Formula Budgeting: The Economics and Analytics of Fiscal Policy under Rules

Eric A. Hanushek

Abstract

The dramatic change in aggregate fiscal policy in recent years has contributed to a shift from process rules to allocation rules in federal budgeting. Although the allocation rules inherent in formula budgeting seem to offer fairness in times of fiscal constraint, they actually impose arbitrary program-level budgets that reflect the peculiarities of baselines, accounting conventions, and time horizons. Formula budgeting also changes the analytical environment, forcing policy analysts to pay greater attention to institutional arrangements.

Fiscal policy, and the role of analysts in discussing it, has been changing at dizzying speeds. While the seeds were present earlier, the recent fiscal reality—characterized by routine government deficits in the range of five percent of GNP—has led to a fundamental rethinking of the aggregate impacts of deficit spending. The early debate dwelled on issues of the appropriate aggregate fiscal policies, but more recent attention has turned to the micro decisions that are the raw components of the aggregates. The most ominous aspect of this has been a reliance upon blunt rules for spending and taxing decisions. While there is some chance that the use of such rules is just a short diversion from past practice, it appears more likely to be a signal of fundamental changes in the policy making process.

The micro aspects of current budgetary policy, encapsulated in the reliance on broad mechanical rules for programmatic spending, or what I will call *formula budgeting*, could well have profound impacts on the operation of government. The debates and politics of aggregate budget deficits could be focused on macroeconomic issues and need not alter decision making at the programmatic level. But in reality the aggregate rules are now being translated into their micro analogues. The Gramm-Rudman-Hollings (GRH) rules, which bluntly impose formula budgeting, are a perfect but nonunique example.[1] They merely codify a movement already observed in addressing large fiscal deficits. Modification and restriction of the elaborate automatic GRH rules will not reverse the movement. Formula budgeting has its own appeal and is likely to be a long term feature of decision making during any period of budgetary restraint.

Less obviously, there is an analytical sidelight to current fiscal policies. Formula budgeting reduces the usefulness of the standard microeconomic tools by shifting the terms of

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the policy debate. In addition, it emphasizes the enormous importance of the institutional structure of budgetary decisions. Analysts who wish to participate effectively in federal fiscal policy must adjust to this new institutional environment.

THE EVOLUTION OF FORMAL RULES

Several diverse but interrelated factors have come together to change in fundamental ways the character of programmatic decision making. For the most part these have been "top-down" changes, where the exigencies of aggregate policy concerns related to large federal deficits have led to pervasive changes in budgeting for individual programs.

Although the character of budgetary decision making continues to evolve and face modification in the Congress and the courts, it seems unlikely that we will return quickly to business as usual.

Macroeconomic Elements

The macroeconomic foundations of fiscal policy no longer appear as solid as they once did. The once dominant Keynesian notion of aggressive management of aggregate demand has fallen prey to attacks on its underlying conceptual basis, to skepticism about it implementation within the cumbersome world of federal decision making, and to empirical observations of the continuing fluctuations in the business cycle. The evolution of a world economy, with attendant freeing of exchange rates and increasing interdependence of trading nations, has also taken its toll.

Entering into the Seventies, economists and policy makers readily accepted the notion that, at the aggregate level, government spending and taxation policies should smooth out short run fluctuations in aggregate demand. So firm was this faith in the powers of modern fiscal policy that some economists believed the era of business cycles had passed. The Eighties have demonstrated that the extremes of the business cycle remain with us. Yet, while belief in simple Keynesian prescriptions has greatly eroded, no new framework has taken its previously dominant role.

Coupled with such conceptual uncertainty has been a series of embarrassments: failed economic forecasts, inadequate predictions of budgetary deficits, and the like. It is unfortunate that budgeting so depends on macroeconomic forecasts. But unequivocally it does. Projections of the future are fundamental to virtually all policy debates.

The uncertainty of forecasting economic conditions is evident from the work of the Congressional Budget Office. While its record is as good as or better than almost all other forecasters, the CBO's average absolute error in one-year forecasts of the growth rate in GNP is 1.1 percentage points.[2] Obviously, errors of this magnitude become very important in projecting the budget aggregates and individual program entries. Both revenues and expenditures on public programs are sensitive to the state of the economy. A one percentage point difference in real growth of GNP would, in 1986, change the estimated deficit by $19 billion (compared to a baseline estimate of $215 billion). Such forecast uncertainty complicates political discussion of fiscal policy and undermines public credibility of the budgetary process.

The Magnitude of Deficits

The disarray of macroeconomics and the history of both economic and budgetary forecasting errors made many of the policy changes of the early 1980's easier. The completely noncontroversial idea that the tax system presents disincentives for productive economic activity was translated into an extreme argument: the supply responses arising from a

reduction in tax rates would be so large that they would lead to increased federal revenues. Because the debate was predicated on alternative projections with very different assumptions about the operation of the economy, considerable latitude existed for pursing disparate policy objectives. Out of the economist's hat came what must be the politician's dream: It was possible to reduce taxes and still increase programs—defense, social insurance, environmental reclamation, Medicaid, or whatever appealed to Congress. Lower tax rates would generate the extra income and revenues needed to hold budget deficits in check.

This history is important because it set in motion a course of spending and taxation that, in the absence of abnormally high economic growth, would lead to ever growing federal deficits. Moreover, with indexation of the personal income tax system, the automatic growth in tax revenues through inflation was halted. Thus politicians found themselves faced with unexpected and unpleasant choices. Restoring more fiscal balance called for their reversing one or more recent actions—either the reduction in taxes, or the restoration of defense expenditures, or perhaps even reopening questions about the Social Security system immediately after a (so-called "permanent") solution had been reached in 1983.

Moreover, the political incentives were perverse. No theory of macro-economics predicted an immediate crisis given the slack in the economy; nor did one occur. In fact, the economy grew out of the 1982 recession at a near record pace for the first two years. (The growth rate out of the recession subsequently slowed to slightly below average.) Rather, the problem was described as long term, one that would have its visible impact far beyond the next set of elections. This kind of political situation is not easily dealt with. Amenable only to difficult and painful solutions, the deficit had to be tackled on the basis of projections and untested theories, not on the tangible facts of the day.

The difficulty of the choices and the uncertainty about the economics of the situation promoted procrastination that allowed the fiscal situation to reach new and politically paralyzing proportions. Part of the procrastination was completely explicable—the 1982 recession was very severe. As the economy recovered, however, it became increasingly apparent that the deficits had a large structural component that would persist beyond the recession.

The fiscal imbalance of recent years is indeed quite new and unique in United States history. Except in wartime, the size and growth of deficits had never been seen before. Average annual deficits as a percentage of GNP increased from 0.2 percent in the 1950s, to 0.8 percent in the 1960s, to 2.1 percent in the 1970s, and finally to 4.4 percent from 1980 to 1985.

The difference between the deficits of the 1980s and those of previous times is worth stressing. In fiscal year 1985, total outlays amounted to $946 billion while total revenues were $734 billion, thus leaving a deficit of $212 billion or 5.4 percent of GNP. The spending side was composed of allocations of $253 billion for national defense, $440 billion for entitlements (Social Security, Medicare, and other mandatory spending programs), $129 billion for interest on the national debt, and $172 billion for nondefense discretionary spending. This simple arithmetic demonstrates vividly that dealing with the deficit, particularly because spending is difficult to adjust in the short run, involves much more than some marginal adjustments and the elimination of a few small programs. In particular, any conceivable change restricted to nondefense discretionary spending would be insufficient to eliminate deficits. Cutting back on Small Business Administration loans, no longer subsidizing Amtrack, and withdrawing funds to the Export-Import Bank would eliminate a few billion dollars—real money to be sure. Yet, no matter how large the symbolic or public policy value, such actions would make only small dents in existing deficits. Moreover, the budget has no line item for "waste, fraud, and abuse," so however

appealing the notion of reducing deficits through increased efficiency, there is no quick and easy way to do so. Elimination of deficits requires either major policy changes on the spending side or increases in revenues—neither of which comes easily.

The Scope of Fiscal Rules

The Congress, when faced with such problems, quite naturally turns to consideration of the rules by which fiscal decisions are made. After all, legislatures are designed to make rules.

Two vastly different kinds of rules enter into the fiscal policies of the government. At one pole come the process rules—how is a budget developed, modified, etc. These rules, which are imbedded in the procedures for executive and congressional actions, have been the focal point of the vast majority of budgetary reforms. They do not, however, prescribe an answer or even a specific outcome of the process. At the other pole one finds outcome oriented rules. The archetypical example is the proposal of a balanced budget amendment to the Constitution, where the "how" is subjugated to the "what" of the budget process. While some view this as an exceptional case, other less sweeping examples can easily be found in budgetary history.

The governing process rules are found largely in the *Budget and Impoundment Control Act of 1974*. It created a congressional budget process, complete with rules on the timing of decision making, the interactions among committees, and the setting of priorities.[3] An important innovation of the Budget Act was the introduction of the budget resolution, a procedural mechanism that required planning for the aggregate result of the many separate budget actions. However, it did not set any requirements about the level of taxes, spending, or the magnitudes of deficits.[4]

In contrast, allocation rules directly specify spending levels. Until recently, they appeared to be more talked about than real, more of a starting point than an ending point. Limits on total spending or deficits—balanced budget laws or binding debt ceilings, for example—are the most recognizable proposals along these lines, but other less sweeping examples are easy to find. The language of budgeting now also includes allocation rules at the micro level.

Traditional discussions of budgeting suggested that informal rules of thumb play an important role in the determination of budgets at the program level.[5] Discussions emphasized the empirical regularities of budgetary decisions and the pattern of incremental decision making. According to these theories, the complexity of the task and the structure of decision making contribute to informal budgeting rules and common patterns of budgetary increases across agencies.

Informal rules with incremental budgetary allocations clearly have to be important at some level during normal times. A trillion dollar budget cannot be considered anew, program by program, each fiscal year. The existing and projected patterns for programs are obvious starting points, and existing procedural rules reflect this. In fact, the continuing authorizations for entitlement programs, some 45 percent of outlays, make this starting point a matter of law. Incremental budgeting for broad functions, such as national defense or energy programs, does not imply that programmatic changes cannot occur. In fact, there may be huge variations in funding at lower levels of aggregation as individual programs go through a life-cycle of growth, stability, and possible decline.

Past budgetary considerations of Congress, as envisioned by the 1974 Budget Act, begin with some baseline for broad programmatic spending. This is modified by major identified exceptions, for instance budgetary initiatives by the Administration or the policy proposals of individual authorizing committees of Congress. The resulting budget resolution, still at a fairly aggregate level, is then fine-tuned by those with specific expertise (the individual authorizing and appropriations subcommittees).

However, formal and explicit allocation rules have been proposed with increasing frequency and look more like the wave of the future. This results partly from the different politics of cut-backs as opposed to growth.[6] But, perhaps more importantly, *large, nonincremental cuts*, those apparently called for by the size of the aggregate deficits, require different modes of decision making. We simply have insufficient off-the-shelf initiatives to bring about the necessary massive cuts in spending programs that are needed. Thus, the use of broad formulae such as "freezes" on discretionary spending, limitations on automatic cost-of-living adjustments, or linkages between spending and taxing decisions today seems accepted as a natural way to budget. The underlying structure is the development of a few broad sets of "similar" programs, all treated identically in terms of budgetary decisions. For example, one could divide the world into entitlement programs with benefits to individuals, defense and nondefense discretionary programs, and interest on the debt and apply a very simple rule uniformly within categories. A typical rule might be: benefits to each individual in an entitlement program are frozen at past nominal levels (with total spending then varying with enrollments), total spending in all discretionary programs is held to previous nominal levels, and interest on the debt continues as required by contractual obligation.[7]

Such formula budgeting in fact has its antecedents in past periods of much more modest budgetary control. Freezes on the hiring of new civilian employees by governmental agencies, across the board cuts of government travel, or blanket reductions in the use of consultants clearly are instances of formula budgeting applied to specific portions of the total budget.

The process rules of the 1974 Budget Act tend to promote formula budgeting. The first step in budgeting each year is the passage of a budget resolution that sets out the overall spending and taxing plan of a new fiscal year. When the activities of Congress are dominated by budget matters—as they have been for the past several years—the budget resolution affects the character of the entire session. Moreover, congressmen have been bombarded by constituents with interest in solutions to deficit programs, and this has provided significant incentives to many congressmen to be involved in fiscal issues. Thus, over the past several years a popular sport by members and groups in Congress has been the development of budget plans. But the enormity of the task—developing a budget for the entire government—exceeds the capabilities of all but a few congressional committees or groups. Therefore, in order to enter into the debate congressmen have resorted to crude aggregate formulae for micro allocations.[8]

In between the two extremes of process and allocation rules comes GRH. It includes process rules and allocation formulae that are triggered by the status of the overall budget deficit. The essential ingredients of GRH include: annual deficit targets designed to bring a balance of revenues and expenditures by 1991 and maintain it thereafter; changes in the *Budget Act* to regulate the character of congressional debate on the budget; and a formula for determining programmatic spending reductions if Congress does not succeed in passing spending and revenue *laws* (not plans) that achieve the deficit targets.

In many ways the GRH is the grand synthesis of the pattern that had been evolving in budget deliberations. It strengthens the process rules by incorporating allocation goals that cannot be ignored. And it invokes formula budgeting to deal with the micro complexities. The difference, of course, is that previously applied goals and allocation formulae merely provided a framework for decision making, one invariably modified substantially during the course of deliberations, while the GRH formulae become binding at some point in the process.

The pros and cons of explicit balanced-budget rules, within the context of an amendment to the Constitution, have been widely debated on macroeconomic grounds.[9] The

micro allocation questions that would arise under an Amendment or statuary approach locking in aggregate totals have received much less attention.

A formula approach for allocating overall cuts to aggregate budget areas need not, of course, actually be implemented at the individual program level. It would be possible to modify broad allocations by detailed program-by-program analyses, such as traditional cost-benefit analyses, while remaining within aggregate budgetary totals. However, the trend seems to be toward application of formula budgeting notions at more micro levels.

The Appeal of Formula Budgeting

The first and most obvious characteristic of budgetary rules is their simplicity. Detailed descriptions of programs are not required because common rules can be specified without resorting to any details. This also suggests low informational requirements, because a priori details are not needed. In fact, while some fundamental choices must be made, the only thing necessary is a specification of functions or programs that are amenable to the same general formula.

The apparent fairness of rules treating large blocks of programs in the same way is another rallying point for advocates. By not attempting to isolate specific areas or programs, an equity built upon the status quo arises. Moreover, overall formulae are more easily enforced than other micro allocation schemes because they provide a simple standard for judging whether or not some programs are receiving special treatment.

All of these aspects point to what is perhaps the fundamental appeal of budgetary rules. Formula budgeting involves a kind of reverse log rolling, where political compromises can be fashioned in the absence of a consensus on choices.

During 1984, public sentiment, if not the economics of the situation, seemed to make deficit reduction imperative. This sentiment led members of Congress to elevate deficit considerations to the top of the priority list. But public sentiment did not suggest how any reduction should be brought about. In fact, most public opinion polls provided very inconsistent answers: a majority of voters held that deficit reduction was the highest public priority, but each of the possible means for reducing the deficit—from taxes to cuts in different kinds of programs—received less than majority support. A political solution was required, and one which would have to allow for broad participation and sacrifice. Indeed, what better than a broad based rule for holding down spending?

The inherent asymmetry of cutting back in activities as compared with expanding activities also comes into play.[10] Package deals of the past, when the total scope of expenditures was increasing, allowed for simple trading of support. But, under a fixed budget total, the interactions of diverse programs become much more apparent.

Finally, formal budgeting rules offer a commitment to future actions which may appear more credible to the public at large, to the financial community, and to the Congress itself than the statement of intentions found in budget resolutions. Under the *1974 Budget Act*, Congress votes on three-year plans for taxes and spending. However, actions planned for the second and third years can be changed before they ever come into effect. Casual observation of news reports on budget plans and on the reactions of financial markets to budget resolutions suggests that any proposed out-year plans are substantially discounted. Formal rules, at least if they include some enforcement mechanism, imply a deeper commitment to planned fiscal actions.[11]

THE DISADVANTAGES OF FORMULA BUDGETING

The first and strongest attack on the use of explicit budget rules is the lack of any refined judgment that goes into across the board actions. This is particularly true of large changes

Table 1. Illustrative distribution of spending reductions from alternative budget formulae designed to bring deficits to 2 percent of GNP in 1988 (reduction from CBO 1985 baseline in billions of dollars).

	1986	1987	1988
Alternative 1: Equal % reductions from Baseline*			
National Defense	8	26	48
Entitlements	12	36	61
Nondefense Discretionary	5	15	25
Total Reductions	25	78	132
Alternative 2: Equal % growth from 1985 Levels			
National Defense	26	52	81
Entitlements	−4	17	37
Nondefense Discretionary	3	9	14
Total Reductions	25	78	132

* The CBO Budget Baseline is the projected revenues and outlays that would occur under current law. The baseline is sensitive to specific economic projections and to specific assumptions about intent to support different programs. In particular, many programs are subject to annual appropriations, and Congress does not necessarily indicate its intent for the future.

Source: Congressional Budget Office, *Reducing the Deficit: Spending and Revenue Options*, 1985.

brought about by rules. If the current spending distribution is roughly correct (that is, according to public priorities), program expenditures have the same social value on the margin. Therefore, we might believe that small across-the-board changes from current allocations capture appropriate public priorities. Such is clearly not the case for large changes in program activities, as are now under consideration. Relatedly, if the initial spending allocation is suboptimal—due to lags, rigidities, or whatever—an across-the-board cut is sure to be more painful than necessary.

Interestingly, many of the proponents of the GRH used the very arbitrariness of the reduction formulae (the "sequestration rules") as a supporting argument. The logic was "the worse, the better" because they wanted to force budget changes of sufficient size so that the automatic reduction procedures would not come into play. If the alternative was bad enough, it was held, no one would choose inaction.[12]

The asserted fairness of rules, moreover, is considerably overstated. Many rules, each claiming equal sacrifice, are possible. These different rules can have very different effects on priorities and programs.

Budget rules can plausibly be based either on past history or on announced future policies. The President's budget submission and the budget resolutions of Congress provide details about tax and expenditures plans for three to five years in the future. These are statements of priorities that could guide relative distributions of funds just as current spending could.

Different choices for the base of rules can be dramatic. Table 1 displays some calculations of two alternative paths of deficit reduction beginning in Fiscal Year 1986 that would bring deficits down to 2 percent of GNP by Fiscal Year 1988. Alternative 1 reduces the baseline budget estimates for each category by the same percentage amounts, while Alternative 2 has the expenditures in each category for 1985 grow by the same percentage.[13] The table presents the dollar reductions from the CBO baseline projections for

major categories. Percentage cuts from baseline projections fall, in relative terms, less heavily on programs growing in real terms—national defense—than on programs that are steadier over time. Conversely, restricting programs to a common growth rate from their current position penalizes more heavily those programs that otherwise would have experienced more rapid growth. In the illustration, about 36 percent of the total reduction in 1988 comes from defense under equal percentage cuts from baseline projections, as compared to over 60 percent under equal growth rates from 1985 levels. The point of this example is simple: alternative definitions of equal cuts, each seeming equally reasonable, yield dramatically different results. It takes a very flexible definition of "fairness" to incorporate this degree of arbitrariness.

Recent history readily illustrates different perspectives on fairness. Over the past five years, the share of spending targeted for (discretionary) nondefense activities fell steadily while expenditures targeted for defense rose steadily. At any time during that period, freezing the relative allocations on the basis of current spending would yield a significant difference from allocations based upon future plans of the budget documents. And there is no obvious way to choose between these two potential rules (or a number of other similar formulae) without engaging in a full blown debate over priorities. For example, if one believes that defense will be adequately restored by 1986, "fairness" might dictate holding it to the same growth as other budget components. If, on the other hand, one believes that our defense is still lacking either absolutely or relative to the Soviets, a rule more favorable to defense is "fairer."

The complexity of the government, and the corresponding variety of accounting conventions, provides the second element of arbitrariness in the choice of rules. Among other things, the federal government builds bridges, pays for research, funds welfare programs, insures against fluctuations in crop prices, lends money, guarantees private loans, and rents land for grazing. Each of these activities has its own accounting convention to indicate how a program is recorded in the budget. Some of these conventions are bizarre by most accounting standards, but for the most part the conventions themselves do not have important implications. Budget examiners at the Office of Management and Budget, and the Congressional Budget Office as well as the staffs of the relevant congressional committees, understand most of the peculiarities and are able to analyze and to make decisions on a rational basis—even if the accounting conventions are not particularly helpful.[14] However, reliance on formula budgeting changes the situation dramatically. The peculiarities become central. Rules and conventions that seem innocuous can radically alter real resource allocations.

Because a given rule—say a "freeze" on spending—can have radically different allocations depending upon a series of less than obvious accounting definitions, any claim of "fairness" must be tempered considerably.

Budgetary rules appear to have another significant disadvantage from a policy standpoint. They encourage myopic behavior. In part because future Congresses cannot be bound through normal legislation, any budgetary decisions promised for the future can be overturned. In addition, due to the brevity of election cycles, activities far in the future have less salience than those of today. Further, given the fact that a "crisis" situation generally calls forth action, it becomes useful to elevate conditions needing attention to that status. But, once labeled as a "crisis," the need to act swiftly and clearly results in a focus on the immediate as opposed to the more distant.

One might suppose that something like the GRH rules, which specify a five-year transition path to a balanced budget, would lessen the extreme weight attached to the short-run. But the enforcement is based on year-by-year goals. Because the near term goals appear so difficult to meet, little attention is being given to anything but the current year. Indeed, the problem of myopia may even be heightened because some proposals, such as

the sale of government assets (which are counted as a deficit reduction), would achieve short-run gains at the expense of future revenues.

RULES, BUDGETARY PECULIARITIES, AND ANALYSIS

The notion of formula budgeting and the more widespread use of rules has potentially important implications for analysis. Rules are easy targets to attack—perhaps too easy. Nevertheless, to be useful, analysts cannot be content with simply attacking rules but instead must learn to work more effectively within this new environment.

While analyses of individual programs will always have value, they are unlikely to be central to public policy debates that demand quantum adjustments in past spending and tax programs. The needed analyses fall somewhere between traditional macro and micro analyses, covering broad sets of programs. They also require more direct linkages to budget debates than are contained in typical cost-benefit analyses of public programs. Essentially, we need to invent new modes of analysis, or at least to modify and to repackage existing techniques in fairly radical ways.

Unfortunately I am not prepared to unveil any new inventions here. Instead, I will limit myself to offering some observations about major analytical aspects of the shift to formula budgeting. A number of these observations relate generally to budgeting. The fact is, however, that their potential for leading to misallocations is dramatically increased by formula budgeting.

Observation One. Accounting conventions for the federal budget are not designed with the singular purpose of making the best aggregate decisions on governmental programs.

Current budgetary conventions have arisen from mixing different accounting standards with *ad hoc* rules amidst conflicting political forces and divergent views on what information to provide regularly.

The President and Congress make decisions on the unified budget, which ultimately is designed to provide information about the borrowing requirements of the government. Over time, definitions and practices change, sometimes for substantive reasons and sometimes for cosmetic reasons. For example, beginning in 1971 some expenditures were labelled "off-budget." These included such things as loans through the Federal Financing Bank and oil purchases for the Strategic Petroleum Reserve. Clearly, the intention of making these off-budget, an action which of course does not affect the realities of spending, was to insulate them from normal budgetary considerations. Indeed, it provided a method of "laundering" spending, so that actions with real spending implications could appear to have no direct impact on budget deficits.

On the other hand, the organizations directly concerned with the size of deficits (the Office of Management and Budget, the budget committees of the Congress, and the Congressional Budget Office) always favored "truth in budgeting" and the elimination any such distinctions. Indeed, in the Administration's 1985 budget and subsequent reports of the CBO, the distinction was simply dropped from most presentations, and the total deficit was always discussed. In the same vein, the 1983 Social Security amendments established a timetable for taking Social Security off-budget; this was subsequently accelerated to 1986 by GRH, which simultaneously put the previously off-budget accounts on-budget. Officially, 19 percent of 1985 outlays (and 25 percent of revenues) would be off-budget by the new definitions. But this is almost certainly a semantic victory for those wishing to insulate Social Security, because the deficit targets were simultaneously defined in terms of total deficits.[15]

The fluidity of budgetary conventions is nothing new, but it becomes more important with formula budgeting. The simplicity of such mechanical rules does not allow for extensive exceptions recognizing special budgetary conventions that have built up in the past. Further, there are new incentives to alter budgetary conventions—a tack that may be politically easier than exempting specific programs from the cutback process.

Observation Two. The budget framework provides a relatively poor starting point for making many policy decisions and, importantly, for making formula allocations.

What is the difference between a guaranteed student loan and a Pell Grant to a college student? Every college student knows the difference. The loan, but not the grant, must be repaid. However, the budget will record a $1,000 grant and a $1,000 loan as being the same (at least initially).

The relevant decision making information for many purposes is directly related to the subsidy value of any activity. Thus, a direct cash payment to an individual should be recorded at face value. But a loan, to the extent that it simply substitutes for private financing, would have a subsidy value much less than its face value; the subsidy would be closely related to the difference between interest rates of public and private borrowing.[16]

Calculating subsidy values is surely a very difficult task, and one that we cannot do with much precision. Yet, the subsidy value of different programs is at times completely unrelated to the budget authority or outlay figures found in the budget deliberations. Moreover, even in terms of budget control, the relevant constraints differ across programs. The distinction between grants and loans is but one example of an accounting convention that obscures programmatic distinctions.

The variation in budgetary treatment of different programmatic entities interacts very unfavorably with formula notions of budgeting. A reduction of 10 percent of both grants and loans has very unequal effects on recipients and the economy, even though it fits neatly into budgetary rules under current accounting conventions. The minimal requirement would be to develop a taxonomy for programs by the relationship between budgetary figures and subsidy values or resource costs. In past decision making, such issues greatly affected the programmatic actions of the authorizing and appropriating committees, but these considerations are more difficult within the formula budgeting framework. Both the terms of the debate and the "credit" toward meeting spending goals are determined by budgetary conventions, not the economic effects of actions.

Observation Three. The fiscal decisions and policies of the annual budgeting process do not mesh well with the longer time horizon appropriate to some programs. While not new, these problems are exacerbated by formula budgeting.

Embedded within the federal budget are a variety of allocation rules and accounting devices that are fundamentally different from normal appropriation accounts. The most significant, both in size and in substance, are trust funds. Trust funds have been set up in a wide range of areas, and spending out of them makes up over one third of total outlays. The best known trust funds are the Old Age, Survivors, and Disability Insurance funds (Social Security), health insurance funds (Medicare), and highway and mass transit funds, although others exist for such things as airports, black lung disease, and federal employee retirement programs.

Two aspects differentiate trust funds from other spending accounts. First, funds have dedicated revenue sources;[17] second, evaluation of their fiscal position frequently involves very long time periods. Trust funds essentially require keeping two sets of books. One set (the unified budget) records the current cash transactions of the government, while the

while the other records trust fund balances. In the trust funds, revenues are explicitly restricted for the specified outlays. Therefore, if a surplus of receipts over expenditures exists in any given year, the surplus is loaned to the government, generally in the form of special intragovernmental securities. If the trust fund runs a surplus, this will reduce the total deficit and the external borrowing needs of the government.

These funds vividly illustrate the alternatively applied definitions of "balance." The case of Social Security is a good example. During the beginning of this decade, most standard projections indicated that the trust funds for the Old Age portion could not sustain the program when ultimately hit by the retirements of the "baby boomers" sometime during the 2010 to 2020 period. Moreover, the fund faced a short-run problem of balance—a very important "crisis" that led to the adjustments in 1983 when tax rates were increased, more workers were covered, some benefits were taxed, and standard retirement ages were slated to increase in the future. By the most commonly used demographic projections, these actions led to long-run balance. They also lead inevitably to a pattern of trust fund balances and attendant fiscal policy that mirror the demographic changes yet to occur. The balances grow very large for the remainder of this century and then precipitously decline.

Two analytical questions about trust funds arise within the budgeting and fiscal policy context. First, if a trust fund is in long term balance and, indeed, if it is running a current surplus, should there be a different treatment of such programs during periods of cutbacks? One argument frequently made concerns the OASDI trust funds, which will run about a $14 billion surplus in fiscal year 1986. By simple annual accounting, they are not contributing to the deficit, and therefore it is argued that they should not be part of any actions to reduce deficits. Yet a short-run or long-run balance of the particular revenue source and expenditure program does not imply that the program is at the correct level, or that all of a particular revenue source must be devoted to the specific program. Formula budgeting tends to frame the issue in terms of whether to include or exclude sets of programs and therefore obfuscates perhaps more fundamental issues.

The second analytical question asks how continuing programs with long-run goals should be integrated into the normal operations of fiscal policies. Trust funds represent a legal obligation to transfer resources to a specific program in the future. In the case of social security the magnitude of future transfers is determined importantly by exogenously determined demographic forces. However, there are significant questions about the fiscal mechanisms for doing this, and these questions are made more difficult by short run budgetary considerations. The premise of the trust fund accounting is that the government actually saves substantial amounts in the near term to be used in funding the baby boomers' retirement during the next century. This implies a high level of discipline to run the required surpluses (funded by payroll taxes in the case of Social Security) during the near term, since the retirement benefits will later have to be paid. How can the government do this effectively?

These questions, which will be important ones in the next two decades, are both unresolved and not unique to social security. They come up in the context of other trust funds as well. Trust funds are largely accounting artifacts that imply varying degrees of commitments to specific programs in specific years. Formula budgeting on the other hand starts with the presumption that a dollar is a dollar in each budget year.

Observation Four. Budgeting considerations, particularly in the face of annual constraints, give the timing of spending and receipts an importance that is seldom found in the analysis of public programs.

The unified budget accounting rules are basically cash-flow concepts related to current

borrowing requirements, but decision making is based more on budget authorizations. The distinction is very important whenever aggregate rules about deficits are crafted. Congress authorizes agencies to enter into contracts and to make commitments to spend on a program (that is, it grants "budget authority"). Frequently the first activities of spending what is authorized involve developing specifications for programs, accepting bids from various parties, negotiating contracts, and the like before any checks are written; and these various steps take time. As a result, particularly with new programs or ones involving purchases of complex products, the majority of spending does not occur in the year that budget authority is granted. Yet, it is the actual spending (which is recorded as "outlays") that goes into the calculation of the deficit. How should program decisions (which are made on the basis of budget authority) be treated under formulae that concentrate on spending (outlays)?

This question has very important implications for the conduct of different activities. Some programs, for example those involving primarily governmental employees, spend most if not all of their authorizations within the same year. Other programs, such as building an aircraft carrier, will spend budget authority authorizations over a 7 to 8 year period. Outlay-based budgeting formulae will affect programs very differently, depending upon their spending structure and how the rules treat appropriations.

We currently have very poor systems for tracking the precise program by program outlays, let alone understanding what determines the time paths of various expenditures. Some of the previously noted differences in spending patterns have certainly been discretionary and can be altered if incentives exist to do so. But little is known about the real costs of purchases under different spending paths or how these would change by discretionary adjustments in the rate of spending. For example, it is frequently asserted that frequent changes in long term programs, such as purchases of a new type of military aircraft, increase the unit costs. This statement refers to annual changes in authorizations for multiyear procurements, but its importance would surely be heightened by additional constraints on the actual spending for programs.

The quandary with formula budgeting based on outlays is best illustrated in the defense area. Given an annual constraint on spending, there is an incentive to cut back programs that spend budget authority quickly, because this will minimize the amount by which budget authority (and thus aggregate spending in the longer run) will have to be reduced.[18] This in turn could severely distort budgetary considerations in ways that are quite harmful to national security because it introduces different "shadow prices" on programs with different spending rates. While special rules can be introduced to deal with this, they must necessarily be very crude ones based upon broad averages of past spending rates.

A second aspect of timing arises from the fact that the budgetary system operates on the basis of estimated nominal dollars for future years. This makes budgetary estimates particularly sensitive to economic forecasts because program activities are completely intertwined with economic assumptions.[19] Major weapon systems, for example, are fully funded when first authorized; the funding must therefore allow for future inflation that will affect costs when actual construction occurs. Budgeting in terms of future nominal dollars is unfortunate given the imprecision of inflation forecasts.[20] It also implies that economic forecasts for future years will directly enter into the operation of any reduction formulae for the current year.

Accurate comparisons of budgetary actions with different timing are also severely hindered by the current budgetary and decision making framework that precludes any discounting. Clearly (ignoring inflation) a dollar spent today is not the same as a dollar spent tomorrow; similarly, a dollar of tax revenue today differs from one tomorrow. Budgetary discussions, which frequently aggregate reductions in spending over the three years of a

budget resolution, completely ignore the timing aspects of different spending and receipt streams. It is difficult to justify making decisions without discounting on any grounds other than simplicity.[21] In the formula budgeting world, the lack of discounting introduces additional distortions in the comparisons of quick and slow spending programs.

There is no doubt that timing considerations, with their lack of proper treatment of revenue and expenditure streams, distort budgetary decisions considerably. This is not too surprising, given the real-time nature of the political process. Nevertheless, formula budgeting magnifies the possibilities for distortion by increasing the value of very short run actions.

Observation Five. Budgetary stringency both in the aggregate and at the micro level encourages substitute activities that fall outside the purview of any budget rules.

Many important interactions of the government with the economy do not appear in the budget, and the reliance on these might be heightened in an environment of budgetary rules. As everybody knows, the budget covers only a portion of the economic influence of the government, particularly when we begin to talk about micro, programmatic areas. A variety of governmental actions are reasonably close substitutes for direct budgetary treatment. Loan guarantees are perhaps the clearest example. These enter at zero cost in the year they are made. (Defaults, however, enter at the magnitude of the default whenever that might occur.) Loan guarantees are an alternative to direct loans because they effectively make funds from private sources available at subsidized rates. Therefore, budgetary stringency holding down the amount of direct loan activity would encourage increases in loan guarantees if that were permitted. Yet to the extent that concerns about deficits involve credit demands, a shift from direct loans to loan guarantees could leave aggregate credit conditions essentially unchanged. It could also imply differential effects at the micro level, depending upon the authorizations to employ guarantees.

Regulatory activities are frequently identified in a similar manner as being a substitute for different direct tax and expenditure activities of the government. Mandating actions to be taken by private individuals or other levels of government (for example, fleet mileage requirements on cars or specific rules for the treatment of the handicapped in schools) can achieve federal policies without expenditures. Again, budgetary stringency can influence regulatory behavior, and there exist no generally accepted means of measuring, let alone controlling, such budgetary interactions.

Substitutes for direct spending are likely to become increasingly appealing, even if they are not as clear or as efficient. There are, of course, many instances where privatization or shifting of fiscal responsibilities are appropriate. Nevertheless, budgetary constraints indiscriminately increase the value of such things to federal decision makers.

Observation Six. The lack of distinction between governmental investment and current operations—coupled with a lack of data on capital assets, depreciation, and the like—increases the inefficiencies associated with formula budgeting.

By OMB estimates, some 20 percent of governmental outlays go toward "investment-type" activities.[22] It seems reasonable to think of these as different than operating expenditures and direct transfer programs. They have pay-offs in the future and arguably make other governmental expenditures more efficient. But investment expenditures are indistinguishable from any other in the budget and thus are subject to the same formula budgeting rules as any other expenditure.

The problem goes deeper than that. No agreed upon definitions of investment categories exists. Nor do we have reliable data on historical investments and existing governmental

capital stocks. Therefore, it is difficult to calculate whether or not net governmental investment (counting depreciation) at any time is positive, is growing, or whatever. Moreover, the budgetary framework has no simple method of matching benefits from an investment program (if they could be known) with their costs, especially if benefits and costs occur in different budget years.

In fact, current budgetary conventions are perverse. Asset sales, such as those proposed in the Fiscal Year 1987 budget, act to reduce the federal deficit dollar for dollar, even though such sales have approximately zero impact on the economy.

Clearly these are important matters for analyzing the government's impact on the economy and its drain on aggregate savings. This is a fertile area for analysis, one that might go hand in hand with a reconsideration of budgeting concepts and conventions.

Observation Seven. The fundamental weaknesses of distributional data and analyses lead to continuing conflict in budgetary debates, conflict that is intensified in times of general cutbacks.

The budget allows for virtually no direct distributional analyses. This is not particularly surprising because that is far from its purpose. What is surprising, however, is the scarcity of data on the distribution of program benefits and costs. Furthermore, analytical techniques for distributional analyses are quite primitive. Again, these shortcomings become much more important in the face of widespread formula budgeting.

A variety of methods can be employed to allocate programmatic reductions in individual areas. Cuts in programs for the elderly—an emotional but recurring issue—provide a good example. When one considers the array of programs and services directly benefitting the elderly, it becomes obvious than many "fiscal equivalent" alterations exist. For instance, cutting cost-of-living increases to Social Security recipients, increasing Medicare payments, and altering the taxation of benefits, offer several options for achieving a desired amount of budgetary savings.

One way of "breaking the tie" among alternatives might be consideration of the incidence of any cuts on different groups in the population. Even crude evidence on distribution suggests that differences can be dramatic.[23] Providing such data is nevertheless a difficult analytical task that remains open to challenge, largely because of the lack of suitable data.

The importance of distributional information is heightened during times of reduction because reduction inherently includes an important element of redistribution. Formula budgeting, moreover, puts new demands on analysis as distributional comparisons of larger aggregations of programs are required. Such larger comparisons go far beyond previous distributional analyses, which tended to rely upon estimates from self-contained models such as microsimulations of program distributions. Being broad based, current concerns far exceed the programmatic base of the current models that cover only a small portion of spending and tax areas.

On the spending side, for example, existing analytical technology at best covers programs involving direct transfers to individuals. We have no widely accepted method of dealing with many programs, even those that appear close to direct transfers. For example, uncertainty exists concerning how to record the distributional impact of capping increases in Medicare reimbursement rates for hospital procedures at less than the increase in costs. The program covers hospitalization for the elderly, but the payments go to the service providers, not the patients. Where is the ultimate incidence? Changes in nontransfer programs—such as national defense or environmental clean-up—completely defy distributional analyses, even though such cuts would represent the majority of most broad reductions in spending. Similarly, shifts in fiscal responsibilities to lower levels of

government can only be analyzed in terms of the subsequent behavior of these governments. Moreover, nonmarginal changes and ones with potentially sizable programmatic interactions introduce analytical complexities that go beyond any current capability.

Observation Eight. Formula budgeting ignores any programmatic "life-cycles" and is inherently biased against new or innovative programs.

In times of cutbacks and concerns about deficits, new programs must not only pass loosely defined criteria of social welfare improvement, but must also meet more stringent rules such as budget neutrality. Many public programs are justified on the basis of benefits that do not necessarily show up in the budget; adding additional constraints about budgetary impact could severely distort programmatic decisions.

New programs are really just an extreme case of "life-cycle" considerations of public programs.[24] A typical government program will have some period of rapid growth in spending that occurs while the program is becoming operational. This will be followed by stability and perhaps by decline if the program is found not to justify its continued existence. Formula budgeting in a sense assumes that all programs are in the stable spending phase, an approximation to reality that is always suspect but that becomes increasingly untenable over extended periods of formula operation.

Formula budgeting would seem to call for something like a budgetary cost-benefit analysis. For the reasons described previously, however, such an analysis, relying upon current budgetary conventions, might bear very little relationship to a tallying of social benefits and costs. The appropriate alternative analytical treatment of programs at different points in their life-cycle, and particularly new programs, is less than obvious.

A CLOSING LAMENT

For economists interested in public policy, the poor forecasting records of macroeconomic models have long been the source of some professional embarrassment. Further, the disarray in macroeconomic theory in recent years opened the door for the dramatic change in fiscal policy that caught many by surprise and indeed challenged the decision making capabilities of the existing structure. In turn, this has led to formula budgeting, a policy making environment that may persist for some time.

In the past, economists could take solace in the predictive power of microeconomic theory and the contribution it could make to the more efficient allocation of public resources. In fact, many economists still view policy analysis as little more than applied welfare economics. Formula budgeting challenges this parochial view with a vengeance—"fair" but arbitrary rules replace the search for resource allocations maximizing the present value of net social benefits. There is still room for cost-benefit analyses to be useful, but it is pushed to the sidelines while the main discussion and decision making take place at a higher level.

Whereas economists previously could make important analytical contributions with only begrudging attention to institutional arrangements, they now must learn to seek efficiency within a strange set of new rules if they wish to be effective policy analysts. Ironically, a rapidly growing public sector, rather than one that is fat and constrained, seems to offer greater analytical opportunities for the microeconomist.

ERIC HANUSHEK is Professor of Economics and Political Science, University of Rochester. Between December 1983 and December 1985, he was Deputy Director of the Congressional Budget Office.

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NOTES

1. P.L. 99-177, The Balanced Budget and Emergency Deficit Control Act of 1985. Parts of this act were held to be unconstitutional by the U.S. Supreme Court, because it inappropriately blurred the separation of powers of the Congress and Executive. The explicit rules for across-the-board spending cuts, however, have not yet been challenged.
2. Congressional Budget Office, *The Economic and Budget Outlook: Fiscal Years 1986–1990*, February 1985, Appendix H.
3. For a description, see Allen Schick, *Congress and Money: Budgeting, Spending, and Taxing* (Washington, DC: The Urban Institute, 1980), p. 3–6.
4. As people evaluate the effectiveness of the Budget Act, they point to a wide range of different things: how actions correspond to the timing set out in the Act; the changes in the power of different committees, in the balance between the President and Congress, and so forth; and the size of deficits or growth of spending since the Act. While it would perhaps be comforting to find a fortuitous linkage between the procedures of the Budget Act and the fiscal outcomes, such linkage was not a central or explicit part of the Act.
5. The large literature on incremental budgeting is usually traced back to Aaron Wildavsky in the early 1960's. For an updated version of the arguments, see Aaron Wildavsky, *The Politics of the Budgetary Process*, 4th Edition (Boston: Little, Brown and Company, 1984).
6. For a detailed discussion of the differences see Robert D. Behn, "Cutback Budgeting," *Journal of Policy Analysis and Management*, Vol. 4, No. 2, 1985, pp. 155–177.
7. Actual formula budgets cannot be this simplistic. Some of the nuances of budgeting described below require more detailed specifications. However, they can all be within the same general spirit of the simple rules above.
8. Budget plans cover all of the activities of government and are presented in varying detail. The extreme of detail considered by the Congress in any aggregate way is the listing of spending reductions required under the "experimental" GRH sequestration of 1986; the OMB and CBO report filled 400 pages of the *Federal Register* for January 15, 1986. More often, budget plans will specify amounts for the 21 major functions of government. These functions are aggregations of activities into broad areas such as national defense or energy programs. Developing spending for even such a small number of functions is nonetheless very difficult. A typical plan will therefore employ some general rule to cover changes in most functions and then modify this for specific areas of interest or expertise by the drafter.
9. See the comprehensive discussion in Congressional Budget Office, *Balancing the Federal Budget and Limiting Federal Spending: Constitutional and Statuary Approaches*, 1982.
10. Another interesting asymmetry involves the typical prediction that Congress will not make difficult decisions, those that are painful to significant interest groups or large numbers of voters, in an election year. But the history of the 1980s is just the opposite: significant actions on overall deficits have occurred in election years rather than off-election years.
11. This is very similar to recent arguments about the value of monetary rules. These arguments concentrate on maintaining a stable policy environment because of its desirable macroeconomic results if the behavior of individuals is highly dependent on their expectations. See Robert J. Barro, "Recent Developments in the Theory of Rules versus Discretion," Rochester Center for Economic Research Working Paper No. 12, April 1985. The long standing debate among economists about the use of monetary rules, as popularized by Milton Friedman and others, traditionally came from two different arguments: either policy makers were pursuing inappropriate goals or they did not have enough information to make timely and appropriate decisions.

12. The actual incentives provided by such default rules are extremely complex. As a simple example, if rigid formula budgeting is applied after some committees have already reduced specific programs, these areas will take a double cut. Therefore, the willingness of committees to undertake cutbacks is related to their expectations for the use of across-the-board program reductions.
13. GRH rules for mechanical reductions of deficits are closer to Alternative 2. There are, however, special treatments for social security and other entitlement programs and for the split between defense and nondefense reductions.
14. To be sure, analysts throughout the government may have their own motivations that led them to use these peculiarities for their own advantage.
15. By taking Social Security off-budget, it does become exempt from the reconciliation provisions of the Budget Act. At some point this could have a real effect on budgetary decisions.
16. For an extensive discussion of both current accounting practices and the difficulties of estimating true resource costs with loan programs, see Congressional Budget Office, *New Approaches to the Budgetary Treatment of Federal Credit Assistance,* 1984.
17. The military and civilian retirement trust funds derive revenues from intragovernmental transfers, revenues in the sense that the government *as employer* contributes to retirement programs.
18. This assumes that sufficient budget authority is eliminated to obtain any given amount of current year savings in outlays. There are, of course, ways of specifying excision rules that would provide different incentives.
19. The situation in defense spending is analyzed in Congressional Budget Office, *Budgeting for Defense Inflation,* 1986.
20. CBO's average absolute error of inflation rates in the consumer price index over a one year forecast horizon is 1.5 percent; Congressional Budget Office, *The Economic and Budget Outlook: Fiscal Years 1986–1990,* February 1985, Appendix H.
21. This lack of discounting does not match public perceptions and market adjustments to budgets. Participants in financial markets, for example, give less credence to any promises of budgetary actions in the future. Indeed, casual evidence of public reactions to budget plans suggest they probably overreact, not allowing adequately for the length of time involved in program planning and spending decisions. Part of their discounting, however, reflects a judgment that Congress may override any decisions about the future before changes are ever realized. Thus they are discounting not only for the time value of money but also for the probability that the event may not occur.
22. Office of Management and Budget, "Special Analysis D: Federal Investment and Operating Outlays," *Special Analyses, Budget of the United States Government, Fiscal Year 1986,* 1985.
23. See Congressional Budget Office, "An Analysis of Selected Deficit Reduction Options Affecting the Elderly and Disabled," Staff Working Paper, March 1985.
24. For a discussion of the adverse effects of hiring freezes on new programs see David Leo Weimer, "Problems of Expedited Implementation: The Strategic Petroleum Reserve," *Journal of Public Policy,* Vol. 3, No. 2, May 1983, pp. 169–190.