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THE FEDERAL BUDGET AS AN INSTRUMENT FOR ANALYSIS, PLANNING, AND MANAGEMENT

Melvin Anshen

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SANTA MONICA • CALIFORNIA

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PREFACE

This Memorandum represents one chapter in a forthcoming book, Program Budgeting: Program Analysis and the Federal Budget, which is now being written by a group of RAND staff members and consultants. The study is sponsored by The RAND Corporation as a contribution to public welfare and national defense. Because of the potential interest and usefulness of this part of the work, and in order to make it available before publication of the book, it was felt desirable to issue this chapter as a RAND Memorandum.

The book will focus primarily on the major issues involved in determining specific national program goals and the analytical approach necessary to facilitate decision making on these issues. Its purpose is to help improve the understanding, and accelerate the application, of the principles of program budgeting.

The objectives in view are: (1) to make the budget a more useful and precise instrument for planning, appropriation, administration, and control within the Federal establishment; (2) to contribute to broader public understanding of the allocation and use of Federal funds; and (3) to facilitate economic analysis, forecasting, and planning in the private sector.

The chapter presented by this Memorandum is the first chapter of the book and introduces general information on the role of the budget, and compares government activity in this area with budgeting in the private sector. It outlines the major uses of the Federal budget, typical problems involved in allocating resources at the national level, characteristics of a useful budget structure, and some of the deficiencies in the present Federal budget.

SUMMARY

The budgetary process is a unique activity in the operating life of an organization. It is related to the complete administrative range from analysis through planning, to management and control. The first part of this Memorandum outlines the uses of the Federal budget and indicates some of the typical budget problems involved. The second part delineates the characteristics of a useful budget structure and points out some of the difficulties in the present Federal budget in light of these characteristics. The final part of the Memorandum indicates the general nature of the problems that would be involved in introducing a program budget into the Federal government at this time.

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I. INTRODUCTION

In the operating life of organizations the budgetary process is a unique activity. It is related to the complete administrative range from analysis through planning to management and control. In its end product, the budget, it summarizes (1) the problems to which analysis has been applied, (2) the analytic concepts and techniques brought to bear on those problems, (3) the information relevant to their solution, (4) the proposed -- ultimately, the determined -- decisions, and (5) the administrative structure through which performance of the approved budget will be executed, controlled, and appraised.

If, as many students of the managerial process assert, what management is all about is making and implementing decisions, then the budget is the single essential management tool. It organizes, influences, facilitates, and expresses management thought and management action. It must therefore be related to organizational objectives, policies, practices, and structure. Rationally designed, it contributes powerfully to the effective and efficient accomplishment of managerial tasks. Carelessly constructed or ill-coordinated with administrative requirements, it cannot fail to be a principal cause of bad decisions and weak execution.

These propositions are applicable equally to all types of organizations, whatever their character and purpose. Resources are rarely, probably never, equal to needs. It is the essence of decision making, therefore, to choose among alternative ends and to ration scarce means to their accomplishment. At this level of description, no significant distinction exists between profit and nonprofit organizations, or between private and public organizations. All require the ordering of goals, the analysis of their relative contributions to the great aims of the total undertaking, the development of plans, the measurement of alternative resource inputs and their relation to progress toward objectives, rational choice of feasible ends, allocation of means, monitoring of progress, and appraisal of results. The budget process is the activity through which this work is done. The budget is the instrument through which the process is made operational.

In the context of these observations, the purpose of this book is to examine the Federal budget of the United States as an instrument for planning resource allocations. The aim of the book is to be both critical and constructive. It will examine the design of the budget in the light of its actual and potential uses, and will identify the ways in which it fails to serve these needs effectively. Against this background, it will present a general set of proposals for improving the design that promises to be both effective and feasible. The heart of the proposals is the application in the non-defense parts of the Federal budget of a concept -- called the program budget -- that was installed in the Department of Defense in 1961.

II. USES OF THE FEDERAL BUDGET

The primary operational use of the Federal budget is as an instrument for aggregating and displaying annually the expenditure proposals of the executive branch as a basis for appropriation decisions by the Congress. While the budget presentation contains an estimate of income, developed from forecasts of the general level of economic activity and existing or proposed taxes, its more significant content in a managerial sense is its statement of expenditures in terms of amounts and objectives. A related purpose is to serve as the control medium through which spending decisions are administratively implemented and financial accountability is assured.

The same budget design now serves both the decision and implementation objectives. There is no compelling need to employ a common budget structure for these purposes, however, provided that the decision structure can be readily translated into the implementation structure by way of an appropriate crossover net. Thus, a revision of the budget submittal and decision structure would not require an accompanying reorganization of the executive departments. Indeed, there may be good reasons for revising the former without disturbing the latter.

The fundamental problem resolved through the budgetary process is the familiar one of distributing scarce resources -- as measured in money terms -- among a variety of competing claims. At this basic decision level, the task facing public officials, both executive and legislative, does not differ from the task facing corporate officers, or even individual citizens, who try to manage their means to serve their ends. In all these settings, budgeting is concerned with deciding on the allocation of scarce and reasonably well-defined inputs to attain objectives that range from well- to ill-defined. This involves three interrelated operations. First, it is necessary to determine the most efficient way to attain given objectives. Second, it is necessary to determine the optimal set of concurrent objectives. Finally, it is necessary to determine the optimal size of the total budget. The last decision lays down the ultimate bounding constraint that squeezes the allocation judgment.

A good budget system supports and informs judgment in making these determinations. It does this by providing information that is relevant to the required decisions. Relevancy may be defined by the following criteria: (1) aggregation of information in totals that illuminate meaningful decision alternatives and aid rational comparisons among them; (2) with respect to each alternative objective, identification and summation of all pertinent input requirements, both current and future; (3) organization of information in detail that facilitates efficiency measures of inpurts in relation to outputs, means in relation to ends, investment in relation to payback. (Such efficiency measures are often referred to as cost-effectiveness or cost-utility analysis.)

A good budget system does more than serve the needs of public officials, of course. The Federal budget is the prime source of information on the magnitude and direction of government spending. This information is essential for those in the private sector of our society who are concerned with understanding, predicting, and exploiting the economic significance of public expenditures. A host of business decisions are influenced by judgments about the present and future impact of public spending -- in the financial markets, in commitments on plant size and location, in product development, in research, in the exploration of international opportunities, and many others.

For all these uses, how budget information is organized for public decision making can illuminate or obscure its significance for private analysts. Beyond the obvious economic applications, we should also recognize that the effective performance of a democratic, enterprise society is greatly assisted by widespread understanding of how public decisions are made and what they mean. Here, again, a clear relationship of means to ends, inputs to outputs, is a primary requirement.

III. TYPICAL BUDGET PROBLEMS

The significance of these general observations can be suggested by a review of some typical non-defense budget problems. As an introduction to the discussion in later chapters, it will be helpful to note the variety and complexity of administrative issues that are raised even within the scope of a few illustrative problems. Present claims compete against each other, both relatively and absolutely. Present claims compete against future claims. Present investments may yield long-term benefits, although with no realizable payback in the early years. Ongoing activities and established clienteles compete with new activities and vaguely identified beneficiaries. Working through all these issues are the information requirements for analysis, planning, decision, implementation, and control.

Consider, as one example, the problem of budgeting for activities designed to alleviate poverty and rooted unemployment. The related social diseases of poverty and unemployment have been diagnosed as complex phenomena traceable to such varied causes as economic recession, technological change, obsolete skills, insufficient education, racial prejudice, immobility of labor, and inadequate supply of information on distant job opportunities. Economic and social analysts have recommended an equally varied assortment of remedial measures. Some Federal activities -- public works, aid to depressed areas, surplus food distribution, retraining in wanted skills, and many others -- are already in being, supported by present appropriations. Proposals lie on the table for larger commitments, as well as for new activities. Against these claims are arrayed, of course, not only the total mass of the non-defense discretionary budget (excluding interest on the debt, commitments under existing legislation to farmers, veterans, etc.), but also proposals for budget support to activities that aim at related economic and social problems, such as assistance for the improvement of mass transit facilities in choked metropolitan areas. Looming over all is some concept of total Federal budgetary capability within the revenue projections of the tax structure, the economics and politics

of the aggregate revenue-expenditure balance, the constraints of the financial cost of the national security commitment, and the claims of other Federal programs.

What are the significant budget questions in this problem structure? Consider the following:

- What is the present budget commitment to relevant ongoing activities?
- What incremental gains in positive contributions to problem resolution might be attributed to added budget commitment?
- What significant minimum or threshold budget levels would underwrite useful activity in problem areas currently untouched by ongoing programs?
- What feasible stepped-up rates of program activity can be identified?
- What budget costs should be associated with them?
- Can operationally meaningful differentiation be made between the effectiveness of various approaches to the elements of the total poverty and unemployment problem?
- If so, can such differentiation be related to dollar costs near- and long-term?

Questions of broader import are also pertinent.

- Are skill retraining efforts better or worse investments than public works?
- Better or worse than subsidies or other special incentives to attract new industry?
- Or, at an even more fundamental level, is a dollar invested in an attempt to rehabilitate a mature, technologically displaced, educationally handicapped, unemployed man a better commitment than a comparable dollar invested in supporting the educational and technical preparation of his son for employment in a different line of work in another part of the country?

The questions may look unreasonable, even unanswerable. But the fact is that they are implicitly answered in any budget decision in the defined problem area. The only significant issue is whether the

answer rests on intuition and guess, or on a budget system that presents relevant information so organized as to contribute to rational analysis, planning, and decision making. Even a partial and qualified contribution would be valuable, of course. As all managers know, most decisions are made in situations of partial ignorance and uncertainty. The critical factor is the extent to which information specifically organized around the decision requirements can be employed to limit the area of uncertainty and define its general characteristics. An important complication in this instance has been the fact that Federal activities related to the relief of poverty and unemployment are sponsored and administered by several executive departments (Labor; Commerce; Agriculture; Health, Education, and Welfare). Until the Office of Economic Opportunity was established, there was no machinery for coordinating these activities, or even, except in gross aggregates, for measuring the total investment. Finally, there was no analytical structure that would facilitate a rational study of cost-effectiveness results. The Office of Economic Opportunity is now charged with these responsibilities, and the creation of a comprehensive program budget by that agency would appear to be an essential first step.

Consider, as a second example, the problem of budgeting for Federal support of fundamental and early-stage applied research in a specific area of human disease. The following are among the unavoidable questions that demand explicit or implicit answer. Given some approximate ceiling to the total medical research share of the Federal budget, what proportion should be assigned to efforts to discover the causes and cure of this disease? Assuming that the research program will have value only if pursued continuously through an extended period of time, what are the potential second-, third-, and nth-year investments required to sustain a viable path of discovery? What related research activities, present or potential, can be identified and their level of expenditures balanced with the proposed new commitment? On a broader front, what are the research resources (human and physical, public and private, military and civilian) on which the proposed program will draw? Will the net effect of a substantial new research program in this area be little more than an inflation of ongoing research efforts, with

increments in one program supplied by decrements in another? And at still another level of analysis, what standards of performance can be established that will permit even crude measures of payback on the investment through time?

The responses to these questions, it should be noted, have significance not only for the executive and legislative branches of the Federal Government, but also for private research and educational institutions. These organizations are rationally compelled to coordinate their long-run activities with Federally-sponsored research within the context of a grand design for the extension of human knowledge, subject to the constraints of their own individual human and budget resources. In short, Federal budget decisions are interlinked with private budget decisions. Improvement in the Federal budgetary process will lead to improvement in the private budgetary process, with a consequent gain in the efficiency of the total allocation of a critically scarce resource among competing needs.

Consider, as a third example, the problem of making a meaningful summation of total foreign aid and development expenditures as a basis for (1) assessing the aggregate United States commitment, (2) analyzing the relative effectiveness of the component parts in achieving defined objectives, (3) coordinating country-by-country assistance programs, and possibly (4) appraising and amending the grand strategic design in terms of America's worldwide interests and goals. International assistance activities are funded in several executive departments. In some locations, as in AID, they are specifically identified as to magnitude and objective. In others, they are mingled with domestic programs and objectives (as, for example, in agricultural price support activities). Some programs are of a one-time character; others involve capital investments that will be brought to fruition through a term of years; still others are indeterminate in length, but for strategic reasons must be extended as quasi-guaranteed for a stipulated number of years. Many of the programs are significantly related to private investment overseas. Some involve contingent underwriting of private risk ventures through a variety of contractual or implicit guarantees.

Rational analysis, planning, and management of this country's total international security, developmental, and commercial effort would call for a budget structure in which the multitude of related programs are identified as to objectives and magnitudes. Little more than gross approximations can be attempted within the present budget design. Informed management performance is severely limited as a result of this structural deficiency. The handicap is directly experienced in the domain of public administration. It spreads by indirection through private business and the work of economic and policy analysts.

IV. CHARACTERISTICS OF A USEFUL BUDGET STRUCTURE

The characteristics of a Federal budget structure that would effectively serve public and private users of budget information can be identified against the background of these problems and the preceding general description of the budget's clientele and their responsibilities.

First, the budget design should facilitate rather precise measurement of the total money costs of accomplishing defined objectives. In the military budget, for example, this would mean a statement of the full costs of a proposed new missile system: research and development, investment and operation, submarines (if water based) and crews and weapons, special training and special bases, maintenance and repair, together with the necessary tools and parts. Moreover, a package of current costs will not suffice. The statement should project the total cost stream through forecastable time. Ideally, a budget formulated at the stage of the initial proposal to commit money to fund exploratory research should carry forward projections appropriately time-phased through operation of the proposed system as a going activity.

Second, the budget structure should facilitate the comparison of alternative ways to accomplish a given objective. A military example might be the comparison of the full time-phased costs of a submarine-based missile system with a comparable cost display for a land-based missile. A non-military example would be the comparison of the full time-phased costs of two approaches to the problem of relieving geographic pockets of idle resources: (1) by retraining workers and creating inducements for the in-migration of new industries; (2) by relocating workers at places where employment opportunities exist, with or without retraining.

Third, the budget presentation should clearly identify the future cost implications inherent in near-term financial commitments. Those who allocate scarce funds should be made aware of

the prospective expenditure stream and thereby helped to avoid entrapment in the familiar seduction of modest first-year costs.

Fourth, the budget design should facilitate comparison of cost inputs and achievement outputs when related segments of a single program are administered by different management units. An example might be hospital services under the direction of the Veterans' Administration versus hospital services under another jurisdiction.

Fifth, the budget design should delineate the objectives of discrete spending commitments in such terms that significant cost-effectiveness (cost-utility) analysis can be carried out. There are obvious limitations on our ability to define measureable goals, or even measureable progress toward such goals, in some areas of Federal expenditure. Nevertheless, the budget design should seek continually to expand the area of informed analysis and imaginatively explore concepts and techniques that help to convert qualitative into quantitative goals and common service into allocatable activities.

Sixth, the budget design should make it possible to aggregate related expenditures wherever they occur in the government's sprawling administrative structure. The Congress appropriates money for research in many departmental budgets, as it does for foreign aid. These separate appropriations are not readily brought together at present. But there is no reason why an effective budget drawn up to assist rational decision making should not identify such activities wherever they occur and permit their aggregation so that both legislators and private citizens can recognize the total size and the multiple locations of the identified commitment.

Seventh, a budget that effectively meets the foregoing criteria should go far toward serving another important need -- that of generating economic data on Federal inputs to the national economy by meaningful activity segments. This would help private analysts to understand and interpret the direction and influence of Federal spending, and thereby improve the efficiency of private investment through a more rational administration of commitments in relation

to present and future Federal programs. At the same time, others whose interest is in social performance would find a flow of information relevant to their work in defining and predicting problems and thereby organizing resources for their alleviation and solution.

V. DEFECTS IN THE PRESENT FEDERAL BUDGET STRUCTURE

The present Federal budget design is largely the product of a historical response to the need to safeguard the integrity of appropriations against careless, ill-informed, or maleficent administrators in the executive departments. It is an instrument for the control of spending. It was not designed to assist analysis, planning, and decision making, and it does not work well for that purpose. It is a controllers' budget, not a managers' budget.

The foregoing statement should not be read simply as a proposition of general criticism. The implementation of appropriation decisions without divergence, distortion, or deceit is an important element in the maintenance of democratic institutions. The people must control the public purse through the judgments of their elected representatives and the performance of their civil servants. This is the foundation of public confidence and trust.

But honest and faithful execution of appropriation decisions is not enough. What about the quality of those decisions whose undeviating performance has been assured? Is a democracy effectively administered if it does not clearly identify its objectives and its resources and rationally allocate scarce means to assure preferred ends? A budget appropriately designed to meet the requirements of a rational decision process will not, of course, automatically assure the making of rational decisions. But it can be a powerful influence in that direction. It can identify and factually illuminate the significant alternatives, and it can do this, with at least rough accuracy, in terms of costs as well as in terms of results. Furthermore, it can do this without weakening the important contribution of the budgetary instrument to financial responsibility.

To identify the existing nondefense budget, therefore, as one primarily designed to assure honesty in the executive departments is to cite one important characteristic of good budget structure, and equally to recognize the omission of another important characteristic -- its contribution to informed and rational performance of the

managerial function. The two characteristics are not mutually exclusive. Rather, they should be viewed as complementary.

If we direct our attention to the managerial potential of the present budget -- specifically to its employment as an instrument for analyzing, planning, deciding, controlling, and evaluating -- its defects become obvious. Because it is the product of a desire to assure financial responsibility within an executive department's structure that evolved haphazardly through the vagaries of history and politics, it is not aligned with the requirements of a rational decision process. It presents requests -- and consequent appropriations -- in terms of direct objects of expenditure, such as "personnel" or "vehicles." Rarely can these objects of expenditure be related in any meaningful way to specific administrative programs, even when these programs fall within the scope of a single executive department. When, as is often the case, related objectives are pursued in more than one department, only with the greatest difficulty and only in terms of the grossest aggregates can such activities be summed or compared. Probably even more important is the fact that the present budget does not project future cost estimates for current or proposed activities. One sees data only for three fiscal periods: last year (actual), this year (estimated), and next year (the budget). Thus, the projection lacks the dimensions needed for rational administrative decision.

The critical nature of this deficiency must not be lightly assessed. Business managers have long ago learned that they cannot make resource decisions in such an information vacuum. When a proposed new venture is being appraised, managers demand a comprehensive and detailed layout of all costs associated with the total commitment. They demand forward projection of the cost stream in the most realistic feasible terms. Lacking this, they are helpless to compare alternative investments, equally helpless to calculate the return on any single investment. Individual decisions that involve substantial financial burdens, such as the purchase of a house or an automobile, usually seek comparable

knowledge of total costs extended forward through the period of acquisition and operation or use. In neither case, of course, will the information ordinarily be thoroughly complete or precise. But the demand is for best approximations, periodically refreshed and improved through appraisal of performance against estimated targets. This kind of information should be available to the executive and legislative branches of the Federal Government as a basis for making reasoned expenditure proposals and appropriation decisions in the nondefense sector of the budget.

Without it the decisions taken lose in clarity and purpose. Responsible officials lack the information needed to (1) choose among alternative goals when available resources are insufficient to undertake the achievement of all goals concurrently, (2) measure the total immediate cost of activities designed to achieve any single goal, (3) identify currently the implicit future costs of present program decisions, (4) chart with confidence the probable future course of the expenditure side of the budget in total and significant detail, or (5) evaluate the efficiency and effectiveness of the performance of ongoing programs by comparing costs with achievements.

It is easy to cite these direct handicaps to management of the public resources. The indirect handicaps are less visible, but not less important in their influence on the quality of public administration. For example, one common result of the presentation in the budget of current expenditures for ongoing activities, without forward estimates of related costs, is heavy pressure to maintain established activities in which substantial costs have already been incurred, and equally to resist the initiation of new programs. The combination of the familiar economic influence of sunk costs with the equally familiar political influence of vested interests is likely to generate an almost irresistable pressure to maintain the status quo. Further, since population growth and the Parkinson syndrome are likely to push toward expansion of ongoing activities -- while counter pressures are

fueled only by sporadic economy drives that tend to founder when they meet democratic logrolling -- the perpetuation of established programs is the common experience. Farm price supports are a classic example of this unhappy situation, but by no means the only one that might be cited. The general effect can be, and often is, serious delay in responding to critical economic and social needs.

A second indirect result of the present budget structure is a lack of reasonable standards of efficiency and effectiveness in the use of resources. Lacking defined and time-phased objectives, it is difficult to be critical of administrative performance. To level a charge of waste or malperformance at the managers of a public program is, of course, one of the more popular pastimes of any administration's loyal opposition. But it is a rare experience to find such a charge documented by the kind of precise cost-effectiveness measures that are the common test of the quality of management performance in a well-run private organization. Those who take a professional view of management responsibility -- and, contrary to popular folklore, there are many public administrators who share this attitude -- are even more concerned about the absence of the kind of information that would enable a manager to assess the progress and quality of his own performance and, as appropriate, to initiate corrective action before outside criticism can even start.

Serious as these two indirect handicaps of a poor budget structure undoubtedly are, there is an even more important effect which disturbs many who study the role of government in our complex industrial society. This is the absence of stimulus to examine the possibilities and feasibilities of translating into actual performance the general philosophical proposition that a central responsibility of a democratic government is to provide or do those things people need but cannot supply effectively for themselves. Like any well-designed tool, a budget is more than an instrument for assisting in the accomplishment of predetermined tasks. It helps to extend, strengthen, and organize a manager's

mental reach, to support his ability to contemplate new tasks and to assess their feasibility and desirability in relation to alternatives. A good budget structure, in short, could contribute significantly, if indirectly, to the development of an environment in which those who control our political institutions could meaningfully appraise and debate the great objectives of the American society and our ability to attain them within a balanced assortment of public and private activities. Just as the computer has enormously enlarged our capacity to attack problems that in an earlier age could not even be defined, so a budget rationally designed for management use would open new dimensions of administrative potential. Experienced private managers in large corporations have seen this effect as they have improved their own decision-making instruments based on information organized for management use. The effect in the area of public administration would be comparable. It should, of course, be emphasized that a well-designed budget, like a high-powered computer, is a neutral tool. It will serve with equal effectiveness those who would shrink the scope of federal action and those who would expand it. A good budget has no politics.

The problems created by the present budget structure are not confined to the management of resources in the public domain. To a much greater extent than is commonly recognized, information reported through the Federal budgetary process serves important uses in private industry and in university and other nonprofit research centers. The information deficiencies of the present budget affect the performance of analytical, planning, and decision-making activities throughout our society.

With a Federal budget aggregating roughly one-sixth of the national income, the gross influence of the government's expenditures is, of course, substantial. The size of the budget and its surplus or deficit position are significant inputs to forecasts of the level of general economic activity. More subtle, but no less important, effects can be traced to the composition of the budget: the principal division between the defense and civilian sectors,

the commitments to international aid, farm price supports, space programs, research activities, education, transportation, housing, relief of the helpless and underprivileged, etc. These expenditure patterns can be strong clues to the character of the demand for products and services in both item and geographic detail. When such budget patterns are extended forward for several years their meaning may be even more significant and their use by private managers more important. Since long lead times are often involved in the translation of resource commitments into end product availability, knowledge of the probable approximate size of specific Federal programs three to five years in the future can serve to improve the quality of private investment decisions. The net result would be a significant advance in the total efficiency of the nation's economic performance as measured by the ratio of inputs to outputs. The planning horizons of private managers would be extended and the validity and operational confidence of business planning would be correspondingly strengthened.

Against this background one can trace a substantial, although not readily measured, loss in the quality of private economic performance to existing defects in the information yielded by the Federal budget.* This loss is experienced in misplaced or delayed investment of resources, in added uncertainties in private economic planning, and in a general lowering of the threshold of confidence on the part of private managers with respect to the rationality and quality of public administration.

Some comment is in order on two additional areas in which the existing Federal budget structure exerts a negative influence. The first of these is the analysis of economic performance as a basis for the development of policies and programs to encourage economic

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*See also "The Federal Budget as a Business Indicator" by David Novick and G. H. Fisher, Harvard Business Review (May-June 1960)

stability and growth. In the past several decades analysts have made important progress in adding to knowledge and understanding of key elements in the behavior of gross economic activity. Slower progress has been made, however, in enlarging understanding of the dynamic interrelationships among the segments of our complex system. This area of study includes both the interaction between the public and private sectors and the network of connections among the parts of the private economy. One of the tools that has been applied here, with only limited success, is input-output analysis, a technique for designing and manipulating a quantified grid of economic relationships. A principal impediment to the successful exploitation of this promising analytical instrument has been statistical deficiencies in both the private and public sectors -- notable a restricted supply of valid information on magnitudes of investment and procurement of specific resources in specific time periods. As in some aspects of our space exploration effort, this appears to be a situation in which science is ahead of engineering. A tool of great potential power is little used for operational purposes because we lack information of the quality and detail necessary to permit the translation of its apparent potential into practical application.

While redesign of the Federal nondefense budget structure in the manner proposed in this book would by no means resolve all the difficulties commonly met by economic analysts, it would contribute importantly to progress in the Federal portion of the public sector. Another hopeful result might be to encourage comparable progress in the organization of information for the state and local portions of the public sector. Still a third might be to stimulate and support efforts to refine and upgrade data for the private sector. In the long run, we might anticipate a valuable gain in understanding the dynamic behavior of the national (and international) economy, with consequent benefits for both private management and public policy.

Research on the social performance of the American economy has also been limited by information deficiencies originating in part in the Federal budget. We have only a partial understanding of the

relation between the problems associated with the growth of metropolitan areas and Federal spending for such objects as urban housing and mass transportation. Private as well as public response to ill-serviced needs are impeded, misdirected, or delayed as a result. The present rising concern with such issues as unemployment, urban and rural slums, the quality and content of education, and the occupations and health of retired persons or those displaced from regular employment reflects awareness of both major problems in the fabric of our society and the limited knowledge of the dynamics of their cause and cure. Whatever the character of the solutions that may evolve through responses to these difficult challenges, whether through private or public action, a Federal budget articulated through objective programs, with grouping of related activities and forward projections of funding requirements, can give significant help in formulating plans, appraising costs, and controlling performance against realistic standards.

VI. PROBLEMS OF A PROGRAM BUDGET

The principal recommendation of this book -- to introduce into the nondefense areas of the Federal Government the kind of program analysis that has been installed in the Department of Defense as an integral part of the budget structure -- is not a simple proposal for easy innovation. Many problems will have to be resolved in developing the design of the recommended budget programs. Many others will arise in the early phase of its operation. Some of these problems are conceptual in character, some are operational, while still others are related to political or bureaucratic considerations. The principal difficulties are described in summary form below. They are treated in greater detail throughout the following chapters, together with suggestions for their study and solution.

The initial conceptual problem that must be resolved in achieving even a preliminary blueprint of the grand design of a program budget is the identification of major programs. The central issue is, of course, nothing less than the definition of the ultimate objectives of the Federal Government as they are realized through operational decisions financed by appropriations. Set in this framework, the designation of a schedule of programs may be described as building a bridge between a matter of political philosophy (what is government for?) and the administrative function of assigning scarce resources among alternative governmental objectives. The unique function of a public budget is to implement the conclusions of a political philosophy through the assignment of resources to their accomplishment. The main advantage claimed for the program budget is that it promises to do this more effectively and more efficiently by (1) clearly defining the alternatives among which choices must be made, and (2) creating an information system that will assist in measuring costs in relation to accomplishments.

In the private sector of the economy the corporate officer is familiar with a parallel problem. A good information system should

be related to a firm's decision requirements. In fact, the best information systems are designed specifically to serve management's chosen decision pattern. The prime questions are: what decisions does management have to make in running the business, and what information does management need in order to make these decisions rationally? These are not easy questions, and good answers are developed only through time and flexible experimentation.

There is a dearth of satisfactory standards and ordered, relevant information on performance to be used in appraising efficiency in most areas of federal activity. In consequence, we have generally lacked a clear articulation of management choice. Experienced professional managers will readily see in this situation a more important category of efficiency. Not: are we doing this particular action economically? Rather: should we be doing this action at all, considering what other actions must be omitted if we devote resources to this one? These critical questions cannot be answered -- indeed, cannot even be asked -- until all activities are laid out in meaningful terms and groupings and the resources necessary to their accomplishment have been estimated through an extended period of time.

The first step in the design of a program budget for nondefense activities therefore must be a thorough research of the decision process in the Federal Government. This is a matter of concept and not of organization structure. We have already noted that the bureaucratic organization of the Federal establishment (the departments, agencies, offices, etc.) is largely the result of a historical response to political pressures and short-term expediencies. Except accidentally, it does not reflect a rational management decision process that is broadly related to the great ends of democratic government and specifically related to a schedule of alternative programs that express those great ends in terms that can be handled through the decision process. The question of whether a new program budget would be assisted in its operation through a changed bureaucratic structure is an interesting, but entirely

separate, issue that is not a necessary part of the present discussion.

Complex problems will be discovered in the course of the proposed study, since the ultimate product of the research should be, not a description of the decision process as it exists, but rather the delineation of the decision process as it rationally should be. Some of the most difficult matters will undoubtedly result from the fact that in a number of areas no clear objectives have ever been laid down. This undesirable condition has notoriously prevailed in the field of international aid and investment, but it can also be found in many domestic areas including, among others, agriculture, transportation, education, and unemployment.

A related conceptual problem will have to be dealt with concurrently. It is by no means obvious, in advance of careful study, whether an optimal program structure should be based on components of specific end objectives (for example, the accomplishment of certain land reclamation targets), on the principle of cost separation (identifying as a program any activity the costs of which can be readily segregated), on the separation of means and ends (is education a means or an end in a situation such as skill retraining courses for workers displaced by automation?), or on some artificially designed pattern that draws from all these, and other, classification criteria. While it is a basic argument of this book that the prime influence in program structure design should be the requirements of a rational decision process, the identification of those requirements is a large and difficult undertaking. It should be anticipated that initial concepts will have to be amended and adapted on the basis of operating experience in the years following the introduction of a program budget system. In this connection, it is useful to observe that private business organizations have become familiar with comparable problems and have typically made provision for periodic review and flexible adaptation of information systems in response to the changing needs of a dynamic decision process. Firms that have introduced computers

in their decision processes, for example, have found it desirable to make substantial changes in the information systems that feed and support the new decision potential opened up by computers.

With the evolution of some concept of a rational decision process will come the principal guidelines for a workable program system. A number of operational problems will promptly become visible. For example, certain broad activity categories that might appear to be rationally grouped for program budget purposes are presently carried on in more than one government department. International economic activities offer one illustration of this situation. Activities related to the development and protection of natural resources offer another. Support of education is a third. Techniques will have to be worked out for identifying such related expenditure clusters and for bringing them together for the budget decision. Since there may be persuasive reasons for not disturbing the existing patterns of administrative responsibility in the departments and agencies concerned, it will also be necessary to develop a translation grid that will facilitate the delegation of spending authority back to the responsible administrative units. This is no simple matter, and one should anticipate certain bureaucratic resistance. The threat of opposition is not limited to the public bureaucracy. Each administrative unit is likely to have developed its own clientele in the private sector (those served or in some way advantaged by the work of the public unit). Additional strength for direct and indirect resistance will be found among such client groups.

A second operational problem will arise in connection with the program budget's requirement that cost estimates be projected forward for a number of years in all cases where the cost stream is an essential ingredient of a rational decision in allocating resources. Something like five years might be taken as a reasonable general requirement. Legislators and public administrators have little experience in doing this. In the case of most large new activities, for example, the common practice has been to estimate and request funding for only first-year costs, with little

more than blue-sky projections for later time periods. This has been done, of course, not only in the interest of avoiding difficult analysis of future requirements, but also to take advantage of camel's nose tactics in gaining acceptance of proposals with relatively modest entrance expenses. Full exposure of such matters is a significant part of the case for the program budget. Rational choice in assigning such a scarce resource as budget dollars demands knowledge of more than going-in costs. But the implementation of this requirement will have to cope with the existing lack of experience in the development of such cost projections, in addition to the bureaucratic opposition from those who prefer to avoid showing high long-term price tags for their recommended projects.

Closely related to the foregoing will be the need to develop staff expertise in cost estimating and analysis in the executive departments, the Bureau of the Budget, and, probably, the staffs of certain Congressional committees. The possibility of using a program budget as an effective instrument for analysis, planning, and control will depend directly on the quality of the data fed into the budget operation. Again, the parallel to the administrative machinery involved in making a capital budgeting system work in private industry is worth noting. As those who have been involved in this situation know, only rigorous and persistent review of budget estimates against the test of actual performance will compel the necessary purification of cost data without which the budget exercise is more game than management performance.

A third operational problem with strong bureaucratic overtones can be anticipated in the need to bring meaning and reason to the aggregation of program components presently implemented in different organizational units. The activation of a program budget is more than an exercise in simple arithmetic. The character, composition, and magnitude of a program oriented toward a defined objective must be determined through coordinated analysis and planning. The Bureau of the Budget would, of course, have an important contribution to make in bringing this about. But the

Bureau has a complex role to play in the Federal establishment. Its leadership has not commonly found it feasible to attempt to usurp the normal administrative responsibilities of line management in the executive departments. It may suggest, encourage, and assist in the coordinating process that a working program budget would require. But this would leave important problems of accommodation to administrators in the departments. How they might accomplish this, in the context of considerations of historic associations, status, prestige, client relationships, Congressional relationships, and other pressures, is not likely to be the result of simple rules and working procedures. We are face to face here with the common organization difficulty that the goals of a total enterprise are not necessarily consistent with the goals of individual units within the enterprise, or with the goals of individual administrators.

In the face of this problem there is no reason to be overwhelmingly discouraged, however. Many private organizations have tackled it successfully.

As indicated earlier, this recitation of problems that will probably accompany the formulation and installation of a program budget in the nondefense sectors of the Federal Government is illustrative and incomplete. They are brought to the reader's attention at the outset of this book simply to assure a proper balance of potential gain and potential effort in the presentation of our fundamental recommendation. They are treated more fully in subsequent chapters, especially Chapter 12 (Steiner).

VII. INFORMATION AND DECISION IN MANAGEMENT PERFORMANCE

One final comment is in order about the relation of the budget proposal to the quality and efficiency of management performance. As a tool for analysis the program budget represents a considerable advance over the existing budget structure. It should be recognized, however, that its virtues are those of a tool. It will broaden the reach of those charged with decision-making responsibility. It will sharpen their grasp of the critical elements in the resource allocation problems that confront them. It will illuminate questions of choice among alternatives. It will facilitate measures of performance. However, it will not in itself provide answers to problems or make decisions for managers. It will not displace management judgment, wisdom, or experience. It will not determine objectives. It will not judge performance. In short, it will illuminate major decision issues and help managers to manage better.

In doing this it will also contribute to management performance, and to economic and social analysis, in the private sector of the economy. But again its assistance will be in the form of providing more and better information for administrative and analytical applications. The size of the positive contribution will be determined, not by the information array made available through the program budget, but by the imagination and skill of those who discover how to use the information to enlarge and illuminate the problems they already confront and to define new problems that the present information flow has failed to identify.