$$

To the extent that not all purchases for goods and services were paid for and not all revenues were collected during the year in question, there would be carryovers in the form of payables (a liability) and receivables (an asset,) that would require reporting in the balance sheet at year's end. The issues surrounding the accrual basis turn on the question of what to do with these inter-period effects.

Placing the deficit on an accrual basis would require recognition of the stock measures, that is, payables and receivables, as follows:

Equation 2

$$\text{Deficit}_{(t+1)} = [\text{Outlays}_{(t+1)} + \Delta\text{Payables}_{(t+1)}] \text{ — } [\text{Receipts}_{(t+1)} + \Delta\text{Receivables}_{(t+1)}]$$

The delta in $\Delta\text{Payables}_{(t+1)}$ and in $\Delta\text{Receivables}_{(t+1)}$ refers to change during the ear (t + l). a comparison of the one-period budget model in Equation 1 and Be. accounting model in Equation 2 shows that the carryover effects are implicitly dealt with by accrual accounting but ignored by cash budgeting. To confusion, the term *expenditure* has not been used. The budget literature, implicitly using the cash basis, often equates outlays with expenditures and refers to $\Delta\text{Payables}_{(t+1)}$ as *accrued expenditures.* Accounting, conversely, would regard the whole amount $[\text{Outlays}_{(t+1)} + \Delta\text{Payables}_{(t+1)}]$ as an expenditure by assuming an accrual basis of accounting. On the

revenue side, formally recognizing receivables can give rise to extremely complex conceptual, measurement, and procedural problems.

Besides the cash and accrual bases, there exist also the *budgetary bases* of accounting. One of these bases may be called the *cash plus obligations basis* and the other may be called the *expenditure plus obligations basis.* Both were conceived to gauge the extent to which appropriations have been spent. At this point we need to distinguish between obligations and liabilities. *Obligations* are rooted in appropriations. An *appropriation* is legal authorization to spend— that is, to incur obligations, or legally binding contractual promises, that would immediately or eventually lead to cash outlays (U.S. General Accounting Office, 1993, pp. 61-62). As evidenced by contracts or orders for goods or services, obligations reduce the amount of appropriation available for future spending. Thus, at the end of fiscal year (t + 1):

Equation 3

$$\text{Available Balance of Appropriation}_{(t+1)} = \text{Appropriation}_{(t+1)} - [\text{Outlays}_{(t+1)} + \text{Obligations}_{(t+1)}]$$

This method of budget calculation, however, overlooks the possible existence of obligations that have become liabilities, confirmed by the receipt of goods and services, a matter of considerable interest to accountants. Thus there arises the expenditure-plus-obligations budgetary basis, which would modify Equation 3 as follows:

Equation 4

$$\text{Available Balance of Appropriation}_{(t+1)} = \text{Appropriation}_{(t+1)} - [\text{Outlays}_{(t+1)} + \Delta\text{Payables}_{(t+1)} + \text{Obligations}_{(t+1)}]$$

It is hoped that the sample equations just presented illustrate the point that financial numbers are virtually meaningless unless we know the measurement rules behind them. Often the terminology is not consistent and the rules are ambiguous, particularly to those trained in another specialty. The next section explains the accountant's mind-set.

Accounting Equation

The accountant's view of the world is encapsulated in the *accounting equation:*

Equation 5

$$\text{Assets}_{(t+1)} = \text{Liabilities}_{(t+1)} + \text{Net Assets}_{(t+1)}$$

The accounting equation is the conceptual model used by accounting to analyze transactions. Such an analysis provides numbers that are subsequently recorded and summarized and eventually reported in financial statements. The accounting process need not concern us here. What is important is that Equation 5 states that an entity's economic resources at a point in time—such as the end of period t+1—are either

borrowed or owned by the entity itself. Net assets are variously called the *owner's equity* or *stockholders' equity* in a business, or the *fund balance* in the governmental and nonprofit context.

Alternatively, the accounting equation may be rewritten as follows:

Equation 6

$$\text{Assets}_{(t+1)} - \text{Liabilities}_{(t+1)} = \text{Net Assets}_{(t+1)}$$

This formulation puts the emphasis on *net assets,* or the residual. An entity is solvent if its net assets have a positive number, that is, when its assets exceed its liabilities. In contrast, if liabilities exceed assets, the net assets number is negative. Regardless of the presentation, it is quite obvious that the balance sheet emphasis influences the accounting perspective, so much so that the statement describing the results of operations of a period is sometimes viewed as representing changes in financial position.

At this point we can go no further without resolving the issue of what are assets and liabilities, that is the *measurement focus* of the balance sheet.

Measurement Focus

The measurement focus characterizes how broadly the concepts of assets and liabilities are construed. As explained earlier, the cash basis of accounting measures the results of operations in terms of the receipts and disbursements of cash. The accrual basis, in contrast, adopts a broader view of assets and takes liabilities into account as well. But how broadly?

An entity's *assets* are the economic resources that are capable of providing measurable future benefits. They include resources the entity owns as well as resources over which it has effective operating control, such as capital equipment financed by debt. Benefits are operationalized as future net cash inflows (as in the case of receivables) or as the reduction of future net cash outflows (as in the case of prepayments for services). The "measurable" qualification would rule out the accounting recognition of resources that produce benefits for which accountants have not developed acceptably precise and reliable measures. Furthermore, the transaction or event that establishes the entity's claim or control over the resource should have occurred. This requirement contrasts with the economist's approach of stating asset value in terms of the present value of future benefits.

Accounting policies interpret these basic criteria, resulting in the inclusion of some economic resources as assets and the exclusion of others. This filtering process is called *accounting recognition,* which is analogous to the legal concept of admissible evidence. There is considerable subjectivity in applying the basic recognition criteria. Consider research and development (R&D) as an example. Under the rules of the Financial Accounting Standards Board (FASB), a business cannot regard any of its R&D spending as an asset. But an experimental balance sheet depicting national wealth includes federal R&D spending as an asset (U.S. Office of

Management and Budget, 1996b, p. 27). Similarly, by using the recognition criteria embodied in current generally accepted accounting principles, most accountants would leave investment in human capital, as measured by educational expenditures, off the balance sheet. Nor would they consider projected receipts, tax base, or the power to tax as assets.

After the assets are recognized, they can be classified as either financial resources or nonfinancial resources (See Figure 14.1). A *financial resource* is a claim against others' assets (such as receivables) or services (such as prepaid insurance). The timing of claims further separates financial resources into *current financial resources,* convertible into cash within one year, and *noncurrent financial resources.* Capital assets (such as buildings and equipment) are considered to be *nonfinancial resources* if they are held for future use.

Liabilities require measurable future economic sacrifices in terms of cash outflows or service delivery. Liabilities are usually classified as *current* (due within one year) and *noncurrent* or *long-term* on the basis of their maturity (see Figure 14.1). It is generally easier to identify liabilities because they are usually evidenced by or traced to past events or contracts. That is usually the case in the private sector and in commercial transactions involving government. The line, however, between a government's legal obligations and its social or moral responsibilities is often blurred. In the case of federal social insurance programs, even the government's legal obligations are debatable. Nevertheless, few accountants would take the resource requirements or national needs and discount them to arrive at a liability measure. For accountants, the starting point is a past event, from which they trace forward consequences that will require future costs.

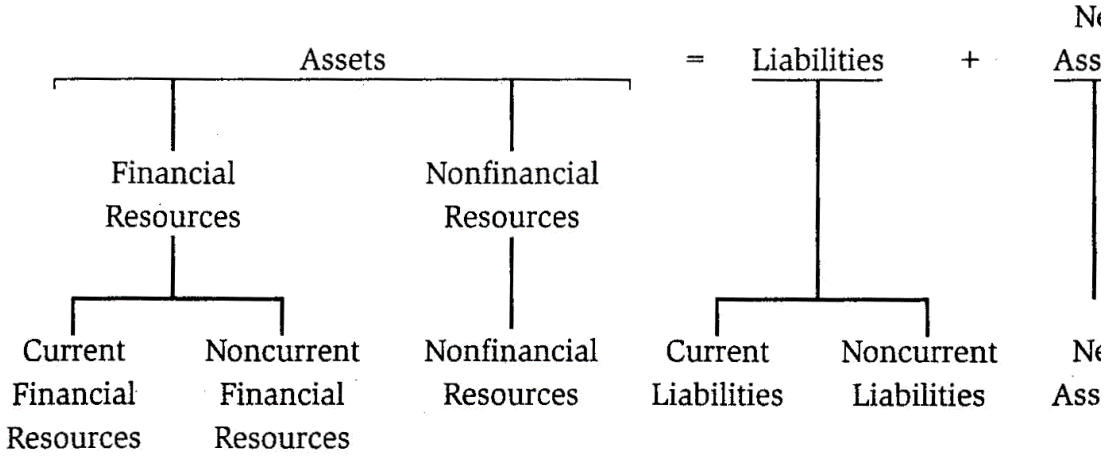

Figure 14.1. Measurement Focus

Degree of Accrual

The degree of accrual is determined by the range of assets and liabilities encompassed in constructing revenue and spending measures. The expansion or contraction of the accounting measurement focus makes accrual an elastic concept.

For example, accrual can be stretched to a breaking point by including educational capital as an asset and moral responsibility as a liability. These are extreme interpretations, however. In practice, judicious adjustments of the scope of assets and liabilities results in more refined measures of accrual.

Currently, government accounting distinguishes between full accrual and modified accrual. Upon closer examination, the modified accrual concept is ambiguous because the modification may be so mild that it resembles modified cash; conversely, the modification can be so extensive that it may amount to almost full accrual. Thus it is proposed that the ambiguous modified accrual basis be separated into two categories: the *weak* form and the *semistrong* form. This will lead to more rigorous definition and precise measures of revenue and spending.

Revenue Recognition

In terms of Equation 6, revenues are gross changes in net assets. The best accounting standards do not permit the use of the cash basis in recognizing revenue. Specifically, borrowed cash results not in revenue but in a liability. This may sound like a truism but bond proceeds are often included in government budgets as a part of the money available to finance operations. This practice runs the risk of blurring the distinction between borrowing and raising revenues through exercising the government's taxing authority or by providing goods and services. These activities often result in increased assets. The cash basis would regard cash receipts as revenues. The weak modified accrual basis would include cash and current financial resources as revenues. This is equivalent to what is called the modified accrual basis in the current government literature, which uses the "measurable and available" criteria. The semistrong modified accrual basis would include noncurrent financial resources as well. The full accrual basis of revenue recognition goes beyond the resource availability concern; it addresses the fundamental political and social relationship between the government and the public.

Accruing revenue may rest on legal grounds: a government can recognize revenues as soon as it acquires a legal claim on the taxpayer's resources. The moment a taxable transaction takes place, the government is entitled to whatever taxes or fees are due to it under existing laws. The second type of full accruals would treat governments like a business: no service, no revenue. In other words, governments would not be allowed to claim credit for revenues until and unless they have earned them. No revenue would be recognized until and unless governments have sold the goods or provided the services; cash received in advance of delivery or sale of goods gives rise to a liability, that is, revenue is deferred. This may sound like a rather radical idea, but it is consistent with the theory behind the current emphasis on service efforts and accomplishment in state and local governments and in the federal government's Government Performance and Results Act of 1993. Needless to say, many theoretical and practical problems remain to be solved if either level of the full accrual basis is to be implemented. The purpose here is to raise the possibilities and

not to deal with implementation issues. Indeed, the terminology does not even exist to describe the various types of accrued revenues.

Spending Measure Recognition

Spending reduces net assets. The terms *cash outlays* or *disbursements* seem to adequately describe spending on the cash basis. Beyond that, the technical vocabulary is rich but ambiguous. The terms *expenditures* and *expenses* are often used interchangeably, but they really should not be. The term *expenditures* is associated with the modified accrual basis of accounting. Because expenditures, as changes in net assets, are defined in terms of assets and liabilities, the types of assets and liabilities shown in Figure 14.1 will affect the definition of expenditures. Specifically, the decreases in current financial resources as well as increases in current liabilities give rise to *expenditures I*—a weak modified accrual concept. Spending that reduces noncurrent financial resources or creates long-term liabilities may then be called *expenditure II*—a semistrong modified accrual concept. When the term *expenditure* appears in the government accounting literature, it typically refers to what we call expenditure I. The designation expenditure II can accommodate the trend toward the recognition of more and longer-term liabilities. Finally, the full accrual basis uses the concept of *expenses,* which can include the cost of nonfinancial assets used in producing goods or services, depreciation being a prime example.

Having analyzed revenue and spending measures in considerable depth it is time to relate these variables of financial operations to financial positions expressed in the form of the accounting equation. Recall Equation 6:

$$\text{Assets}_{(t+1)} - \text{Liabilities}_{(t+1)} = \text{Net Assets}_{(t+1)}$$

This section has discussed revenues, expenditures, and expenses in terms of assets and liabilities as follows:

$$\text{Assets}_{(t)} - \text{Liabilities}_{(t)} = \text{Net Assets}_{(t)}$$

Equation 7

+	-	+	$\text{Revenues}_{(t+1)}$

Equation 8

-	+	-	$\text{Expenses/Expenditures}_{(t+1)}$

resulting in

Equation 9

$$\text{Assets}_{(t+1)} - \text{Liabilities}_{(t+1)} = \text{Net Assets}_{(t+1)}$$

In this way, the operating statement as symbolized by Equations 7 and 8 may be viewed as a bridge between two successive balance sheets depicted by Equations 6 and 9. Similarly, a budget, which projects resource inflows and outflows, links two pro forma statements of financial position. The financial accounting model is therefore more complete than the budget model in that it embodies both flows and stock measures. In comparison with the typical one-period budget model, the accounting model continuously traces the changes in assets and liabilities. It is therefore particularly useful in tracking the future consequences of current operations. As such, it is a necessary and useful complement to the one-period budget model.

ILLUSTRATIONS

Several illustrations of the concepts just presented are now provided. Throughout the examples, C stands for the cash basis, WM stands for weak modified accrual, SM stands for semistrong modified accrual, and F stands for full accrual. All the cases presented are analyzed from the government's perspective.

Case 1

Mr. Policeman worked for the City of Riverside. For FY97, he received $40,000 in salary and overtime pay, plus $4,000 in short-term fringe benefits ($3,000 of which had been received by year's end). In addition, he was entitled to some long-term benefits: $2,000 of vacation and sick-leave pay, as well as $6,000 in employer-contributed retirement pension and other postemployment benefits.

Analysis. The headings in Table 14.2 represent the elements of the accounting equation, which we will use to assess Mr. Policeman's impact on Riverside's finances under the four bases of accounting discussed earlier. The cost of Mr. Policeman's service increases from $43,000 under the C basis to expenditure I of $44,000 due to the recognition of $1,000 of short-term liability under the WM accrual basis. Another $8,000 in long-term liabilities raises the cost to expenditure II of $52,000 under the SM accrual basis. Because no diminution of capital assets is involved in this case, the full accrual basis is equivalent to the SM accrual basis. It should be noted that the WM basis added $1,000 in short-term liabilities, and the SM and F bases added another $8,000 in long-term liabilities to the amount recognized under the C basis. The acknowledgment of this $8,000 of *operating debt* related to services delivered represents the information value added of accrual accounting.

Table 14.2. Personal Services and Operating Debt.

Basis of Accounting	Cash	+ Current Financial Resources	+ Non-current Financial Resources	+ Non-financial Resources	= Current Liabilities	+ Non-current Liabilities	+ Net Assets
C	-43,000				=		-43,000
WM	-43,000				= 1,000		-44,000

SM	-43,000	= 1,000	8,000	-52,000
F	-43,000	= 1,000	8,000	-52,000

The budgetary implication of this analysis can be seen in attempting the answer to the question, How much should Riverside have levied in taxes to cover the cost of public safety provided by Mr. Policeman? The amounts would similarly range from $43,000 to $52,000, depending on the extent to which the city's budget policy required the FY97 taxpayers to bear the cost of Mr. Policeman's service during that period. Cash budgeting would leave a legacy of unfunded liabilities; accrual budgeting might induce higher current taxes to fund both cash payments and some or all of the delayed costs.

Addendum in 2010:

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Mild	Expenditure as measure of cost of service	=44,000
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Moderate	Expense as measure of cost of service	=52,000
	+ depreciati on expense of equipment used in service delivery	+10,000
Strong	Expense as measure of cost of service	=$62,000