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JOINT COMMITTEE PRINT

THE ECONOMICS OF FEDERAL SUBSIDY PROGRAMS

A COMPENDIUM OF PAPERS

SUBMITTED TO THE

JOINT ECONOMIC COMMITTEE
CONGRESS OF THE UNITED STATES

PART 1—General Study Papers

MAY 8, 1972

Printed for the use of the Joint Economic Committee

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LETTERS OF TRANSMITTAL

MAY 5, 1972.

To the Members of the Joint Economic Committee:

Transmitted herewith for the use of the Members of the Joint Economic Committee and other Members of Congress is the first part of a compendium of papers entitled, "The Economics of Federal Subsidy Programs," submitted to the Joint Economic Committee.

The views expressed in these papers do not necessarily represent the views of members of the Committee or the Committee staff. They represent studies of a number of subsidy programs, which it is hoped will provide a focus for further hearings and public debate.

WILLIAM PROXMIRE,
Chairman, Joint Economic Committee.

MAY 4, 1972.

Hon. WILLIAM PROXMIRE, *Chairman, Joint Economic Committee, Congress of the United States, Washington, D.C.*

DEAR MR. CHAIRMAN: Transmitted herewith is the first part of a series of papers entitled "The Economics of Federal Subsidy Programs: A Compendium of Papers."

The Joint Economic Committee published a staff study in January of this year, entitled "The Economics of Federal Subsidy Programs," which identified the overall size and cost of Federal subsidies for fiscal 1970. The Committee also invited some 40 experts to contribute papers to a compendium that would compliment the staff study by evaluating particular aspects of the subsidy system. This first part contains papers that provide an overview of the Federal subsidy system and explain the different financial devices used to provide subsidies. In the parts to follow, the papers will address themselves to program categories such as transportation and housing or, in some cases, to specific subsidy programs.

The Committee is indebted to these authors for their excellent contributions which, in conjunction with the study prepared by the staff, should stimulate widespread discussion among economists, policymakers, and the general public on the Federal susbidy system. It is hoped that, by focusing attention on the subsidy system, this study will contribute substantially to improvements in public policy and the efficient management of public funds.

Mr. Jerry J. Jasinowski of the Committee staff is responsible for planning and compiling this compendium with suggestions of other members of the staff. He was assisted in research and editorial work by Douglas Lee and in administrative and secretarial work by Beverly Park.

The papers contained herein should be interpreted as representing only the opinions of their authors, and not necessarily reflective of the views of Committee members or staff.

Sincerely yours,

JOHN R. STARK,
Executive Director, Joint Economic Committee.

CONTENTS

Page

Letters of Transmittal III

COMPENDIUM ARTICLES

Subsidies as an Instrument for Achieving Public Economy Goals
By George F. Break 1
The Control of Special Benefit Programs
By Hendrik S. Houthakker 7
Individual Income Tax Erosion by Income Classes
By Joseph A. Pechman *and* Benjamin A. Okner 13
Subsidization by Pricing in the Regulated Industries
By Richard A. Posner 41
The Economic Theory of Subsidy Payments
By Carl S. Shoup 55
Tax Subsidies as a Device for Implementing Government Policy: A Comparison With Direct Government Expenditures
By Stanley S. Surrey 74
Subsidies in Federal Credit Programs
By Murray L. Weidenbaum 106
The Grants Economy as Regulator of the Exchange Economy
By Martin Pfaff *and* Anita B. Pfaff 120

COMPENDIUM AUTHORS

[Alphabetical listing]

Break, George F 1
Houthakker, Hendrik S 7
Pechman, Joseph A., and Benjamin A. Okner 13
Posner, Richard A 41
Shoup, Carl S 55
Surrey, Stanley S 74
Weidenbaum, Murray L 106
Pfaff, Martin, and Anita B. Pfaff 120

SUBSIDIES AS AN INSTRUMENT FOR ACHIEVING PUBLIC ECONOMY GOALS

By George F. Break *

One remarkable attribute of Government subsidies is the capacity of the very words themselves to conjure up marvelously diverse images in different minds. To most economists the subsidy is a useful fiscal instrument whose major purpose is to improve the private sector's allocation of resources among their alternative uses. To many laymen, on the other hand, subsidies are an elusive and worrisome phenomenon, frequently hidden from the general view and often suspected of being used more for private gain than for the public good. These widely divergent viewpoints appear to come mainly from differing perceptions of the efficiency with which private markets function. To the laissez-faire enthusiast there is little or no legitimate role for subsidies since, as he sees the world, free markets do the best job of organizing production to satisfy present and future consumer demands. Others, worried about the lack of strong competitive pressures for efficiency in concentrated markets and perceiving pervasive externalities, both beneficial and harmful, which are not taken into account by private business, actively support extensive Government intervention, through subsidies and other means, in the operation of private markets.

Given their inherently controversial nature, subsidies are a prime subject for periodic evaluations in depth by Government policymakers. This the Joint Economic Committee is presently undertaking, and the purpose of this paper is to provide a brief introduction to their study by comparing subsidies with alternative fiscal instruments, by discussing the different economic objectives that subsidies may be used to achieve, and by describing in general terms the particular difficulties likely to be encountered in the evaluation of different subsidy programs.

Fiscal Goals and Instruments

Systematic analysis of public finance goals and instruments and of the interrelationships among them is a comparatively recent import into this country from Europe. The work of the first two Nobel Laureates in Economics, Ragnar Frisch and Jan Tinbergen,[1] pioneered the development of an extremely useful framework for thinking about practical policy problems. The difficulty has always been in making a

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[1] See Ragnar Frisch, *Price-Wage-Tax-Subsidy Policies as Instruments in Maintaining Optimal Employment* (Oslo, 1953); Jan Tinbergen, *On the Theory of Economic Policy* (Amsterdam, 1952), and *Economic Policy: Principles and Design* (Amsterdam, 1956); Bent Hansen. *The Economic Theory of Fiscal Policy* (Stockholm, 1955, and London, 1958); and Leif Johansen, *Public Economics* (Oslo, 1962–64, and Chicago, 1965). For a good, concise discussion of the theoretical framework developed by these authors, see Carl S. Shoup, *Public Finance* (Chicago: Aldine Publishing Co., 1969), Chapter 19.

precise separation of causes and effects in this complex area of analysis, and methodological refinements are gradually clarifying the picture.

A goal is simply a value, or range of values, of some economic variable that the society wishes to attain, and an instrument is a variable with values which can be set precisely by Government officials so as to achieve different goals. For example, the rate at which an excise subsidy is paid, or an excise tax levied, is a fiscal instrument that may be used to change the allocation of resources in favor of subsidized activities or away from taxed activities. Unlike the amount of the subsidy or tax, the rate is not affected either by economic developments in general or by changes made in other public finance instruments.[2] It is the rate and not the amount of the subsidy, therefore, that constitutes the instrument under the control of policymakers.

Compared to other public finance instruments, subsidy programs have two distinguishing characteristics. The first, as already noted, is that subsidies are used *primarily* to alter the use of resources in the private sector of the economy. It is important to stress, however, that almost any other instrument that one can think of will also change the allocation of resources, though most of the others will do so more or less incidentally in the process of being used to attain other primary goals. Subsidies, in short, are not a unique means of reallocating resources, and their use for that purpose should, therefore, always be evaluated in relation to alternative instruments possessing similar powers. The second distinguishing characteristic of subsidies is that they seek to achieve their goals by operating through the private market system by offering rewards, either in money or in kind, to different groups as inducements to change their economic activities. Subsidies, therefore, have a budgetary impact over and above the mere cost of administering the programs in question. Legal constraints and penalties, though also enacted primarily in order to alter private uses of resources, do so, in contrast, without the use of financial incentives, and hence have no budgetary impact other than their administrative costs.

Subsidy programs differ widely in the complexity of the policy instruments involved. At one end of the spectrum lie the explicit, single-rate excise subsidies or tax incentives that offer the recipient so much Government money, or so much tax relief, for each unit of a certain product purchased or for each dollar spent for a specified purpose. Next come the multidimensional credit subsidies, such as direct Government loans offered to specifically qualified borrowers at designated interest rates, terms to maturity, and loan-to-value ratios. These explicit loan terms, of course, are not the true subsidy instruments, which are, instead, the implicit differentials between the credit terms received by Government borrowers and the terms available to them on private loans. At the opposite end of the spectrum are Government sales of goods and services at "below-market" prices and Government purchases of goods and services at "above-market" prices. The problem with subsidized purchases and sales, of course, is to identify the appropriate reference price, without which the subsidy instrument cannot be identified. Is that price to be the explicitly recorded governmental unit costs, or such costs plus some implicit "profit" margin, or the actual market prices of "similar" private

[2] In technical terms the instrument should be both exogenous (not affected by economic changes) and autonomous (not affected by changes in other fiscal instruments). See Shoup, *op. cit.*, p. 468.

goods? Difficult as such specifications may be, they are an essential prerequisite to the computation of program costs and also to the evaluation of results.

The great versatility of subsidies may be seen by considering the different economic goals whose achievement may be furthered by such devices:

Goal	*Subsidy program*
High output and employment	Wage subsidies; employment tax credits.
Economic growth	Tuition subsidies; investment tax credits.
Optimal distribution of income	Food, housing, medical insurance, and other consumer necessity subsidies. Charitable contribution tax deductions or credits.
Efficient use of resources	Educational loan subsidies. Subsidies to producers or purchasers of pollution-control equipment.
International balance-of-payments equilibrium.	Research subsidies; transportation subsidies; export credit subsidies.

The one major economic goal that would appear to be least approachable via the subsidy route is price level stability. Even here, however, one could conceivably make a case for tackling cost-push inflation by the use of consumer necessity subsidies designed to reduce the perceived rate of increase in consumer prices and hence to defuse those inflationary expectations that help to keep the whole process going.

Versatile as they may be, subsidies are primarily associated, and properly so, with the achievement of economic efficiency—that is, with the reallocation of resources whenever the private market mechanism, because of imperfect information, barriers to entry, and external benefits and costs, fails to reach the Nation's maximum attainable social and economic goals. The basic role of subsidies, then, is both specific and important. How well they perform their allotted tasks, however, and whether they do so more effectively than other instruments, are particularly difficult questions for both technicians and policymakers to answer.

Economic Evaluation of Subsidies

The general theoretical framework that should be used to evaluate subsidies is exactly the same as that used to evaluate any Government program. Given a specific economic goal attainable by means of subsidies, what is required is a series of benefit-cost analyses, both for the proposed subsidies themselves and for all alternative fiscal instruments capable of achieving the same goal, to serve as a basis for the choice of the best policy instrument. Or if program benefits are too intangible to be quantified, a series of cost-effectiveness analyses can be used instead. In either case, two analytical requirements are stressed by the goals-instruments framework discussed in the preceding section. The first, already noted, is that there should be a systematic comparison of all alternative instruments. It is not enough, in other words, simply to show that the proposed subsidy program yields an excess of benefits over costs. To become the chosen instrument the subsidy should show either the greatest potential benefits for a given cost or the least potential costs required to achieve the objective.

The second analytical requirement is that explicit attention be paid to interactions among different goals and instruments. The point is

that the pursuit of some particular goal by the enactment of a specific subsidy program can be expected to generate various side effects that will move the society farther away from, or closer to, certain of its other economic goals. While movements toward other economic goals can simply be counted as subsidy-program benefits, movements in the opposite direction are more troublesome. In some cases, of course, such movements could be counteracted by suitable adjustments in other fiscal instruments. In such instances, evaluation proceeds, not by means of benefit-cost analyses of alternative single instruments, but rather by analyses of alternative packages of instruments; the minor components of each package being defined so as to offset as many of the undesirable fiscal side effects of the major instrument in the package as possible. In other cases, however, when feasible adjustments in nonsubsidy instruments are insufficient to deal with all of the undesirable fiscal externalities, the latter must be counted as subsidy-program costs and tradeoff analyses made of simultaneous movements toward some goals but away from others.

While there is nothing unusual about the general theoretical framework to be used to evaluate subsidies, there are some special problems that are likely to crop up in the application of that framework. Whereas for most Government spending programs it is only the benefits that are elusive and difficult to quantify, for subsidy programs it is frequently both benefits and costs. As already noted, even the first step in the analysis—i.e., precise specification of the subsidy instrument being used—often proves to be very difficult, and any ambiguities that enter at that early stage will necessarily carry over to later parts of the evaluation. Even more troublesome, however, is the critical dependence of subsidies for their effectiveness on appropriate reactions by their recipients. In technical terms, the crucial task in the evaluation of subsidies is the quantitative estimation of the relevant price elasticities of demand and supply.

One of the important steps in any congressional review of subsidy programs, therefore, should be to separate them into three broad categories:

1. Subsidies that can be said, with reasonable confidence, to have significant effects on private uses of resources;
2. Subsidies that can be said, with reasonable confidence, to have very little impact on the private use of resources; and
3. Subsidies whose effectiveness can be estimated only within wide margins of error.

The hopeful dream of any government policy-maker, particularly if he has a conservative bent, is to find some private group that can be induced to undertake some socially desirable project by the offer of a relatively small amount of government assistance. On the other hand, his nightmare is likely to be one of granting substantial subsidies to private groups for doing what they would have done anyway. In such cases, of course, the subsidies would have no impact on economic efficiency at all, but would simply generate a redistribution of income from taxpayers to subsidy recipients. Even if such an effect happened to be beneficial to the public interest, it would be so by pure chance. Nor is this the worst conceivable situation. Subsidies that are not carefully analyzed, or that continue to exist through periods of sharply changing economic conditions, may induce private sector reactions that make things worse rather than better.

Having identified as precisely as possible both the subsidy instrument and its probable impact on the allocation of resources in the private sector of the economy, the technical analyst's final step is to measure the distributional effects of the subsidy program. These can be of two kinds. The more important are likely to be the changes in private real incomes brought about by the shifts in product and factor prices resulting from the reallocation of resources induced by the subsidy. These changes mean that different consumers, workers, landlords, stockholders, and interest recipients are benefited or burdened in ways that are thoroughly familiar to any student of the shifting and incidence of taxation. Some subsidy benefits may be intangible in nature, as in the case of pollution abatement programs, and the incidence of these gains should be estimated as well. Others involve a transfer of money from taxpayers to subsidy recipients. The relative importance of these transfers will vary considerably from program to program, but in general will tend to vary inversely with program effectiveness. In any case, their incidence should be explicitly considered.

The final stage in the evaluation of subsidies is reserved for the policy-maker and is the delicate one of assessing the available quantitative evidence, weighing the importance of various uncertainties, and comparing the incomparable. Occult as the art of policy-making may be, its practice may be greatly improved, as the preceding discussion suggests, by the development of analytic data systems that place the program under review in a broad context that considers both alternative ways of achieving the same ends and the program's effects on other social and economic goals.

Conclusions

Whether the present Federal subsidy system is a fiscal monstrosity, a paragon of fiscal virtue, or simply a diverse mixture of good and bad programs is a question well worth asking. By doing so at this point, Chairman Proxmire and the Subcommittee on Priorities and Economy in Government are performing a highly valuable public service. The task being proposed is not an easy one; in part, because of the difficulty of identifying, measuring, and evaluating subsidies, and in part because subsidy advocates have both a natural propensity and a remarkable ability to disguise the amounts of money involved in their programs. However, an in-depth study of the kind proposed by this subcommittee could launch the Congress into one of the most fundamental undertakings of the whole budgetary process—that of identifying those activities that the Federal Government can best perform itself, and those that it should encourage either private enterprise or State and local governments to take in hand. As a high official of the Office of Management and Budget, William Niskanen, said recently,

> . . . little purpose is served, I believe, in using scarce analytic resources to identify how to perform an inappropriate role marginally better.[3]

[3] William A. Niskanen, Improving U.S. Budget Choices, in the Tax Foundation's *Tax Review* (Nov. 1971), p. 44.

There is every reason, then, to accord to subsidies a prominent place in the periodic zero base budgetary reviews of existing programs that experts have been advocating for some time. Indeed, given the dismal prospects for a significant Federal fiscal dividend sometime in the next few years, the need for subsidy review is urgent and immediate. Can Congress ask the reluctant taxpayer to shoulder new and additional taxes, as present budgetary realities strongly suggest it may soon have to do, when it cannot assure him that the money he already provides is being spent efficiently on appropriate Federal functions?

Several guidelines for budgetary review of subsidy programs are suggested by the preceding discussion:

1. Identify the subsidy instrument being used as precisely as possible. In many cases it will be necessary to use an interval estimate rather than a single measure.

2. Estimate quantitatively the effects of that instrument on the use of resources in the private sector of the economy.

3. Evaluate the desirability of these Federal effects, given the capabilities of private enterprises and State and local governments and the extent to which they can be expected to exploit these capabilities on their own.

4. Phase out all subsidy instruments that have either no significant effects or inappropriate ones.

5. Evaluate all remaining subsidy instruments in relation to their efficiency in accomplishing their goals, their effectiveness as compared with alternative measures, and the importance and direction of their side effects.

THE CONTROL OF SPECIAL BENEFIT PROGRAMS

By HENDRIK S. HOUTHAKKER*

Some explanation is needed as to why I have chosen to depart from the general title of this compendium and to talk about special benefit programs rather than subsidies. The reason is simply that special benefit programs can probably be defined with somewhat greater accuracy than subsidies. In the staff study a very thorough attempt has beeen made to define subsidies and to list the subsidy programs of the Federal Government; no doubt similar attempts will be made in the other compendium papers. My own starting point was also an attempt to define subsidies. But in the course of doing so, I came to the conclusion that the concept of a subsidy is just too elusive. There is probably general agreement that farm price supports are in the nature of a subsidy program, and that the administration of justice is not. Indeed most students of the subject would probably include the majority of the subsidy programs listed in the staff study, though they might be inclined to add a few or delete others.

It is because I shall be mostly concerned with the control of these programs that I have chosen to follow a different, though a largely overlapping, definition. Anyone who goes through the listing of subsidies prepared by the staff will be struck not only by the large number, but also by their extreme diversity, both as regards nature and as regards amounts of money involved. On one and the same page (p. 203), we find a program with which we are all familiar and which costs about $1.5 billion per year, and another one costing only about $8 million, the mere discovery of which is something of an achievement. It seems clear that we cannot hope to control such different programs by the same mechanism. The problems of the postal service have been before Congress many times and undoubtedly could bear further scrutiny, but it is not obvious that treating these problems under the rubric of a subsidy program will lead to much progress. On the other hand, the very small ship-scrapping program unearthed in the staff study will probably not attract much attention except as part of a more comprehensive study. Similarly, it may well be useful to talk about rural electrification in the context of this study but I rather doubt that much progress will be made here with the tax treatment of capital gains, whose classification as a subsidy program is in any case open to question.

Without denying that there may be a subsidy element common to a large variety of programs, both large and small, I nevertheless feel that it is more useful to concentrate for the time being on programs of more restricted scope. The wide dispersion of the effects of the postal subsidy, or of the tax treatment of capital gains and owner-occupied housing, really puts them in quite a different category from the preference to domestic ship scrappers, or rural electrification, or even a large

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program such as agricultural price supports. That is why I am confining my discussion to "special benefit programs," by which are meant Government programs that modify the operation of the market mechanism or of the tax laws for limited sectors of the economy or limited groups of the population. To qualify as a special benefit program, a program should have a direct effect on no more than a given percentage of the GNP or of the population, but the indirect effect (including the cost to taxpayers and/or consumers) may be widely dispersed. How high this limiting percentage should be is a question that will be further discussed below.

The category of special benefit programs thus defined is narrower in some respects, and wider in other respects, than the category of subsidy programs. A special benefit program need not involve a subsidy in any of the forms recognized in the staff study, except if the concept of benefits in kind is interpreted very widely.[1] The Davis-Bacon Act, for instance, can be regarded as a special benefit program for the construction unions since it greatly reinforces their control over wages. It is not listed as a subsidy program in the staff study, though it could have been so listed without doing much violence to the principles applied to other cases. Similarly, the Jones Act, which reserves coastal shipping to U.S. carriers, does not involve any overt transfer of income, yet its effects are similar in some respects to a subsidy for coastal shipping paid by the shippers and/or receivers of commodities that are or could be transported by this means. Many other examples could be given. On the other hand, the tax treatment of owner-occupied housing, which constitutes a subsidy according to the staff study, should not be included among the special benefit programs, since about half of the housing is owner-occupied. Here I should perhaps reiterate what Senator Proxmire has said about the subsidy study as a whole, mainly that to label a program as a subsidy is not to say that it is good or bad; the same applies to special benefit programs.

Other papers in this compendium will no doubt deal at length with the advantages and disadvantages of special benefit programs, or of subsidy programs. I shall therefore be brief in stating the reasons why special benefit programs in my opinion should be brought under stricter control than has been the case so far, and why the achievement of such control will be difficult.

First of all, to the extent that special benefit programs involve Government expenditures they are merely another instance of the difficulty of evaluating Government expenditure programs generally. All such programs receive a considerable degree of scrutiny by the Congress and by the administration, but that has not prevented a certain amount of waste. Congress is not always adequately equipped to evaluate expenditure programs; the device of holding hearings is far from being a complete substitute for objective evaluation. All too often hearings are dominated by the special interests who expect to benefit from them rather than by those who have to pay for them; thus representatives of nonfarm sectors are rarely heard by the congressional committees on agriculture. The Joint Economic Committee itself has done yeoman's work in attempting to rectify this defect, primarily through education, but much remains to be done.

[1] At some point the staff study does appear to give this wide interpretation to benefits in kind; thus the subsidy to domestic ship scrappers mentioned earlier is classified as such.

Within the administration the Office of Management and Budget does an outstanding professional job of evaluation of present and proposed expenditure programs, but its recommendations do not always carry the day. A recent case in point is the establishment of the National Railroad Passenger Corporation (AMTRAK), where Congress and the administration went ahead with a program that may well cost several hundred million dollars per year without any adequate analysis of its costs and benefits.

Another reason why special benefit programs need particular attention is the inertia in our political system, which tends to preserve such programs long after their initial justification (if indeed there was one) has disappeared. These programs tend to create vested interests, whose anguished cries of ruin at the slightest suggestion of reform are usually loud enough to drown out the voice of reason. Even if a program is widely conceded to be unsatisfactory, Congress is likely to let sleeping dogs lie by extending it unchanged rather than reforming it; the recent extension of the Sugar Act is one example. The laxity of our rules concerning political contributions may well aggravate the problem of inertia.

A third reason why special benefit programs need new forms of control is that they are especially subject to logrolling. It is my impression, not based on careful analysis, that the traditional role of the Rivers and Harbors bill in this process has increasingly been taken over by special benefit programs. As a result we are gradually moving toward a situation where everybody is subsidizing everybody else. Most economists will condemn this trend because it is not likely to promote the efficient allocation of scarce resources, but it should be realized that from the political point of view it may have positive aspects. As we all know from birthdays and Christmas Eves, the exchange of gifts, even of rather useless gifts, frequently helps to stimulate good fellowship and a sense of community. One could be more sanguine about this trend, however, if it did not contain an element of self-deception, in the sense that the beneficiaries of any particular program feel they are getting something for nothing.[2]

The three difficulties just mentioned are serious but not insuperable. Within the democratic process they can be overcome primarily by better information and analysis. The JEC subsidy study itself is a useful move in this direction, but it needs to be put on a more formal and permanent basis. I therefore propose the creation of a Joint Committee on Special Benefit Programs, whose task it would be to report to Congress on the effects of selected special benefit programs according to standards discussed in a moment.

As a joint committee it would not have legislative responsibility, which would remain with the present committees, thus avoiding jurisdictional disputes. However, its reports would not merely be academic studies, but would be required by law in certain cases. The legislation setting up the proposed committee would itself designate certain programs as being within the purview of the committee, and subsequently other programs could be added under the

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[2] This same phenomenon appears in the case of another program that should probably not be classified as either a subsidy program or a special benefit program; namely, revenue sharing. It is understandable that State and local officials would like to have their financial worries taken care of by the Federal Government, but it is not equally clear why their constituents, who are also Federal taxpayers, would consent to this shift, which transmits the control over expenditures to more remote decision points. This does not mean, of course, that the division of financial responsibilities between Federal, State, and local governments should necessarily remain the same forever.

legislation establishing these programs themselves. Thus if an old program were extended or a new one introduced, the relevant legislation would direct the Joint Committee on Special Benefit programs to report to Congress before a certain date. The joint committee's reports, however, would not be binding on Congress and would derive their authority primarily from the quality of the analyses contained in them.

In some respects the Joint Committee on Special Benefit programs would be similar to the Joint Committee on Internal Revenue Taxation, which provides the House Ways and Means Committee and the Senate Finance Committee with professional analyses of revenue proposals. The most important difference, apart from the subject matter, would be that the proposed joint committee would not work for any particular House or Senate committee. The membership of the Joint Committee on Special Benefit programs would therefore be particularly important; it should include, *ex officio*, the chairmen of the respective committees on Appropriations, Government Operations, as well as on the Ways and Means and Finance committees. The chairman of the proposed joint committee, however, should not be the chairman of any one of the committees mentioned, though he might be chairman of the Joint Economic Committee. In fact, if the establishment of a new joint committee turns out to be too difficult, a start might be made by having a subcommittee of the Joint Economic Committee perform the same functions temporarily. The reports issued by the joint committee would involve the following:

1. They would identify the direct beneficiaries of the program in question. In most cases this will be fairly straightforward: thus under the Oil Import program the direct beneficiaries are the refiners who receive tickets to import crude. Under the Agricultural Conservation program, the direct beneficiaries are the farmers who receive subsidies for applying lime and other practices. The reports would classify the direct beneficiaries according to income size, location, and other characteristics. In addition, the reports would estimate the benefits obtained by beneficiaries, both gross and net. This distinction, which is also made in the staff study, can be illustrated from the case of a price-supported crop. The gross benefit to the farmer is the difference between the support price and the market price multiplied by the size of the crop. The net benefit would take into account the changes in inputs, and in nonsupported outputs, that result from price support programs. Thus farmers generally find it profitable to use more fertilizer as the price of a crop goes up, and the cost of the fertilizer is one of the items differentiating gross from net benefits. The reports would also determine whether the net benefits received would be taxable, and to what extent they are actually reported on tax returns, so that the direct benefits can be considered both before and after tax.

2. Even more important, and more difficult, is the identification of indirect beneficiaries. In many programs the direct beneficiaries serve only as a pass-through, and in some cases the direct

beneficiaries may not receive anything of value at all.[3] In many special benefit programs the indirect effects are much larger than the direct effects. The oil import program, for instance, serves not merely as a subsidy program for refiners (who may, in fact, pass on some of the benefits to consumers), but in conjunction with market demand prorationing it is also essential in keeping the domestic price of crude oil above the world price. The Interstate Highway program (which I would not necessarily include among special benefit programs), is strongly supported by highway builders, who have generally been lukewarm at best about toll roads. The calculation of indirect benefits is going to take hard work, but it is necessary to understand why special benefit programs enjoy so much support.

3. The direct costs of a special benefit program are relatively easy to determine if it involves a subsidy but somewhat harder if it raises prices to consumers. As with direct benefits, it would be useful to know not only the total direct cost but also the distribution by income and region (readily available for the personal income tax, the principal source of Federal subsidy funds).

4. The indirect costs can vary greatly in nature and magnitude, and frequently even a simple listing with only crude orders of magnitude will be revealing. An evaluation of the total impact of the various agricultural programs, for instance, would involve, difficult judgments about labor mobility, patterns of location, imports and exports, and a host of other considerations. For one special benefit program where a fairly full evaluation of direct and indirect costs and benefits has been made (the oil import program), it was necessary to go deeply into the security of our energy supplies, which in turn depends on economic, political, and geographical factors. What this means is that the Joint Committee would need a sizable and highly qualified professional staff, even though it would no doubt draw on outside help as well.

5. On the basis of these four factual and analytical studies the Joint Committee would make an evaluation of the program under consideration. In particular it would consider:

a. Whether the program does in fact achieve the goals laid down in the original legislation, whether or not these goals are still appropriate.

b. Whether the direct and indirect costs of the program are commensurate with the direct and indirect benefits; more specifically, how many dollars of cost are required to obtain $1 of benefit.

c. Whether there are better ways of achieving the original goals of the program, or of providing the same net benefits at lower costs.

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[3] Personal experience has provided me with a fragrant case in point. Some years ago I bought a farm in Vermont which had not been in commercial operation for several years prior to my purchase. I became a member of the local soil conservation district, and was told that after a certain lapse of time I would be eligible for a government subsidy of about $400 on the construction of what is technically known as a "wildlife pond". In view of the recommendation to surround the pond with barbed wire it was apparently meant for the birds, but that is another matter. It turned out, however, that the subsidy would be available only if the pond were dug by an approved contractor, and that (at least at that time) there was only one contractor in that category. The approved contractor wanted about $2,500 for construction of the pond and related work, although a nonapproved contractor from another part of Vermont said he could do it for about $1,000. The subsidy would therefore in effect have gone to the contractor, and the property owner would have no incentive to build the pond.

d. Whether the redistribution of income occasioned by the program are generally from low incomes to high incomes or in the opposite direction.

e. Whether a particular program is consistent with other programs (for instance, programs to increase agricultural productivity may be inconsistent with programs to curtail output), and if not, how better consistency can be attained.

f. Whether the original goals of the program are still appropriate, and, if not, how the program could be terminated without unduly disrupting the industries or population groups affected.

A few words should finally be said about the order of priority in which special benefit programs would be evaluated by the proposed joint committee. In the beginning, it was argued that for a program to be considered a special benefit program it should not have a direct effect on more than a given percentage of the GNP or the population. Obviously, the higher the percentage, the more programs will be included, and the larger the constituency of each additional program will be. One strategy would be to start with a low cutoff percentage, thus keeping down the agenda of the committee and hopefully the opposition to reform. Another advantage of this approach is that the committee and its staff can gain some useful experience in the evaluation of special benefit programs. The obvious disadvantage is that evaluation of the programs considered under this cutoff may not make the headlines, and thus deprive the committee of much-needed support from the general public. A compromise solution would be to set a moderate cutoff percentage (say 1 or 2 percent of the GNP or the population) and initially, work only on selected programs. Depending on the reaction of Congress as a whole (and since this is primarily an educational effort the results may be slow in coming), the evaluation procedures can then be modified or extended. I believe that the creation of a separate body for the control of special benefit programs will soon be recognized as necessary for good government.

INDIVIDUAL INCOME TAX EROSION BY INCOME CLASSES

By Joseph A. Pechman *and* Benjamin A. Okner*

Over a decade ago, one of us made rough estimates of the erosion of the Federal individual income tax caused by the exclusions, deductions, and exemptions which are not essential for effective income taxation.[1] The major conclusion of that study was that the eroding features of the 1954 tax law reduced the yield of the individual income tax by about one-third, and that a comprehensive income tax could yield the same revenue with rates that were on the average one-third lower than the rates then in effect. The situation today is not very different.

The past estimates were built up from national totals of the various eroding features, without making any allowance for the possibility that individual taxpayers often benefit from more than one special provision or that the removal of all the special provisions at one time would push taxpayers into higher tax brackets. It was impossible to take into account any interaction among the special provisions because tax statistics were available only for broad income classes and did not provide any information about the characteristics of individual taxpayers. With the advent of the computer, it is now possible to make calculations of the tax base (under almost any definition of taxable income) on the basis of individual records for samples of taxpayers and to aggregate the results to produce national totals. The purpose of this paper is to describe the methods we have used to create a file of income recipients which permits us to make such calculations at great speed and with a high degree of accuracy, and to estimate the effect of the eroding features of the tax law on the distribution of taxable income and the yield of the individual income tax at calendar year 1972 income levels.[2] A major feature of these new estimates is that the effects of the erosion can be estimated by income classes as well as in the aggregate.

The basic file we used for these purposes combines information on 30,000 families and single persons included in the 1967 Survey of Economic Opportunity (SEO) conducted by the U.S. Census Bureau for the Office of Economic Opportunity and a file containing the information from 90,000 Federal individual income tax returns filed for the year 1966. This MERGE file contains data for low-income SEO families who are not in the tax filing population, as well as the

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The views presented in this paper are those of the authors and not necessarily those of the officers, trustees, or other staff members of the Brookings Institution. All programing and computer operations described in the paper were performed at the Brookings Social Science Computation Center. Ralph W. Tryon and Stephen W. Kidd were responsible for the computer programing and we gratefully acknowledge their efforts in our behalf.

[1] Joseph A. Pechman, "Erosion of the Individual Income Tax," *National Tax Journal*, Vol. 10 (March 1957), pp. 1–25, and "What Would a Comprehensive Individual Income Tax Yield?" in *Tax Revision Compendium*, Compendium of Papers Submitted to the House Committee on Ways and Means (1959), Vol. 1, pp. 251–81.

[2] All estimates in the study are confined only to first-order effects. We make no attempt to take account of possible induced behavioral changes that might alter the before-tax sources or amounts of income received by families.

more complete—and, we believe, more accurate—income tax information for higher income individuals. In addition, the income information in the MERGE file has been corrected for nonreporting and underreporting, so that—with the appropriate weights applied to the sample units—the file accounts for the total income estimated to have been received in the United States in 1966. All of our analyses are presented in terms of families rather than tax returns and the estimates for 1972 are based on projections of individual income sources from the 1966 base.

Creating the MERGE Data File [3]

Since the SEO income reporting units are a sample of the entire U.S. population and the returns in the Tax file represent only the tax-filing population, we based the final MERGE file on the demographic information for the families [4] in the SEO file. But we substituted the income data in the Tax file for the corresponding information in the SEO file to take advantage of the superior income reporting on tax returns (including the information on capital gains that is excluded from the SEO-Census income concept). This was done first by estimating (on the basis of reported SEO information) the kind of tax return or returns that would have been filed by each family and, then for tax-filers, by matching each SEO tax unit with a tax return selected from the Tax file.

The ideal method of matching the SEO data with the tax data would have been to obtain the tax information directly from the Internal Revenue Service. But this was not practical because neither the Census Bureau nor the Internal Revenue Service permits others to use their files, even for statistical purposes. In place of an exact one-to-one match, a less satisfactory—but feasible—means of simulating a match was developed. In effect, we randomly selected from the Tax file a return or returns similar to the SEO return and then substituted the income data in the tax record for the information in the SEO record. Since close to 30,000 matches had to be made, the selection and linking of returns in the SEO and Tax files was performed on a computer.[5]

For most families, the final MERGE file contains the demographic data and information on receipts of nontaxable income from the SEO file plus taxable income figures from the return or returns assigned to it from the Tax file. For SEO units deemed to be nonfilers, the MERGE file includes no tax return information. Since there are very few high-income units in the SEO file, the upper tail of the Tax file (returns with incomes above $30,000) was substituted in total for the SEO file. For this group, which represents less than 2 percent of the

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[3] The MERGE file was created as part of a research project on the distribution of tax burdens by income classes, which is being financed by a grant from the Office of Economic Opportunity to the Brookings Institution. For a detailed description of the methods described in this section, see Benjamin A. Okner, "Constructing a New Data Base From Existing Microdata Sets: The 1966 MERGE File," *Annals of Economic and Social Measurement*, Vol. 1 (June 1972).

[4] In this paper, the term "families" refers to both unrelated individuals (one person families) and the conventional Census family consisting of two or more persons, related by blood, marriage, or adoption.

[5] The characteristics used to link the two files were (1) marital status, (2) age of head of the unit, (3) number of dependents, (4) pattern of income, and (5) major and minor sources of income. The basic rule was to match an SEO unit with a tax unit having the same characteristics and major source income within 2 percent of the major source income reported in the SEO.

entire population, the MERGE file does not contain any SEO demographic data.[6]

After substituting tax return data for the SEO income data, the total income accounted for by units in the MERGE file amounted to 95 percent of the income computed for 1966. The next step in creating the MERGE file involved adjusting the SEO and tax file income data to correspond with national aggregates. The aggregates for wages and salaries were very close, but reported farm proprietors' income amounted to only 43 percent of the expected amount, and there were less serious, but significant, discrepancies between the expected and reported amounts of interest, rent, and transfer payments. Some of the discrepancies were due to the partial coverage of the Census money income concept which was used in the field survey; the remainder was due to nonreporting and underreporting of income by the survey respondents.

For income components with discrepancies due to underreporting, the MERGE file data were adjusted to the national aggregates on the assumption that the underreporting was not related to other characteristics of the survey unit. A single ratio was therefore applied to the reported incomes of all units to increase them to the aggregate amounts. In the case of nonreporting, we imputed missing amounts stochastically to MERGE file units based on various other characteristics of the survey units.

In addition to the adjustments for underreporting and nonreporting, several imputations were made to add information to the MERGE file which was not available—because it was not collected—in either the SEO or the tax files. These included imputed rent on owner-occupied homes, employer supplements to wage and salary income, tax-exempt interest on State and local bonds, and accrued gains on assets.[7]

Even after substituting tax return data for the income reported by the SEO respondents, money income in the MERGE file totaled only $486 billion, or about $37 billion less than the amount expected. Final adjustments were made to correct for this underreporting and nonreporting of income which raised the median family income from its initial level of $6,608 to $7,453 after correction.

In table 1 we show the share of money income received by each fifth of the families, when they are ranked from lowest to highest, before and after the income adjustments.[8] Before correction, the lowest fifth of the families had incomes under $2,762 and received

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[6] The data for estimating the income to be accounted for in the file were obtained from the Bureau Economic Analysis personal income accounts, individual income tax information from the Internal Revenue Service, and other Government records, which were adjusted—where necessary—to take account of differences in income concept and of population covered. For a detailed description of how the income figures were derived, see Benjamin A. Okner, "Adjusted Family Income: Concept and Derivation," Technical Working Paper II on the Distribution of Federal, State, and Local Taxes (rev., Brookings Institution, 1972; processed), which is available on request.

[7] Imputed rent was allocated on the basis of the equity in owner-occupied homes reported by respondents. Wage supplements were based on the occupational, industrial, and wage characteristics reported by the survey units. State-local bond interest was based on the distribution of State-local bond ownership from the Federal Reserve Board's 1963 Survey of Financial Characteristics of Consumers (Dorothy S. Projector and Gertrude S. Weiss, *Survey of Financial Characteristics of Consumers* [Board of Governors of the Federal Reserve System, 1966]). Accrued asset gains were based largely on realized capital gains and property income reported on tax returns. Details concerning these imputations are reported in Benjamin A. Okner, "The Imputation of Missing Income Information," Technical Working Paper III on the Distribution of Federal, State, and Local Taxes (rev., Brookings Institution, 1972; processed), which is available on request.

[8] This table is based on the Census money income concept because it is the most comprehensive one that is available from the SEO file before adjustment. However, we have retained all the detailed income components in the MERGE file for maximum flexibility. Thus, other researchers are free to define income to suit their own particular needs.

4.1 percent of total income. The highest fifth of the families had incomes of $10,982 or more and they received 42.7 percent of the total. After adjustment, the poorest fifth of the families had incomes under $3,261 and received 3.4 percent of the total; the highest fifth moved up to $12,500 and received 45.1 percent of total income.

TABLE 1.—COMPARISON OF SHARES OF MONEY INCOME RECEIVED BY EACH 5TH OF FAMILIES BEFORE AND AFTER ADJUSTMENT FOR NONREPORTING AND UNDERREPORTING OF INCOME, 1966[1]

Families ranked from lowest to highest income	Before adjustment		After adjustment	
	Income range	Percent of income received	Income range	Percent of income received
Lowest 5th	Under $2,762	4.1	Under $3,261	3.4
2d 5th	$2,762 to $5,381	10.8	$3,261 to $6,057	10.7
Middle 5th	$5,381 to $7,852	17.5	$6,057 to $8,747	17.0
4th 5th	$7,852 to $10,982	24.9	$8,747 to $12,500	23.8
Highest 5th	$10,982 and over	42.7	$12,500 and over	45.1
Top 5 percent	$16,933 and over	16.0	$20,227 and over	19.1
Top 1 percent	$33,333 and over	4.8	$44,792 and over	6.8

[1] The income concept used is "money income" as defined by the U.S. Bureau of the Census. It includes money factor income and transfer payments and excludes all capital gains.

Although the upward shift can be seen all along the income distribution, the effect is most pronounced among those at the very top. Before adjustment, the top 5 percent included families with incomes of $16,933 and over and they received 16 percent of total money income. After adjustment, the top 5 percent included families with incomes of $20,227 and over and this group received 19.1 percent of the total money income. The share of the total received by the top 1 percent of all families increased from 4.8 percent before to 6.8 percent after adjustment. This large change in the relative distribution of income mainly reflects the addition of high-income family units which were omitted from the original SEO population.

Rationale of the Erosion Calculations

To determine the extent of erosion, we begin with a comprehensive definition of income which provides the "norm" against which the existing personal income tax can be assessed.[9] We use a concept which corresponds as closely as possible to an economic concept of income, i.e., consumption plus tax payments plus (or minus) the net increase (or decrease) in the value of assets during the year. The modifications we make in this definition are dictated largely by practical administrative considerations or by historical precedents which need not (or could not) be broken for this purpose: First, capital gains would be included in income when realized or when transferred to others through gift or bequest; second, gifts and inheritances would be excluded from income; third, we assume that a separate corporation tax is retained, and that all dividends (but not undistributed profits) are included in income; and, fourth, employer contributions to private health and pension plans would not be considered current income to the employee.

[9] For an analysis of the meaning and significance of comprehensive income taxation, both pro and con, see Boris I. Bittker, Charles O. Galvin, R. A. Musgrave, and Joseph A. Pechman, *A Comprehensive Income Tax Base? A Debate* (Federal Tax Press, 1968). See also Richard Goode, *The Individual Income Tax* (Brookings Institution, 1964), Chaps. VI–VIII; and Joseph A. Pechman, *Federal Tax Policy* (rev. ed., Brookings Institution, 1971), pp. 67–104.

The first of these modifications is made because it is probably impractical to include capital gains in income until they are realized or transferred. The second and third accept the present practice of separating estate and gift taxation and corporation income taxation from individual income taxation. The fourth is dictated by the fact that taxation of employer contributions for health plans and pensions involves difficult practical problems that would require basic revisions in the Nation's private pension structure.

A tax base which closely approximates this modified definition of economic income would involve the following revisions of the present Federal individual income tax law: treatment as ordinary income of all realized capital gains (or losses) and of gains transferred by gift or bequest; elimination of the tax exemption for interest from State and local government bonds; limitation of depletion allowances to cost depletion; taxation of interest on the current-year increment in the cash surrender value of life insurance policies; inclusion of net imputed rent in taxable income and elimination of the deductions for real property taxes and mortgage interest; taxation of transfer payments as ordinary income; elimination of most itemized deductions; elimination of the standard deduction (but not the low-income allowance); elimination of the special exemptions for the aged and blind and the retirement income tax credit; and elimination of the dividend exclusion. In addition we eliminate the rate advantages (but not the mechanics) of income splitting for married couples and the maximum tax on earned income.

We have prepared estimates of the additional yield that would be obtained from this comprehensive income tax at 1972 income levels using the 1972 tax rates and exemptions and a flat $1,300 standard deduction.[10] This additional yield is a measure of the value of the "tax expenditures"—subsidies to particular groups or for selected activities on the tax rather than the expenditure side of the Federal budget—implicit in the present Federal individual income tax.[11] This may be considered a source of revenue to finance high priority public programs. Alternatively, the additional yield of the revised tax base under the current rates might be regarded as a reserve which could be used to reduce tax rates throughout the income scale. Accordingly, estimates are given below of alternative rate schedules that would produce the same yield as the tax liabilities projected under present law for 1972.

The rationale for the major revisions which are incorporated in our comprehensive income tax is as follows.

Capital gains.—Under present law, taxpayers include half their realized net long-term gains in adjusted gross income, and the tax on these gains is limited to a maximum of 25 percent (35 percent for long-term gains of more than $50,000).[12] Preferential treatment for such income has been justified on two grounds: first, full taxation of capital gains accrued over a long period of time in the year of realization would be inequitable; and, second, taxation of gains at the

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[10] We do not include the revenue effect of the new child-care provision adopted under the Revenue Act of 1971.

[11] Tax expenditure is a more comprehensive concept than tax erosion since it includes some items—e.g., deductions for medical expenses and for child-care outlays by poor families with working spouses—which are regarded by most people as appropriate provisions in a personal income tax. For a discussion of the concept of tax expenditures, see Stanley S. Surrey, "Federal Income Tax Reform: The Varied Approaches Necessary to Replace Tax Expenditures with Direct Governmental Assistance," *Harvard Law Review*, Vol. 84 (December 1970), pp. 352–408.

[12] In addition, capital gains are subject to the minimum tax on preference income under provisions of the Tax Reform Act of 1969, which may increase the effective rate to 36.5 percent.

ordinary income tax rates would discourage sales or other transfers of assets. The problem of bunching of capital gains in the year of realization can be handled by an averaging system, and the disincentive to transfer assets would be greatly moderated by taxing unrealized capital gains on assets transferred by gift or death and allowing full offsets and carryovers for capital losses against both capital gains and ordinary income. Moreover, full inclusion of capital gains in the tax base would permit a very substantial reduction in the top bracket marginal rates, which would keep the tax rates on capital gains at moderate levels.[13]

State and local bond interest.—Complete exemption is now accorded interest received on State and local government bonds. In recent years, as their revenue needs have increased, State and local governments have had to appeal to taxpayers in lower income brackets to market their securities. The response has been a sharp rise in interest rates, with the result that the benefits of the tax exemption to very wealthy taxpayers have increased while the benefits of the exemption to State and local governments have been eroded. The major impediment to the taxation of interest on these securities has been the fear that the increased interest costs would be too burdensome for the States and local governments. This problem can be eliminated, however, by substituting for the tax exemption a subsidy for interest payments on State-local securities.[14]

Depletion allowances.—The depletion allowance on oil and gas was reduced from 27½ percent to 22 percent in the Tax Reform Act of 1969. Nevertheless, the percentage depletion allowances are still generous and persons receiving income from oil, gas, and other mineral properties also benefit from immediate writeoffs for exploration and development expenses. These preferences have been justified by the representatives of these industries on national defense grounds and on the grounds that there are special risks involved in locating and developing mineral resources. Economists have generally concluded that the generous provisions lead to overinvestment in the preferred industries and hence tend to result in a serious misallocation of resources.[15]

Interest on life insurance savings.—The tax preference accorded to savings invested by individuals in life insurance results from the fact that interest accumulated on policy reserves is not taxable to the policyholder, while the insurance proceeds are not taxable to the beneficiaries after the death of the insured. The omission of this type of income from the tax base can hardly be justified when other types of property income (dividends, interest, rents) are subject to tax. The income on life insurance savings could be taxed by including in adjusted gross income the portion of the annual increases in the cash surrender value of life insurance policies that reflect interest earned on past savings.[16]

Imputed rent on owner-occupied homes.—Home-owners receive favorable tax treatment in two respects: (1) the value of the stream of services produced by the investment in the home—which is

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[13] For a discussion of the issues in capital gains taxation, see Martin David, *Alternative Approaches to Capital Gains Taxation* (Brookings Institution, 1968).

[14] See David J. Ott and Allan H. Meltzer, *Federal Tax Treatment of State and Local Securities* (Brookings Institution, 1963).

[15] See Susan R. Agria, "Special Tax Treatment of Mineral Industries," in *The Taxation of Income From Capital*, Arnold C. Harberger and Martin J. Bailey (eds.) (Brookings Institution, 1969), pp. 77–122.

[16] See Goode, *The Individual Income Tax*, pp. 130–139.

analogous to a stream of dividends or interest on stocks and bonds—is not included in income; and (2) mortgage interest and property tax payments are deductible in computing taxable income. The compliance and administrative problems of taxing the imputed rental income of owner-occupied homes are not easy. Yet this exclusion, along with the deductions for interest and property taxes, impair the equity of the income tax to a substantial degree.[17] Ideally, the gross imputed rental income of owner-occupied homes should be taken into account in a comprehensive definition of income,[18] and mortgage interest and property taxes should be regarded as "business" expenses of home ownership rather than as personal deductions.

Transfer payments.—Transfer payments are not taxable mainly on the grounds that most of the recipients would not be subject to tax even if such payments were included in the tax base. However, not all transfer payments are received by the poor; and some recipients are frequently much better off than their neighbors who cannot exclude any portion of their income in computing their tax liabilities. It would be better to include the transfer payments fully in income and to allow for ability-to-pay through the personal exemptions. If the exemptions are considered too low, it would be more equitable to discontinue the exclusions for transfer payments and to raise the exemptions or the low-income allowance.[19]

Deductions.—There are few strict criteria by which the personal deductions can be judged. It is clear, however, that the deductions now allowed under the Federal income tax are much too generous. Our calculations allow itemized deductions only for State income taxes, medical expenses in excess of 5 percent of income, charitable contributions in excess of 3 percent of income, interest up to the amount of property income reported by the individual on his tax return, child-care expenses, casualty losses, and the miscellaneous itemized deductions (which consist primarily of unreimbursed expenses of employees and alimony).[20] Since these revisions would eliminate most of the itemized deductions, we also limit the standard deduction to a flat $1,300 (the level of the low-income allowance which will be applicable in 1972 and later years under the Revenue Act of 1971).

Special exemptions for the aged and the blind and the retirement income credit.—Taxpayers over age 65 and the blind receive an additional personal exemption and the elderly may receive a 15 percent tax credit on retirement income up to a maximum of $1,524 ($2,286 on joint returns with only one earner and $3,048 with two earners). The major objection to these provisions for the aged is that they give the largest tax advantage to those with the highest incomes and discriminate against those who continue to work. Again, with adequate personal exemptions, there is no need for the additional blindness or age exemptions or for the retirement income credit. The revenue gained could be used to good advantage to raise social security benefits for

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[17] See Henry J. Aaron, "Income Taxes and Housing," *American Economic Review*, Vol. 60 (Dec. 1970), pp. 789–806.

[18] For a discussion of the alternative methods of taxing imputed rent, see Goode, *The Individual Income Tax*, pp. 120–129.

[19] See *ibid.*, pp. 102–115. The transfer payments we include in our comprehensive tax base are: social security and railroad retirement; public assistance; workmen's compensation; unemployment insurance; and veterans disability compensation.

[20] For a detailed discussion of the rationale of these revisions see Pechman, *Federal Tax Policy*, pp. 78–86.

all aged or handicapped persons and to increase the personal exemptions, if necessary.[21]

Dividend exclusion.—The dividend exclusion of $100 is a vestige of the tax reform of 1954, which introduced both a 4-percent credit and an exclusion of $50 ($100 on joint returns) for dividends to mitigate the so-called double taxation of dividends. In 1964, the credit was reduced to 2 percent but the exclusion was increased to $100 ($200 for joint returns). In 1965 the credit was eliminated. If the additional tax on dividends resulting from the imposition of the corporation and individual income taxes is regarded as undesirable, it is widely agreed that the present exclusion does not adequately solve the problem. It would be better to eliminate the exclusion and to tackle the problem of double taxation directly; or to use whatever revenues may be available to moderate the tax burden on dividends by reductions in the general corporate tax rate.[22]

Income splitting.—Income splitting for tax purposes between husbands and wives was adopted in the United States because of the historical accident that eight States had community property laws, which treated income as if divided equally between husband and wife. The Congress universalized income splitting in 1948 in an effort to restore geographic tax equality and to prevent wholesale disruption of local property laws and procedures for the purpose of obtaining the benefits of income splitting. In 1951, half the advantage of income splitting was given to persons who were defined as "heads of households;" and the Tax Reform Act of 1969 reduced the tax rates of single persons in the interest of moderating the tax discrimination against them.

The practical effect of income splitting is to reduce tax liabilities in the middle and higher income classes by very large amounts and to produce large differences in the tax burden of single persons and married couples, which are difficult to rationalize on theoretical grounds. It would be possible to differentiate among taxpayer units, if desired, by varying the personal exemptions with the size of income as well as the number of persons in the units (with both a minimum and a maximum). This procedure could be used to achieve almost any degree of differentiation among families while avoiding most of the problems and anomalies produced by income splitting.[23]

The rate advantages of income splitting can be eliminated easily without restoring the old inequities between residents of community property and noncommunity property States. It would be necessary to have two rate schedules, one for single persons and the other for married couples with brackets half as wide as the brackets in the

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[21] Efforts were made during the Kennedy and Johnson administrations to substitute a generous tax credit for the extra exemption for the aged and the retirement income credit, but these efforts failed. For a discussion of these issues, see *Tax Reform Studies and Proposals, U.S. Treasury Department*, Joint Publication of the House Committee on Ways and Means and the Senate Committee on Finance, 91 Cong., 1st sess. (1969), part 2, pp. 231–36.

[22] The pros and cons of the controversy over double taxation of dividends have been discussed at length in the public finance literature. See, for example, Richard Goode, *The Corporation Income Tax* (Wiley, 1951), and Daniel M. Holland, *The Income-Tax Burden on Stockholders.* (Princeton University Press for the National Bureau of Economic Research, 1958).

[23] See Joseph A. Pechman, "Income Splitting," in *Tax Revision Compendium*, vol. 1, pp. 473-86; Harold M. Groves, *Federal Tax Treatment of the Family* (Brookings Institution, 1963).

single person schedule.[24] Married couples would continue to have the privilege of filing either joint or separate returns, but they would be permitted to split their incomes only if they file jointly.

Accelerated depreciation.—Prior to 1954, the cost of real estate and other depreciable property was usually written off using the "straight-line method" which involves a uniform amount of depreciation each year during an asset's useful life. Accelerated depreciation—i.e., depreciation writeoffs which concentrate a large part of the asset cost during the early years of the asset's life—was first authorized in 1954 to spur new capital investment and thereby increase the rate of economic growth. In recent years, however, many individuals have used accelerated depreciation for great financial reward (without adding much, if anything, to capital investment), especially in connection with real estate transactions. The abuse occurs as a result of the full deduction for depreciation at ordinary tax rates and subsequent treatment of gains on sales of depreciated property at preferential capital gains rates. Largely because of this abuse, the Congress has curtailed—but not fully eliminated—the conversion of accelerated depreciation into capital gains in recent years.

Maximum tax.—The 50 percent maximum marginal tax rate on earned income was enacted in the Tax Reform Act of 1969. The maximum tax was included in the act to provide tax relief for business executives and other earnings recipients who might otherwise be subject to marginal tax rates as high as 70 percent. Obviously, this provision—like many others—singles out recipients of certain types of income for preferential treatment while ignoring the fact that broadening the tax base would permit substantial reductions in all tax rates.

One measure of the effect of these eroding features is how they affect the effective rate of tax paid at various income levels. When the Federal tax actually paid is related to adjusted gross income, modified for the items listed above, we find that the tax is a relatively low percentage of income at all income levels. It rises from an effective rate of less than 2 percent of income below $5,000 to 9 percent at $10,000 and to a maximum of 32 percent at income levels of $1 million and above (table 2). Moreover, the average effective rate does not exceed 25 percent until income levels of $100,000 and over. This is very different from the impression one would get from examining marginal rate schedules that rise from 14 to 70 percent.

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[24] In practice, married couples filing joint returns would use the single persons' schedule without splitting; only married couples filing separate returns would use the schedule with the split brackets. This actually would be a substantial simplification in comparison with present law which contains *four* rate schedules—one for married persons filing separate returns, a second for single persons, a third for heads-of-households, and a fourth for married persons filing joint returns. Our calculations assume that the rate reductions for single persons enacted in 1951 and 1969 would be removed along with the elimination of the rate advantages f income splitting for married couples.

TABLE 2.—DISTRIBUTION OF EXPANDED ADJUSTED GROSS INCOME [1] AND FEDERAL INDIVIDUAL INCOME TAX BY INCOME CLASSES, 1972 [2]

[Income classes in thousands; other dollar amounts in millions]

Expanded AGI class [1]	Expanded AGI	Federal individual income tax [3]	
		Amount	Percent of expanded AGI
Under $3	$7,968	$36	0.5
$3 to $5	27,610	475	1.7
$5 to $10	145,033	7,655	5.3
$10 to $15	216,483	18,843	8.7
$15 to $20	180,340	19,354	10.7
$20 to $25	109,886	13,301	12.1
$25 to $50	142,941	20,707	14.5
$50 to $100	41,178	9,672	23.5
$100 to $500	31,355	9,241	29.5
$500 to $1,000	4,360	1,324	30.4
$1,000 and over	7,109	2,279	32.1
All classes	914,262	102,888	11.3

[1] Expanded adjusted gross income is adjusted gross income as defined in the Internal Revenue Code modified to include the income items listed in table 3 below.

[2] Based on projections of individual income sources from 1966 levels. Assumes personal income of $925,000,000,000 in 1972.

[2] Revenue Act of 1971 applied to 1972 incomes. The tac liability figures differ from those published in the U.S. Budget because of different estimating procedures, particularly those related to capital gains.

Note: Details may not add to totals because of rounding.

The Comprehensive Tax Base

We estimate that, in 1972, total adjusted gross income (AGI) of all family units in the United States will amount to $776 billion under present law.[25] Under the comprehensive income definition, adjusted gross income would rise to $914 billion, an increase of $138 billion or 18 percent (table 3). Taxable income will rise from $478 billion to $644 billion, an increase of $166 billion or 28 percent. This is more than the increase in adjusted gross income because, in addition to the increase in taxable income that results from additions to AGI, taxable income increases because personal exemptions and deductions are partially eliminated. The largest single increase in adjusted gross income comes from the addition of transfer payments, but capital gains (both realized and accrued at gift or death) and homeowners' preferences also add very large amounts. Since transfer payments are heavily concentrated at the lower end of the income distribution, their contribution to taxable income is considerably less than their contribution to AGI. After transfers, the next largest addition to taxable income comes from revision of deductions; taxation of imputed rent [26] and capital gains each add another $26 to $29 billion to taxable income; and, altogether, the remaining items increase taxable income by about $14 billion.

[25] These estimates are based on the provisions of the Revenue Act of 1971 as they will apply to calendar year 1972.

[26] The $28.7 billion increase in taxable income from homeowners' preferences includes the effects of disallowing itemized deductions for mortgage interest and real estate taxes as well as taxing net imputed rent.

TABLE 3.—COMPARISON BETWEEN ADJUSTED GROSS INCOME, TAXABLE INCOME, AND TAX LIABILITY UNDER PRESENT LAW AND UNDER A COMPREHENSIVE INCOME TAX, 1972 INCOME LEVELS

[In millions]

Item	Adjusted gross income [1]	Taxable income [1]	Tax liability
Present law [2]	$776,146	$478,230	$102,888
Elimination of rate advantages of income splitting [3]			21,565
Plus:			
½ realized capital gains	17,149	16,491	9,334
Constructive realization of gain on gifts and bequests	10,403	9,544	4,374
Tax-exempt State and local bond interest	1,916	1,892	1,193
Other preference income [4]	1,235	1,089	560
Dividend exclusion	2,200	1,924	673
Interest on life insurance policies	9,917	9,093	2,685
Homeowners' preferences [5]	15,545	28,700	9,642
Transfer payments	79,750	55,075	13,074
Personal exemptions and deductions [6]		42,165	14,158
Equals: Comprehensive income tax	914,262	644,205	180,145

[1] The increase in taxable income is greater than the change in adjusted gross income because the elimination of certain exemptions and deductions increases taxable income but does not affect adjusted gross income.

[2] Revenue Act of 1971 applied to 1972 incomes. The tax liability figures differ from those published in the U.S. Budget because of different estimating procedures, particularly those related to capital gains.

[3] Includes $113,000,000 revenue effect of eliminating the 50 percent maximum tax on earned income.

[4] Excess of percentage over cost depletion and accelerated over straight-line depreciation.

[5] Includes effects of adding net imputed rent and disallowing itemized deductions for mortgage interest and real estate taxes.

[6] Includes effect of eliminating the retirement income credit.

Note: Details may not add to totals because of rounding.

If taxed at 1972 rates, these additions to the tax base plus elimination of the rate advantages of income splitting would increase tax collections by more than $77 billion.[27] Almost 28 percent of the increase results from the elimination of income splitting and an additional 18 percent is derived from the taxation of capital gains. If we add to these the $9.6 billion of additional revenue derived from eliminating homeowner's preferences, we find that these three major changes alone account for almost 60 percent of the increased tax yield.

The effect of adopting the comprehensive tax base differs markedly among families at different income levels. While about half of the total tax base increase would accrue to families with incomes of $10,000 to $25,000 (see table 4), the largest percentage changes in taxable income occur at the bottom and very top of the income scale. Elimination of the extra exemptions for age and blindness produces the largest increase in taxable income for families with income under $3,000, while taxation of transfer payments increases taxable income by over

percent for all families with incomes of $3,000 to $10,000. For those with incomes of $50,000 and over, full taxation of capital gains and constructive realization of gains transferred by gift or bequest are responsible for the greatest increases in taxable income. For families in the $10,000 to $50,000 income range, the inclusion in income of net imputed rent (and elimination of deductions for mortgage interest and property taxes paid) plus the curtailment of other personal deductions are the major features that increase the taxable income base (table 5).

[27] The MERGE file data do not permit us to distinguish between married couples filing joint returns and those who choose to file separately. Therefore, in all calculations we assume that married couples file joint returns. Because of this assumption, tax liabilities may be overstated by 1 or 2 percent.

TABLE 4.—INCREASE IN THE TAX BASE UNDER A COMPREHENSIVE INCOME TAX, BY INCOME CLASSES, 1972 INCOME LEVELS

[Income classes in thousands; other dollar amounts in millions]

Expanded AGI class [1]	Taxable income		Increase in taxable income	Percent distribution of increase	Percent increase in taxable income
	Comprehensive law	Present law [2]			
Under $3	$898	$235	$663	0.4	282.1
$3 to $5	9,623	3,159	6,464	3.9	204.6
$5 to $10	79,318	46,929	32,389	19.5	69.0
$10 to $15	145.047	108,694	36,353	21.9	33.4
$15 to $20	132,235	104,487	27,748	16.7	26.6
$20 to $25	84,806	67,686	17,120	10.3	25.3
$25 to $50	116,846	92,795	24,051	14.5	25.9
$50 to $100	36,570	29,108	7,462	4.5	25.6
$100 to $500	28,458	19,681	8,777	5.3	44.6
$500 to $1,000	3,917	2,148	1,769	1.1	82.4
$1,000 and over	6,488	3,309	3,179	1.9	96.1
All classes	644,205	478,230	165,975	100.0	34.7

[1] Expanded adjusted gross income is adjusted gross income as defined in the Internal Revenue Code modified to include the income items listed in table 3.

[2] Revenue Act of 1971 applied to 1972 incomes. The tax liability figures differ from those published in the U.S. Budget because of different estimating procedures, particularly those related to capital gains.

Note: Details may not add to totals because of rounding.

TABLE 5.—PERCENTAGE DISTRIBUTION OF FEATURES INCREASING THE TAX BASE UNDER A COMPREHENSIVE INCOME TAX, BY INCOME CLASSES, 1972 INCOME LEVELS

[Income classes in thousands]

Expanded AGI class [1]	All features	Features affecting the tax base [2]							
		Capital gains [3]	Tax exempt interest, dividend exclusion, excess depletion, and other preference income	Life insurance interest	Homeowners' preferences [4]	Transfer payments	Other itemized deductions	Percentage standard deduction	Additional exemptions for age and blindness
Under $3	100.0	0.8	0.5	1.1	4.4	24.0	0.5	----------	68.9
$3 to $5	100.0	.9	.4	1.3	4.2	57.1	.5	----------	35.7
$5 to $10	100.0	3.1	.9	4.0	10.3	62.3	3.0	1.3	15.2
$10 to $15	100.0	5.0	1.3	7.3	18.3	37.8	3.6	21.6	5.1
$15 to $20	100.0	7.2	1.9	8.5	24.0	27.3	5.1	23.5	2.6
$20 to $25	100.0	10.2	2.4	7.5	25.4	25.7	7.5	18.4	3.0
$25 to $50	100.0	21.6	3.9	5.5	23.6	21.3	10.3	11.4	2.3
$50 to $100	100.0	53.0	7.1	1.0	15.9	3.0	15.4	2.9	1.8
$100 to $500	100.0	68.4	14.5	.3	5.9	(5)	9.7	.4	.7
$500 to $1,000	100.0	80.4	11.9	.1	2.0	----------	5.4	.1	.1
$1,000 and over	100.0	88.8	6.6	.1	.8	----------	3.6	(5)	(5)
All classes	100.0	15.7	3.0	5.5	17.3	33.2	5.9	12.6	6.9

[1] Expanded adjusted gross income is adjusted gross income as defined in the Internal Revenue Code modified to include the income items listed in table 3.

[2] Beginning with the Revenue Act of 1971 as it applies to 1972 income and going to a comprehensive tax base.

[3] Includes effects of excluding ½ realized capital gains and taxation of gains transferred by gift or bequest.

[4] Includes effects of eliminating itemzied deductions for mortgage interest and real estate taxes.

[5] Less than 0.05.

Note: Details may not add to totals because of rounding.

As indicated above, these changes in the tax base plus elimination of the rate advantages of income splitting now allowed married couples filing joint returns would increase tax collections by $77 billion at 1972 income levels.[28] About 10 percent of this increase (which is calculated on the assumption of no increase in tax rates) would be derived from those with total incomes of under $10,000; 43 percent would be paid by families with incomes between $10,000 and $25,000; and the remaining 47 percent would come from those with incomes of $25,000 and over (table 6).

TABLE 6.—COMPARISON BETWEEN TAX LIABILITIES UNDER PRESENT LAW AND UNDER A COMPREHENSIVE INCOME TAX, BY INCOME CLASSES, 1972 INCOME LEVELS

[Income classes in thousands; other dollar amounts in millions]

Expanded AGI class [1]	Tax liability		Increase in tax liabilities	Percentage distribution of tax increase	Pecentage increase in tax liabilities
	Comprehensive tax	Present law [2]			
Under $3	$128	$36	$92	0.1	255.6
$3 to $5	1,489	475	1,014	1.3	213.5
$5 to $10	14,238	7,655	6,583	8.5	86.0
$10 to $15	30,263	18,843	11,420	14.8	60.6
$15 to $20	31,737	19,354	12,383	16.0	64.0
$20 to $25	22,866	13,301	9,565	12.4	71.9
$25 to $50	38,099	20,707	17,392	22.5	84.0
$50 to $100	17,121	9,672	7,449	9.6	77.0
$100 to $500	17,076	9,241	7,835	10.1	84.8
$500 to $1,000	2,638	1,324	1,314	1.7	99.2
$1,000 and over	4,489	2,279	2,210	2.9	97.0
All classes	180,145	102,888	77,257	100.0	75.1

[1] Expanded adjusted gross income is adjusted gross income as defined in the Internal Revenue Code modified to include the income items listed in table 3.

[2] Revenue Act of 1971 applied to 1972 incomes. The tax liability figures differ from those published in the U.S. Budget because of different estimating procedures, particularly those related to capital gains.

Note: Details may not add to totals because of rounding.

Although increased collections would be substantial at all levels, the changes are striking for the very poor and the very rich. Those with incomes under $5,000 would find their tax liabilities increased threefold while all families with incomes of $500,000 and over would have tax increases of almost 100 percent. These results are consistent with our earlier findings on the large differences in income subject to tax for those at the bottom and top of the income scale.

Increased liabilities under a comprehensive income tax, however, do not result solely from increases in the taxable income base. The elimination of the rate advantages now enjoyed by married couples through income splitting would have a substantial impact on the amount of tax paid. In the income classes between $15,000 and $100,000, elimination of income splitting would account for 30 to 40 percent of the total increase in tax liabilities under the revised tax system (table 7). Income splitting has very little effect in the very lowest and very highest income classes.

[28] This figure also includes a relatively small amount of revenue derived from eliminating the 50 percent maximum tax on earned income.

TABLE 7.—PERCENTAGE DISTRIBUTION OF REVENUE EFFECT UNDER A COMPREHENSIVE INCOME TAX RESULTING FROM REMOVAL OF INCOME SPLITTING AND FROM EXPANDING THE TAX BASE, BY INCOME CLASSES, 1972 INCOME LEVELS

[Income classes in thousands]

Expanded AGI class[1]	Total	Features affecting tax liabilities	
		Removal of income splitting[2]	Expansion of tax base[3]
Under $3	100.0	----------	100.0
$3 to $5	100.0	0.5	99.5
$5 to $10	100.0	7.9	92.1
$10 to $15	100.0	22.3	77.7
$15 to $20	100.0	30.9	69.1
$20 to $25	100.0	35.3	64.7
$25 to $50	100.0	38.0	62.0
$50 to $100	100.0	39.4	60.6
$100 to $500	100.0	20.9	79.1
$500 to $1,000	100.0	6.2	93.8
$1,000 and over	100.0	1.9	98.1
All classes	100.0	27.9	72.1

[1] Expanded adjusted gross income is adjusted gross income as defined in the Internal Revenue Code modified to include the income items listed in table 3.
[2] Includes the effect of removing the maximum 50 percent tax on earned income.
[3] Includes the effect of removing the retirement income credit.

Assuming tax rates remain unchanged, most families now taxable would pay higher taxes under the comprehensive tax. However, about $5 billion of the $77 billion increase in collections would come from families not now paying any taxes. As shown in table 8, some 10.3 million families who currently pay no taxes would become taxable under such a system. Virtually all of these new entrants to the tax-paying population would be in the low income classes—which may not be a desirable goal of tax policy. However, it should be noted that about 730,000 families with incomes of $10,000 and over who are not now taxable would also start paying tax under the comprehensive tax system.

TABLE 8.—COMPARISON BETWEEN NUMBER OF TAXPAYING FAMILIES UNDER PRESENT LAW AND UNDER A COMPREHENSIVE INCOME TAX

[Income classes and population in thousands]

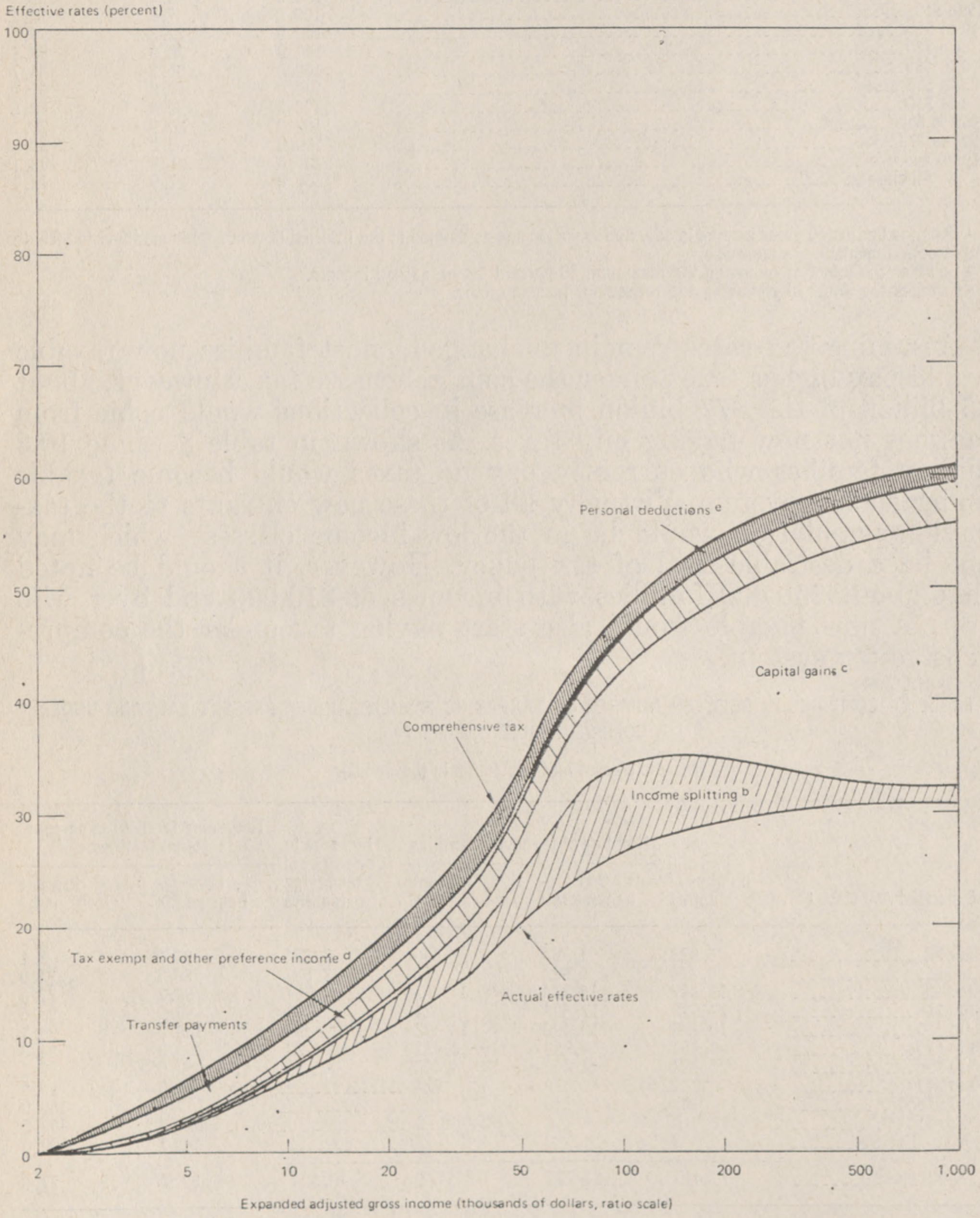
Expanded AGI class[1]	Total number of families	Number of taxpaying families		Increase in number of taxpaying families	Taxpaying families as percent of all families	
		Comprehensive tax	Present law[2]		Comprehensive tax	Present law[2]
Under $3	5,923	1,764	540	1,224	29.8	9.1
$3 to $5	6,874	5,920	2,338	3,582	86.1	34.0
$5 to $10	19,387	18,844	14,077	4,767	97.2	72.6
$10 to $15	17,535	17,524	16,924	600	99.9	96.5
$15 to $20	10,486	10,486	10,392	94	100.0	99.1
$20 to $25	4,954	4,954	4,932	22	100.0	99.6
$25 to $50	4,463	4,463	4,448	15	100.0	99.7
$50 to $100	625	624	624	----------	99.8	99.8
$100 to $500	189	189	189	----------	100.0	100.0
$500 to $1,000	6	6	6	----------	100.0	100.0
$1,000 and over	3	3	3	----------	100.0	100.0
All classes	70,445	64,778	54,473	10,304	92.0	77.3

[1] Expanded adjusted gross income is adjusted gross income as defined in the Internal Revenue Code modified to include the income items listed in table 3.
[2] Revenue Act of 1971 applied to 1972 incomes. The tax liability figures differ from those published in the U.S. Budget because of different estimating procedures, particularly those related to capital gains.

Note: Details may not add to totals because of rounding.

The changes resulting from the adoption of the comprehensive income tax for families at different income levels can be seen quite strikingly in figure 1. The top-most line on the chart indicates the effective tax rates that would be paid under the comprehensive tax while the lowest line indicates the rates now paid by these families. The intervening lines shown in the chart demarcate the extent of erosion due to the major structural features discussed above.

FIGURE 1. Influence of Various Provisions on Effective Rates of Federal Individual Income Tax, 1971 Act [a]



a Rates, exemptions, and other provisions of the Revenue Act of 1971 scheduled to apply to calendar year 1972 incomes.
b Includes effect of removing maximum tax.
c Includes effect of full taxation and constructive realization of capital gains.
d Includes effect of taxing of interest on state-local bonds and life insurance policies; taxing net imputed rent (including effect of disallowing personal deductions for mortgage interest and real estate taxes) disallowing excess of percentage over cost depletion; disallowing excess of accelerated over straight-line depreciation; and removing dividend exclusion.
e Includes effect of removing additional exemptions for age and blindness and retirement income credit.
f Expanded adjusted gross income is adjusted gross income as defined in the Internal Revenue Code modified to include the income items listed in Table 3.

Of course, it is not clear that the tax increase of $77 billion that would be achieved under a comprehensive tax structure is desirable on either fiscal grounds or in terms of equity. If it were considered appropriate to change the distribution of taxes (and, of course, after-tax income), tax rates could be cut by an average of 43 percent to maintain a constant yield (table 9). On balance, this would increase the progressivity of the income tax would increase and the distribution of income after tax would become somewhat more equal.

TABLE 9.—AVERAGE TAX RATE REDUCTIONS POSSIBLE TO MAINTAIN A CONSTANT YIELD UNDER A COMPREHENSIVE INCOME TAX, BY INCOME CLASSES, 1972 INCOME LEVELS

[Income classes in thousands; other dollar amounts in millions]

Expanded AGI class [1]	Tax liability		Average rate reduction possible (percent)
	Comprehensive tax	Present law [2]	
Under $3	$128	$36	71.9
$3 to $5	1,489	475	68.1
$5 to $10	14,238	7,655	46.2
$10 to $15	30,263	18,843	37.7
$15 to $20	31,737	19,354	39.0
$20 to $25	22,866	13,301	41.8
$25 to $50	38,099	20,707	45.6
$50 to $100	17,121	9,672	43.5
$100 to $500	17,076	9,241	45.9
$500 to $1,000	2,638	1,324	49.8
$1,000 and over	4,489	2,279	49.2
All classes	180,145	102,888	42.9

[1] Expanded adjusted gross income is adjusted gross income as defined in the Internal Revenue Code modified to include the income items listed in table 3.

[2] Revenue Act of 1971 applied to 1972 incomes. The tax liability figures differ from those published in the U.S. Budget because of different estimating procedures, particularly those related to capital gains.

Note: Details may not add to totals because of rounding.

Alternative Tax Rate Schedules

As noted earlier, all or part of the increased revenue that would be collected under the comprehensive income tax can be viewed as a reserve to be used for general tax rate reductions. In this section, we explore ways in which taxes might be cut and the implications of each for effective rates of tax at various income levels and for the distribution of income after tax.

At the outset, it should be acknowledged that there is no single correct way to cut tax rates. To simplify the calculations and to permit easy comparisons with present law rates, we have retained the present taxable income brackets. To illustrate the range of possiblities, we have calculated tax liabilities with five different schedules that differ fairly substantially in their degree of progressivity (table 10). However, each rate schedule will yield approximately the same amount of revenue that would be collected in 1972 under the Revenue Act of 1971.

TABLE 10.—PRESENT MARGINAL TAX RATE SCHEDULE AND ALTERNATIVE SCHEDULES UNDER A COMPREHENSIVE INCOME TAX, BY TAXABLE INCOME CLASSES

[Income classes in thousands]

Taxable income class	Present law [1]	Alternative schedules under comprehensive income tax [2]				
		1	2	3	4	5
Under $0.5	0.14	0.08	0.10	0.05	0.16	0.07
$0.5 to $1.0	.15	.09	.10	.07	.16	.08
$1.0 to $1.5	.16	.09	.11	.08	.16	.10
$1.5 to $2.0	.17	.10	.11	.10	.16	.11
$2.0 to $4.0	.19	.12	.12	.13	.16	.13
$4.0 to $6.0	.22	.12	.13	.15	.16	.14
$6.0 to $8.0	.25	.14	.13	.16	.16	.15
$8.0 to $10.0	.28	.16	.15	.17	.16	.16
$10.0 to $12.0	.32	.18	.16	.18	.16	.20
$12.0 to $14.0	.36	.20	.18	.19	.16	.22
$14.0 to $16.0	.39	.22	.20	.20	.16	.24
$16.0 to $18.0	.42	.24	.22	.21	.16	.26
$18.0 to $20.0	.45	.26	.22	.22	.16	.28
$20.0 to $22.0	.48	.27	.24	.23	.16	.29
$22.0 to $26.0	.50	.28	.25	.24	.16	.30
$26.0 to $32.0	.53	.30	.26	.25	.16	.32
$32.0 to $38.0	.55	.31	.28	.27	.16	.34
$38.0 to $44.0	.58	.33	.30	.29	.16	.35
$44.0 to $50.0	.60	.34	.32	.31	.16	.36
$50.0 to $60.0	.62	.35	.34	.33	.16	.37
$60.0 to $70.0	.64	.36	.36	.35	.16	.38
$70.0 to $80.0	.66	.37	.38	.37	.16	.40
$80.0 to $90.0	.68	.39	.40	.38	.16	.41
$90.0 to $100.0	.69	.39	.45	.39	.16	.42
$100.0 and over	.70	.40	.50	.40	.16	.44

[1] Tax Reform Act of 1969 rate schedule for married couples filing separate returns.
[2] Rate schedules 1 to 4 are applied with a $1,300 low-income allowance; rate schedule 5 assumes a $2,000 low-income allowance.

1. The simplest way to cut taxes and still maintain the same yield as would be derived in 1972 is a straight 43 percent across-the-board cut in all marginal tax rates. This would lower the bottom bracket rate to 8 percent and would drop the top bracket rate to 40 percent. This is rate schedule 1 in table 10.

2. In schedule 2, the marginal rates begin and end at higher levels than those in schedule 1—10 percent in the lowest bracket and 50 percent in the highest bracket—but the rates between $6,000 and $60,000 of taxable income are lower. Schedule 2 extends to all incomes the present 50 percent maximum marginal rate that applies only to earned income, but it is nevertheless slightly less progressive than schedule 1 because the rates below $2,000 are higher.

3. Schedule 3 greatly reduces the rate at the bottom and the top of the income scale, but imposes higher rates than schedule 1 for taxable incomes between $2,000 and $10,000 and higher rates than schedule 2 for taxable incomes between $2,000 and $14,000 along with equal or lower rates for taxable incomes of $14,000 and over. The marginal rates in schedule 3 range from a minimum of 5 percent to a maximum of 40 percent, which involves a 64 percent cut in the lowest rate as well as a significant cut—43 percent—in the highest rate. On balance, schedule 3 is a little more progressive than schedule 2, and a little less progressive than schedule 1.

4. Schedule 4 would apply a flat 16 percent tax rate on all taxable income. Since the simplicity and apparent fairness of a flat rate of tax on taxable income has attracted a number of observers,[29] we have included such a schedule along with the other alternatives shown.

[29] For example, see Milton Friedman, *Capitalism and Freedom* (University of Chicago Press, 1962), pp. 174-76, and Charles O. Galvin, "First Lecture," in Charles O. Galvin and Boris I. Bittker, *The Income Tax: How Progressive Should It Be?*" (Washington: American Enterprise Institute for Public Policy Research, 1969), pp. 1-23.

Under this schedule, the first two bracket rates would be increased from their present law levels by 14 and 7 percent, respectively, while the highest current rate of 70 percent would be reduced by 77 percent.

5. The final schedule combines a top marginal rate of 44 percent with a generous low-income allowance of $2,000. Along with the $750 personal exemption (under the Revenue Act of 1971), a $2,000 allowance would exempt from tax all four-person families with incomes below $5,000. Thus, under schedule 5, all those with incomes now below or slightly above the officially-defined poverty line would be relieved of any Federal individual income tax liability. To keep within the revenues produced by the present-law income tax, the lowest bracket rate in schedule 5 begins at 7 percent, a higher starting rate than that of schedule 3, but lower than that of schedules 1, 2 or 4.[30]

In table 11 we show the effective rates of tax under present law and under each of the alternative rate schedules. The different schedules result in very different average effective tax rates at the various income levels. For example, as compared with present law, taxes under schedule 2 would rise for families with incomes below $10,000; fall for those with incomes of $10,000 to $100,000; and rise for families with incomes of $100,000 and over (average tax liabilities under each rate schedule are shown in Appendix table A–7).

TABLE 11.—EFFECTIVE TAX RATES UNDER PRESENT LAW AND UNDER THE COMPREHENSIVE INCOME TAX USING ALTERNATIVE RATE SCHEDULES, BY INCOME CLASSES, 1972 INCOME LEVELS

[Income classes in thousands; rates in percent]

Expanded AGI class [1]	Present law [2]	Schedule— 1	2	3	4	5
Under $3	0.5	0.9	1.1	0.6	1.8	0.1
$3 to $5	1.7	3.2	3.6	2.6	5.6	1.7
$5 to $10	5.3	5.8	6.2	5.9	8.7	5.0
$10 to $15	8.7	8.1	8.3	8.7	10.7	7.8
$15 to $20	10.7	10.1	9.9	10.6	11.8	9.9
$20 to $25	12.1	11.9	11.4	11.9	12.4	11.9
$25 to $50	14.5	15.1	14.1	14.3	13.1	15.6
$50 to $100	23.5	23.4	21.8	21.4	14.0	24.9
$100 to $500	29.5	30.8	33.7	29.8	14.3	33.3
$500 to $1,000	30.4	34.4	41.9	34.2	14.2	37.7
$1,000 and over	32.1	36.0	44.7	36.0	14.6	40.0
All classes	11.3	11.3	11.3	11.3	11.3	11.3
Measure of after-tax income inequality [3]	.3678	.3675	.3689	.3691	.3837	.3638

[1] Expanded AGI is adjusted gross income as defined in the Internal Revenue Code modified to include the income items listed in table 3.

[2] Revenue Act of 1971 applied to 1972 incomes. The tax liability figures differ from those published in the U.S. Budget because of different estimating procedures, particularly those related to capital gains.

[3] This is the Gini coefficient of inequality, which is a statistical measure of overall equality or inequality in the distribution of income. It may vary between 0 (indicating perfect equality) and 1 (indicating perfect inequality). A decrease in the value therefore signifies a more equal after-tax distribution of income and a more progressive tax structure.

Schedule 4 is the least progressive of all the alternatives considered by a wide margin. On the average, the effective rates of tax would be substantially higher under this schedule than under present law for all income classes below $25,000, while those at higher income levels would enjoy large tax savings. For example, under present law, the average tax paid by families with incomes of $1 million and over is $743,000;

[30] The marginal tax rates under present law and under schedules 1 to 4 are directly comparable. However, schedule 5 is not really comparable with the others, because the increase in the low-income allowance, in effect, increases the size of the zero marginal rate bracket.

under schedule 4, the average for this income class falls to only $345,000—an average tax reduction of more than 50 percent.

Schedule 5 is the most progressive and, we believe, most attractive of all the possibilities considered. Average tax payments would fall for all families with incomes below $25,000. Higher-income families would pay more taxes than they do now, but the increases are not excessive in our judgment. Again looking at families with incomes of $1 million and over, the average tax under schedule 5 rates is about $938,000 as compared with $743,000 under present law. This would represent a 26 percent increase in tax liability for the most affluent families in the Nation.

The comprehensive tax base and alternative rate schedules also generate substantial differences in the relative distribution of income after tax. Based on the Gini coefficients of inequality[31] (also shown in table 11), only rate schedules 1 and 5 (combined with the comprehensive tax base) produce an after-tax income distribution that is more progressive than the current tax system. Of the alternatives considered, schedule 5 has the lowest Gini coefficient and is therefore the most progressive. Schedules 2, 3, and 4 all produce after-tax distributions that are more unequal than the present one, but the flat-rate proportional tax in schedule 4 is considerably less progressive than all the other alternatives considered.

Of course, the drastic reforms of the tax base, even when coupled with the tremendous reduction in tax rates under schedule 5, will not reduce taxes for all families. Some 18 million families or 25 percent of the total, would have tax increases in excess of $100 under the comprehensive structure (Appendix table A–12). However, 48 percent of all families would pay at least $100 less tax under the revised structure than they currently pay, and tax liabilities for another 27 percent would be within $100 of their present-law payments. About two-thirds of all single persons whose major source of income is earnings would receive tax cuts; on the other hand, 52 percent of the single individuals who receive their income chiefly from capital gains and other property would find their tax increased. Similarly, most married couples would also pay higher taxes if they are recipients of capital gains and other property income and pay lower taxes if their income is primarily from earnings.

For single persons and married couples, tax cuts would be both more frequent and larger for renters than for homeowners, and for recipients of capital gains than for recipients of other property income. Because of the importance of imputed rent and capital gains, most property income recipients would pay more tax even under schedule 5 than they now pay.

In general, then, under the comprehensive income tax structure, the tax burdens of homeowners would increase relative to those of renters; the burdens for capital gain recipients would increase relative to recipients of other income from property; married couples' burdens would rise relative to those of single persons; and the burdens of those

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[31] The Gini coefficient of inequality is a statistical measure of overall equality or inequality in the distribution of income. Pictorially, it is equal to the ratio of the area between the Lorenz curve and the line of equal distribution to the entire area below the line of equal distribution. The value of the Gini coefficient varies between 0 (indicating perfect equality) and 1 (indicating perfect inequality). A decrease in the value of the Gini coefficient signifies a more equal distribution of income; an increase signifies a more unequal distribution.

who now itemize personal deductions would increase relative to those who use the standard deduction.

We believe that such shifts in the distribution of tax burdens are desirable and would improve the equity of the income tax, but others will doubtless have other views.

Appendix Tables

TABLE A-1.—REVENUE EFFECT UNDER A COMPREHENSIVE INCOME TAX RESULTING FROM REMOVAL OF INCOME SPLITTING AND FROM EXPANDING THE TAX BASE, BY INCOME CLASSES, 1972 INCOME LEVELS

[Income classes in thousands; amounts in millions]

Expanded AGI class [1]	Total	Features affecting tax liabilities	
		Removal of income splitting [2]	Expansion of tax base [3]
Under $3	$92	0	$92
$3 to $5	1,014	$5	1,009
$5 to $10	6,583	521	6,062
$10 to $15	11,420	2,542	8,878
$15 to $20	12,383	3,831	8,552
$20 to $25	9,565	3,375	6,190
$25 to $50	17,392	6,601	10,791
$50 to $100	7,449	2,933	4,516
$100 to $500	7,835	1,634	6,201
$500 to $1,000	1,314	82	1,232
$1,000 and over	2,210	41	2,169
All classes	77,257	21,565	55,692

[1] Expanded adjusted gross income is adjusted gross income as defined in the Internal Revenue Code modified to include the income items listed in table 3.

[2] Includes effect of 50 percent maximum tax on earned income.

[3] Includes effect of removing the retirement income credit.

TABLE A–2.—REVENUE EFFECT OF FEATURES INCREASING THE TAX BASE UNDER A COMPREHENSIVE INCOME TAX, BY INCOME CLASSES, 1972 INCOME LEVELS

[Income classes in thousands; amounts in millions]

Expanded ACI class [1]	All features	Revenue effect of features affecting the tax base [2]							
		Capital gains [3]	Tax-exempt interest, dividend exclusion, excess depletion, and other preference income	Life insurance interest	Homeowners' preferences [4]	Transfer payments	Other itemized deductions	Percentage standard deduction	Additional exemptions for age and blindness [5]
Under $3	$92	−$1	−$1	$1	$4	$23	(6)	0	$65
$3 to $5	1,009	7	5	13	41	559	$5	0	379
$5 to $10	6,062	168	49	246	625	3,633	197	$101	1,045
$10 to $15	8,878	414	114	632	1,588	3,113	326	2,148	541
$15 to $20	8,552	578	157	701	2,032	2,152	455	2,224	253
$20 to $25	6,190	595	149	457	1,598	1,435	493	1,262	200
$25 to $50	10,791	2,383	456	569	2,631	2,031	1,214	1,241	267
$50 to $100	4,516	2,372	326	43	723	126	715	122	88
$100 to $500	6,201	4,278	879	20	356	2	595	24	46
$500 to $1,000	1,232	990	146	1	24	0	67	(6)	2
$1,000 and over	2,169	1,922	146	1	19	0	80	(6)	1
All classes	55,692	13,708	2,426	2,685	9,642	13,074	4,147	7,122	2,888

[1] Expanded adjusted gross income is adjusted gross income as defined in the Internal Revenue Code modified to include the income items listed in table 3.

[2] Beginning with the Revenue Act of 1971 as it applies to 1972 income and going to a comprehensive tax base.

[3] Includes effects of excluding ½ realized capital gains and taxation of gains transferred by gift or bequest.

[4] Includes effects of eliminating itemized deductions for mortgage interest and real estate taxes.

[5] Includes effect of eliminating retirement income credit.

[6] Less than $500,000.

Note: Details may not add to totals because of rounding.

TABLE A-3.—INCREASE IN THE TAX BASE RESULTING FROM VARIOUS FEATURES UNDER A COMPREHENSIVE INCOME TAX, BY INCOME CLASSES, 1972 INCOME LEVELS

[Income classes in thousands; amounts in millions]

Expanded AGI class[1]	All features	Increase in taxable income from—							
		Capital gains[2]	Tax exempt interest, dividend exclusion, excess depletion, and other preference income	Life insurance interest	Homeowners' preferences[3]	Transfer payments	Other itemized deductions	Percentage standard deduction	Additional exemptions for age and blindness
Under $3	$663	$5	$3	$7	$29	$159	$3	0	$457
$3 to $5	6,464	55	29	81	269	3,689	34	0	2,308
$5 to $10	32,389	988	283	1,292	3,321	20,171	976	$433	4,925
$10 to $15	36,353	1,831	480	2,637	6,651	13,757	1,308	7,839	1,851
$15 to $20	27,748	2,004	525	2,352	6,650	7,570	1,424	6,508	715
$20 to $25	17,120	1,743	414	1,284	4,352	4,392	1,278	3,150	507
$25 to $50	24,051	5,199	950	1,334	5,667	5,112	2,484	2,745	560
$50 to $100	7,462	3,957	530	74	1,186	221	1,150	213	131
$100 to $500	8,777	6,006	1,273	28	515	4	853	36	62
$500 to $1,000	1,769	1,423	210	2	35	0	96	1	2
$1,000 and over	3,179	2,824	210	2	27	0	114	(4)	1
All classes	165,975	26,035	4,905	9,093	28,700	55,075	9,720	20,926	11,519

[1] Expanded adjusted gross income is adjusted gross income as defined in the Internal Revenue Code modified to include the income items listed in table 3.

[2] Includes effects of excluding ½ realized capital gains and taxation of gains transferred by gift or bequest.

[3] Includes effects of eliminating itemized deductions for mortgage interest and real estate taxes.

[4] Less than $500,000.

Note: Details may not add to totals because of rounding.

TABLE A-4.—REVENUE EFFECT OF SELECTED FEATURES INCREASING THE TAX BASE UNDER A COMPREHENSIVE INCOME TAX, BY INCOME CLASSES, 1972 INCOME LEVELS

[Income classes in thousands; amounts in millions]

Expanded AGI class [1]	Capital gains			Tax-exempt interest	Dividend exclusion	Other preference income [2]
	Excluded half	Constructive realization	Total			
Under $3	−$2	$1	−$1	0	(3)	−$1
$3 to $5	1	6	7	0	$4	1
$5 to $10	62	106	168	$2	42	5
$10 to $15	147	267	414	14	83	17
$15 to $20	233	345	578	14	120	23
$20 to $25	272	323	595	18	104	27
$25 to $50	1,589	794	2,383	107	210	139
$50 to $100	1,583	789	2,372	128	78	120
$100 to $500	3,093	1,239	4,278	686	30	163
$500 to $1,000	771	219	990	115	1	30
$1,000 and over	1,638	284	1,922	109	1	36
All classes	9,334	4,374	13,708	1,193	673	560

[1] Expanded adjusted gross income is adjusted gross income as defined in the Internal Revenue Code modified to include the income items listed in table 3.
[2] Includes the excess of percentage over cost depletion and accelerated over straight-line depreciation.
[3] Less than $500,000.

Note: Details may not add to totals because of rounding.

TABLE A-5.—AVERAGE TAX LIABILITY UNDER A COMPREHENSIVE INCOME TAX AND UNDER PRESENT LAW, BY INCOME CLASSES, 1972 INCOME LEVELS

[Income classes and number of families in thousands]

Expanded AGI class [1]	Number of families	Average liability		
		Comprehensive law [2]	Present law [3]	Difference
Under $3	5,923	$22	$6	$16
$3 to $5	6,874	217	69	148
$5 to $10	19,387	734	395	339
$10 to $15	17,535	1,726	1,075	651
$15 to $20	10,486	3,027	1,846	1,181
$20 to $25	4,954	4,616	2,685	1,931
$25 to $50	4,463	8,537	4,640	3,897
$50 to $100	625	27,379	15,467	11,912
$100 to $500	189	90,406	48,926	41,480
$500 to $1,000	6	407,167	204,416	202,751
$1,000 and over	3	1,463,292	742,802	720,490
All classes	70,445	2,557	1,461	1,096

[1] Expanded adjusted gross income is adjusted gross income as defined in the Internal Revenue Code modified to include the income items listed in table 3.
[2] Computed using tax rates of the Revenue Act of 1971 applied to the comprehensive taxable income base.
[3] Revenue Act of 1971 applied to 1972 incomes. The tax liability figures differ from those published in the U.S. Budget because of different estimating procedures, particularly those related to capital gains.

TABLE A-6.—INFLUENCE OF VARIOUS PROVISIONS ON EFFECTIVE RATES OF FEDERAL INDIVIDUAL INCOME TAX, 1971 ACT

[Income classes in thousands; amounts in percentages]

Expanded AGI class [2]	Comprehensive tax rate	Deductions [3]	Exclusion of transfer payments	Homeowners' preferences [4]	Exclusion of life insurance interest	Other tax exempt and preference income [5]	Capital gains	Income splitting [6]	Actual tax rate
Under $2	0								0
$2 to $3	1.9	0.9	0.9	0.6	0.5	0.5	0.5	0.5	0.5
$3 to $4	4.2	2.8	2.8	1.4	1.2	1.2	1.2	1.2	1.2
$4 to $5	6.3	4.9	4.9	2.4	2.3	2.2	2.2	2.1	2.1
$5 to $6	7.5	6.3	6.3	3.3	3.1	3.0	2.9	2.9	2.8
$6 to $7	8.6	7.8	7.7	5.1	4.8	4.6	4.6	4.5	4.3
$7 to $8	9.6	8.8	8.7	6.1	5.7	5.6	5.5	5.4	5.1
$8 to $9	10.5	9.9	9.7	7.1	6.6	6.4	6.4	6.2	5.8
$9 to $10	11.6	11.2	10.7	8.8	8.1	7.9	7.9	7.7	7.1
$10 to $11	12.4	12.0	11.3	9.5	8.8	8.6	8.5	8.4	7.6
$11 to $12	13.4	13.2	12.2	10.7	10.0	9.8	9.7	9.6	8.6
$12 to $13	13.8	13.5	12.4	11.0	10.4	10.1	10.0	9.8	8.7
$13 to $14	14.8	14.5	13.2	11.8	11.0	10.7	10.6	10.4	9.1
$14 to $15	15.5	15.4	13.9	12.8	11.8	11.5	11.4	11.2	9.6
$15 to $17	16.6	16.5	15.0	13.8	12.8	12.5	12.4	12.1	10.3
$17 to $20	18.4	18.3	16.8	15.6	14.3	13.9	13.9	13.5	11.1
$20 to $25	20.8	20.6	19.0	17.7	16.3	15.9	15.7	15.2	12.1
$25 to $50	26.7	26.5	24.8	23.3	21.5	21.1	20.8	19.1	14.5
$50 to $75	39.8	39.6	37.6	37.2	35.4	35.3	34.5	29.2	22.1
$75 to $100	46.0	45.8	43.6	43.5	41.9	41.8	40.9	34.0	26.8
$100 to $200	52.4	52.2	50.1	50.1	48.9	48.8	46.3	35.4	29.4
$200 to $500	58.0	57.9	56.0	56.0	55.1	55.0	51.8	33.5	29.6
$500 to $1,000	60.5	60.5	58.9	58.9	58.3	58.3	55.0	32.2	30.4
$1,000 and over	63.1	63.1	62.0	62.0	61.8	61.7	59.7	32.6	32.1
All classes	19.7	19.4	18.2	16.7	15.7	15.4	15.1	13.6	11.3

[1] Rates, exemptions and other provisions of the Revenue Act of 1971 scheduled to apply to calendar year 1972 incomes.

[2] Expanded adjusted gross income is adjusted gross income as defined in the Internal Revenue Code modified to include the income items listed in table 3.

[3] Includes effect of eliminating the percentage standard deduction; curtailing itemized deductions other than those for homeowners; eliminating age and blindness exemptions; and eliminating retirement income credit.

[4] Includes effect of disallowing personal deductions for mortgage interest and real estate taxes and taxing net imputed rent.

[5] Includes effect of taxing interest on State and local government bonds; disallowing excess of percentage over cost depletion; disallowing excess of accelerated over straight-line depreciation; and removing dividend exclusio .

[6] Includes effect of removing 50 percent maximum tax on earned income.

TABLE A-7.—TOTAL AND AVERAGE TAX LIABILITIES UNDER ALTERNATIVE RATE SCHEDULES AND A COMPREHENSIVE INCOME TAX, BY INCOME CLASSES, 1972 INCOME LEVELS

[Income classes in thousands; total liability amounts in millions]

Expanded AGI class [1]	Schedule 1 tax liability		Schedule 2 tax liability		Schedule 3 tax liability		Schedule 4 tax liability		Schedule 5 tax liability	
	Total	Average	Total	Average	Total	Average	Total	Average	Total	Average
Under $3	$74	$12	$89	$15	$49	$8	$143	$24	$7	$1
$3 to $5	871	127	1,007	146	724	105	1,538	224	469	68
$5 to $10	8,411	434	9,064	468	8,547	441	12,685	654	7,237	373
$10 to $15	17,466	996	17,898	1,021	18,850	1,075	23,259	1,326	16,779	957
$15 to $20	18,138	1,730	17,801	1,698	19,053	1,817	21,206	2,022	17,902	1,707
$20 to $25	13,036	2,631	12,502	2,524	13,118	2,648	13,593	2,744	13,122	2,649
$25 to $50	21,624	4,845	20,119	4,508	20,481	4,589	18,661	4,181	22,344	5,006
$50 to $100	9,640	15,424	8,958	14,333	8,814	14,102	5,753	9,205	10,249	16,398
$100 to $500	9,662	51,122	10,560	55,873	9,346	49,450	4,483	23,720	10,437	55,222
$500 to $1,000	1,501	250,167	1,825	304,167	1,490	248,333	620	103,333	1,645	274,167
$1,000 and over	2,561	853,667	3,178	1,059,333	2,556	852,000	1,035	345,000	2,815	938,333
All classes	102,984	1,462	103,000	1,462	103,027	1,462	102,977	1,462	103,005	1,462

[1] Expanded adjusted gross income is adjusted gross income as defined in the Internal Revenue Code modified to include the income items listed in table 3.

Note: Total liability shown for each schedule is actual amount computed under rate schedules shown in text table 10. Thus, there are slight variations from the $102,888,000,000 of tax under present law.

TABLE A-8.—CHANGES IN TAX LIABILITY FOR SELECTED TYPES OF FAMILIES UNDER A COMPREHENSIVE INCOME TAX AND RATE SCHEDULE 1

Item	Percent of family units with—				Average dollar tax change
	Tax increase more than $100	Tax change +/— $100	Tax decrease more than $100	Total	
Single individuals	32.8	32.7	34.5	100.0	—$43
Earnings major income source	7.8	29.7	62.5	100.0	—276
Property major income source	55.9	38.1	6.0	100.0	320
Transfers major income source	63.6	35.6	.8	100.0	201
Married couples	26.5	26.7	46.7	100.0	16
Earnings major income source	17.9	28.2	53.9	100.0	—119
Property major income source	74.4	15.5	10.1	100.0	1,758
Transfers major income source	80.8	18.6	.6	100.0	462
All other marital status	30.2	35.8	34.0	100.0	20
All family units	28.2	28.8	43.1	100.0	1

Note: Details may not add to totals because of rounding.

TABLE A-9.—CHANGES IN TAX LIABILITY FOR SELECTED TYPES OF FAMILIES UNDER A COMPREHENSIVE INCOME TAX AND RATE SCHEDULE 2

Item	Percent of family units with—				Average dollar tax change
	Tax increase more than $100	Tax change +/— $100	Tax decrease more than $100	Total	
Single individuals	34.9	32.3	32.7	100.0	—$15
Earnings major income source	8.7	32.3	59.1	100.0	—269
Property major income source	57.2	35.6	7.3	100.0	477
Transfers major income source	67.8	31.5	.7	100.0	223
Married couples	26.0	28.0	46.0	100.0	6
Earnings major income source	17.1	29.9	53.0	100.0	—154
Property major income source	73.5	15.2	11.3	100.0	2,187
Transfers major income source	82.2	17.2	.5	100.0	480
All other marital status	31.7	36.7	31.6	100.0	1
All family units	28.3	29.7	42.0	100.0	1

Note: Details may not add to totals because of rounding.

TABLE A-10.—CHANGES IN TAX LIABILITY FOR SELECTED TYPES OF FAMILIES UNDER A COMPREHENSIVE INCOME TAX AND RATE SCHEDULE 3

Item	Percent of family units with—				Average dollar tax change
	Tax increase more than $100	Tax change +/— $100	Tax decrease more than $100	Total	
Single individuals	30.6	33.9	35.5	100.0	—$41
Earnings major income source	9.0	26.9	64.2	100.0	—256
Property major income source	54.7	38.2	7.1	100.0	264
Transfers major income source	56.0	43.2	.1	100.0	192
Married couples	28.2	29.3	42.5	100.0	14
Earnings major income source	20.2	30.9	48.9	100.0	—108
Property major income source	72.2	17.3	10.5	100.0	1,446
Transfers major income source	78.2	21.1	.7	100.0	473
All other marital status	29.5	35.6	34.8	100.0	—3
All family units	28.8	30.8	40.4	100.0	1

Note: Details may not add to totals because of rounding.

TABLE A–11.—CHANGES IN TAX LIABILITY FOR SELECTED TYPES OF FAMILIES UNDER A COMPREHENSIVE INCOME TAX AND RATE SCHEDULE 4

Item	Percent of family units with—				Average dollar tax change
	Tax increase more than $100	Tax change +/— $100	Tax decrease more than $100	Total	
Single individuals	41.7	39.3	19.0	100.0	$11
Earnings major income source	14.8	51.5	33.7	100.0	—114
Property major income source	62.5	29.1	8.3	100.0	—448
Transfers major income source	76.0	24.0	0	100.0	333
Married couples	50.7	35.0	14.3	100.0	—29
Earnings major income source	45.6	38.6	15.8	100.0	—35
Property major income source	68.2	14.6	17.2	100.0	—1,576
Tranfers major income source	86.9	13.0	0	100.0	648
All other marital status	46.3	41.7	12.0	100.0	215
All family units	48.4	36.5	15.1	100.0	1

Note: Details may not add to totals because of rounding.

TABLE A–12.—CHANGES IN TAX LIABILITY FOR SELECTED TYPES OF FAMILIES UNDER A COMPREHENSIVE INCOME TAX AND RATE SCHEDULE 5

Item	Percent of family units with—				Average dollar tax change
	Tax increase more than $100	Tax change +/— $100	Tax decrease more than $100	Total	
Single individuals	25.7	36.5	37.8	100.0	—$67
Earnings major income source	6.3	25.4	68.3	100.0	—307
Property major income source	52.4	39.9	7.7	100.0	440
Transfers major income source	46.9	52.1	.1	100.0	146
Married couples	25.0	23.0	52.0	100.0	31
Earnings major income source	17.1	23.0	59.9	100.0	—122
Property major income source	74.1	15.8	10.1	100.0	2,301
Transfers major income source	72.7	25.9	1.5	100.0	414
All other marital status	24.8	34.7	40.6	100.0	—80
All family units	25.1	26.8	48.0	100.0	1

Note: Details may not add to totals because of rounding.

SUBSIDIZATION BY PRICING IN THE REGULATED INDUSTRIES

By Richard A. Posner*

The kind of detailed regulation of price and entry that one finds in the transportation, communications, energy, and other industries where public utility or common carrier principles of regulation hold sway is usually assumed to have one of two purposes: either to compress price to cost because a free market would not, in the particular industry, operate as competitive theory predicts, or—a directly opposite view that is gaining increasing favor among economists, lawyers, and political scientists—to shield the regulated firms from competition and secure to them the fruits of monopoly.

The dichotomy oversimplifies. It ignores a third purpose of regulation that is widely encountered, although seldom acknowledged, and that relates directly to the theme of this compendium. That purpose is, by maintaining a pricing structure under which some customers are permitted to purchase at prices below the cost of supplying them, to confer benefits on those customers at the expense of other customers who must pay prices above cost in order to defray the subsidy to the favored ones, or, in other words, to redistribute wealth and to alter the market's allocation of resources—much like conventional subsidization.

It is tempting to dismiss this phenomenon of "internal subsidization" as a purely private matter, in contrast to the subsidization programs of Government. But that would be error. Internal subsidization is unthinkable without governmental action. The essential governmental control is the prohibition of entry into the markets where the regulated firms are charging prices above cost in order to subsidize prices below cost to favored customers in other markets. Without such prohibition, new entrants would be attracted into the high-price markets by the favorable price-cost spread; competition would bid price down to cost; and the fund from which the subsidy is paid would be eliminated. Furthermore, no rational profit-maximizing firm will, in the absence of regulation, furnish services below cost, for it can always increase its profits by terminating a losing service. Internal subsidization is quintessentially a product of Government regulation.

Now internal subsidization involves difficult problems of characterization. I have discussed these at length elsewhere and will not repeat that discussion here. Although it is easy to mistake other practices for internal subsidization, there is a good deal of evidence that the practice is widespread in the regulated industries and, more than that, is an essential component of regulation. I shall offer two sorts of evi-

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*Professor of Law, University of Chicago. This paper is an abridgment of my article "Taxation by Regulation," which appeared in the Spring 1971 issue of The Bell Journal of Economics and Management Science (vol. 2, p. 22). The reader is referred to that article for a fuller discussion and for documentation of the points made in this paper.

dence in support of this claim. First, I shall discuss a number of examples which I believe most students of the regulated industries would accept as *bona fide* examples of the practice. Second, I shall discuss a number of generic characteristics of regulation and the regulated industries that can be explained only, or better, by assuming that internal subsidization is one of the fundamental purposes in fact of regulation. After documenting my claim that the practice is widespread in the regulated industries, and not accidentally so, I shall consider some of the normative implications of such a conclusion.

Prior to the nationalization of intercity passenger railroad service, that service provided a prime example of internal subsidization; and the outcome is an instructive one. Intercity passenger railroad service was provided for many years at a loss to the railroads, which they recouped, as best they could, out of their freight revenues. Eventually the burden proved too great, and intercity railroad passenger service was nationalized. The cost of the service was thereby shifted to a new group—the general taxpayer, rather than railroad shippers. But the principal effect of nationalization was to make explicit the taxation-subsidization character of railroad passenger service, which previously had been implicit. Notice that but for the Government, in the form of the Interstate Commerce Commission, the railroads would long before have terminated unremunerative passenger services. Governmental policy was responsible for a program of ostensibly private subsidies.

Internal subsidization is apparently quite common in the regulated transportation industries. Shippers of agricultural commodities receive highly favorable rates that cannot be cost justified; apparently this is just another example of the subsidies that farmers in this country have been able to wrest from the political system. Airline rates are pegged to distance, with little or no weight given to cost differences between different routes. The result is that passengers on dense routes, where unit costs are low due to favorable load factors, subsidize passengers on sparse routes, where unit costs are much higher.

The communications industries furnish many examples of internal subsidization. "Postalization"—the use of a flat rate for services whose cost characteristics in fact differ sharply—is not limited to the Post Office. Comsat charges roughly the same rate for Atlantic and Pacific satellite circuits, although different load factors make the former in fact much cheaper. Telephone companies in setting their rates average their costs over entire States, despite very different costs in different areas within a single State; and A.T. & T.'s long-distance tolls are pegged to distance and duration, without regard to different route densities that, again, create significant cost differences among routes. To take a slightly different kind of example, domestic telegraph service, like railroad passenger service, would be declining even more rapidly than it is, were it not for the Federal Communications Commission's stubborn rearguard action against further rate increases and service degradation by Western Union.

A.T. & T. provides electronic interconnection to the national educational television network below cost, the deficit being made up by other users of A.T. & T. services. Broadcasters are required to provide nonremunerative news and public-affairs programing; advertisers pick up the tab in the form of higher rates for commercial time. Cable-television companies are frequently required to dedicate channels free of charge to municipalities for various public functions; their subscribers pay for this service in the form of higher rates.

Examples abound in other regulated industries. Liability insurance for high-risk automobile drivers is in many States written at a loss; safer drivers subsidize the less safe. Water companies frequently furnish water free of charge to fire departments. Electrical companies often give discounts unrelated to cost savings to hospitals and other public or charitable institutions. Producers of natural gas have since the early 1960's been constrained to sell at prices that do not include scarcity rents, thereby benefiting present-day consumers of natural gas at the expense of future consumers, who may encounter shortages (in fact a shortage of natural gas is already evident in a number of States, including New York State). These examples could be multiplied.

An enumeration of examples can suggest the prevalence of internal subsidization, but fails to convey the degree to which it appears to be an intrinsic rather than aberrational element of public regulation. My own view is that the conferral of subsidies is one of the fundamental purposes in fact, although not one of the ostensible purposes, of regulation and this is brought out by a consideration of some basic characteristics of regulation and the regulated industries that cannot be explained adequately without reference to a goal of subsidization.

Regulatory Control Over Entry

Control of entry is an essential feature of regulation under the view advanced here because the adoption of a system of internal subsidies creates false pricing signals. The price-cost spread in the subsidizing markets will attract new entrants. But their costs may actually be higher than those of the existing firms, in which event their entry would produce a misallocation of resources. Entry would also impair or destroy the system of internal subsidies. With free entry, then, both efficiency and the subsidy scheme would be gravely endangered, so the regulatory agency must control entry.

To be sure, were regulation imposed for the sole benefit of the firms regulated, control over entry would also be necessary to prevent the dissipation through competition of the advantages secured to the incumbent firms by regulation. But not all important instances of entry control can be explained on this ground. The Post Office is not a profit-maximizing enterprise—it is in fact run at a deficit—but new entry into postal service is, and must be, barred, in order to preserve the uniform rate structure and interclass subsidies that are a prominent feature of the Post Office's operation.

The theory that regulation seeks to approximate the results of competition cannot explain the control of entry at all. If the regulated firm is constrained to sell at a price approximating cost, there will be no incentive for an inefficient firm to enter. If, despite regulation, the firm is charging a higher price, the matter is more complex. In general, however, assuming that differential pricing is feasible, as seems generally the case in decreasing-cost industries, a new entrant will not be attracted into such an industry by monopoly profits unless it is more efficient than the existing seller. The latter can repel entry by fixing a price near marginal cost to any customer solicited by the new entrant and will, because such a policy will not reduce his profits on any other sales (we have assumed he can maintain different prices) and the alternative is to lose a customer whom it is still profitable to serve

even at the reduced price. Unless it is a more efficient firm, the new entrant will have higher costs and will not be able to meet the low price. Thus, in the case where public utility regulation is most plausibly explained in terms of an efficiency rationale—where the industry regulated is a decreasing-cost industry—the rationale still will not explain an important feature of that regulation, the control of entry, because there is no reason to anticipate in efficient entry in the absence of public control.

Regulatory Review of New Construction

Firms subject to public utility or common carrier regulation are commonly required to obtain the permission of the regulatory agency for any major new construction. This control is to be distinguished from control over entry: It applies whether the purpose of the construction is to enable the firm to enter a new market or to serve an existing market. In arguing that regulation is for the exclusive benefit of the regulated firms, one could point out that such control enables an agency to prevent the firms from expanding production in a way that might undermine cartel pricing. A consumer-interest view of regulation also provides an explanation, although not a very satisfactory one, of the control of new construction. While there is little solid basis for fear that an unregulated firm, even if a monopolist, would adopt an extravagant construction program, there are reasons for concern that regulated firms would not minimize costs. But it is unlikely that recognition of the side effects of regulation provides a general explanation of the power over new construction, since many regulated firms subject to the power are not monopolists. If simply a fear of poor management were in the minds of those who framed the various public utility and common carrier statutes, one wonders why such statutes do not give the regulators more direct authority over management.

I suspect that the framers may have been motivated by a somewhat different concern from those previously mentioned—one that arises from the public finance function of regulation. An illustration drawn from the international communications industry will help explain. In 1967, A.T. & T., acting in concert with several other carriers, applied to the FCC for permission to build a fifth voice-grade cable across the Atlantic Ocean (TAT 5). Comsat opposed the application. It pointed that by the time TAT 5 was installed, very large satellites (5,000 circuits each) would be in service above the Atlantic and these satellites would provide sufficient capacity to meet all reasonably foreseeable increments of demand for transatlantic telecommunications service at a cost per circuit that would be only a small fraction of TAT 5's. A.T. & T., in reply, noted that the satellites in question might not be in service in time to avoid a shortage. But in that event, judging from subsequent filings and analysis in the proceeding, the economical solution would be to permit queuing, or use peak-load pricing, or launch an additional satellite of an older model. The staff of President Johnson's Task Force on Communications Policy, which analyzed A.T. & T.'s application in some depth, concluded that TAT 5 was the least economical alternative.

The cost questions were in fact quite complex and the correctness of the staff's analysis perhaps debatable. The opinions in the case

suggest, however, that the FCC itself doubted whether TAT 5 was cost justified. The Commission expressly refused to compare the costs of the cable with those of alternative satellite facilities, adhering to this position in the face of a strong dissenting opinion in which it was urged that the cable was indeed more costly. The majority cannot have been optimistic as to what an analysis of costs would have shown.

In approving the application the Commission appears to have been strongly influenced by considerations that cannot be understood save in terms of a public finance approach to regulation, such as A.T. & T.'s representation that if TAT 5 were approved, it would be able to reduce its transatlantic telephone rates by 27 percent. It is at first glance surprising that the FCC should have been impressed by this offer. If satellites were a cheaper means of meeting demand than the cable, then rates could be reduced by even more than 27 percent if A.T. & T., rather than building a new cable, leased circuits from Comsat: So why did the Commission refuse to compare cable and alternative satellite costs? The probable explanation lies in Comsat's rate structure. As mentioned, Comsat is wedded (largely it appears for reasons of foreign relations) to a system of uniform global pricing under which the price of a circuit in a Comsat Pacific satellite is roughly the same as the price of a circuit in one of its Atlantic satellites, even though the cost per circuit is lower in the Atlantic. Consequently, when A.T. & T. leases circuits from Comsat for transatlantic service, it is forced to pay a considerable premium above the actual cost of the circuits to Comsat, so much so that the price to A.T. & T. (after correcting for certain quality differences) is not clearly lower than the cost to it of circuits in a new cable. It is thus understandable why A.T. & T. should have pushed for approval of TAT 5. But while from its standpoint cable costs may not have been higher than satellite costs, from the broader social standpoint they were (assuming that the staff analysis referred to earlier was correct). It is to prevent unwarranted investments based on divergences between private and social cost calculations caused by internal subsidization that regulatory agencies must have authority over the construction programs of regulated firms even when entry into a new market is not contemplated.

In this case, to be sure, the agency's exercise of its duty was perfunctory at best. Given the circumstances, however, that is not surprising. First of all, the program of internal subsidies that was jeopardized by the grant of the application—Comsat's policy of uniform global pricing of satellite circuits—is not one that the Commission has particularly encouraged. Secondly, the Department of Defense made strong representations to the Commission that the construction of TAT 5 would promote national security—another example of internal subsidization at work. The Department could have requested an appropriation from Congress to contribute to the cost of building a cable not justified by purely civilian demands. Prevailing upon the FCC to authorize such a facility was an alternative mode of financing this defense project. The method of obtaining the appropriation and the class of taxpayers were different, but the object was the same. The subsidization of defense needs appears to be a rather general feature of regulation.

The Duty of the Regulated Firm To Serve, and Regulatory Power Over the Abandonment of Service

Two long-established and complementary features of the regulatory process are the duty of regulated firms to serve all who demand service and the prohibition against such firms' discontinuing a service without the authorization of the regulatory agency. Although the prohibition of arbitrary refusals of service lies close to the heart of the traditional common-law concept of a public utility or common carrier (as the very name, common carrier, suggests), and is a settled feature of regulatory law, it is difficult to explain under existing views of the purpose in fact of regulation. It is not apparent why regulated firms would want to be placed under such a duty or how they might benefit from it; it is only a little less difficult to see why, from the standpoint of consumer interests, the imposition of such a duty would be thought an appropriate part of the regulatory system. To be sure, a monopolist, if he has his way, will establish a schedule of prices under which fewer customers are served than if a competitive price were set; but once the schedule is adopted there is no reason to expect him to refuse service, on any but good business grounds, to any customer willing to pay the price. Arbitrary refusals do not make good business sense. There is similarly no reason to expect a commercial enterprise to abandon a profitable service. Yet regulated firms are forbidden to abandon any route without obtaining the permission of the regulatory agency, and bitterly contested abandonment proceedings are a commonplace occurrence, especially in the railroad industry.

Perhaps these controls are designed in many instances to reinforce regulatory control over the profits of the regulated firms: A firm might refuse or terminate service in order to coerce a higher rate from the customer, or as part of a scheme for enhancing its profits by reducing the level of service on which the rates it was permitted to charge had been based. Possibly they were intended to reinforce ordinary contractual remedies for nonperformance of services considered essential. But these considerations do not explain why regulatory agencies are empowered to require the extension of utility services to new areas and to prevent the discontinuance of manifestly unremunerative services such as long-distance passenger transportation in the railroad industry. These cases can be explained only, I believe, in terms of a public finance view of regulation: Were they not subject to the duty to institute and not to terminate service, regulated firms could not be relied upon to implement policies of internal subsidization.

Competitive Market Structures

The public-finance hypothesis also illuminates some of the important characteristics of the regulated industries themselves (as distinct from characteristics of the regulatory schemes). It suggests, for example, why so many regulated industries do not have a monopolistic structure. A program of internal subsidies does not depend on the regulated industry's being a monopoly. So long as the demand for the industry's product is not perfectly elastic (does not drop off to nothing if price rises even slightly), and so long as the obligation to provide internal subsidies is imposed on all the firms in the industry,

such a program is feasible just as it is feasible to impose an excise tax on a competitive industry. It is therefore not surprising, under the view advanced here, that many regulated industries are not monopolistic in structure. To be sure, were regulation imposed solely at the behest of regulated firms, one would also expect many regulated industries to be competitive in structure. But one would not expect so many regulated markets (especially in the communications, power, and water-supply industries) to exhibit pronounced characteristics of natural monopoly. These are the least likely settings for firms to seek governmental protection from competition since the existence of a natural monopoly substantially reduces the danger of competition.

Regulated Industries Produce Services

It is a curiosity that public utility and common carrier industries invariably provide services (in the sense of a good that is difficult or impossible to store or transfer) rather than commodities. The public-finance view supplies an answer. A subsidized good or service will not in fact be used by those for whom it is intended if they are free to resell it on the free market, which is why direct subsidies are commonly of services rather than commodities.

Regulated Industries Provide "Infrastructure" Services

The specific complex of controls over entry and over the level and structure of rates that is characteristic of public utility and common carrier regulation is confined for the most part to the transportation, telecommunication, and power (electricity and gas) industries. Neither of the received views of regulation explains adequately why these particular industries have been singled out. A partial explanation of the identity of the regulated industries may be that society frequently imposes public utility controls on services that it wants provided on the broadest possible basis (in a sense to be defined). The regulated industries are part of the "infrastructure" of economic growth. Adequate transportation, communications, and power (especially electrical) must be in place before the development of modern industry is possible, and most countries, including this one at various periods, have undertaken to subsidize these services or provide them directly in the hope of attracting industrial developers. One can deny the necessity or appropriateness of this State promotional role but hardly its prevalence. And internal subsidization is one method whereby the expansion of the infrastructure services can be promoted.

To be sure, it is not expansion in any simple or obvious sense that is involved. In the case of a competitive industry, internal subsidies expand the provision of service to one class of customers, the beneficiaries of the program, but contract it to another: Those who must pay a higher price to defray the subsidy and who consequently demand (and are supplied) a smaller quantity. The overall output of the industry is not necessarily larger, and may well be smaller. If the industry is monopolistic in structure and it is not feasible to control its monopoly profits directly, a program of internal subsidies may well bring about a larger output than otherwise. But in either case it would appear that the primary effect of such a program is not to increase the amount of transportation, communication, or power

produced but rather to extend the service to classes of customers and geographical areas that might not be served in a free market.

Such a result is nonetheless consistent with the thinking that underlies the desire to force the creation of an adequate infrastructure rather than let the market take its course. The basic assumption, correct or incorrect, is that private enterprise, due to lack of foresight, or imperfections in the capital market, or external economies, will forgo many investments in infrastructure that would be socially profitable. One can argue from this that it is the role of the State to encourage precisely those infrastructure services that are unremunerative.

This view may be reinforced in some cases by another: concern with geographical concentration of population and economic activity. A program of internal subsidies that denies the cost advantages of proximity and density, as is often the case, encourages greater geographic dispersion. Cost advantages based on location are no less real than those based on other factors. But governments, including our own, have frequently followed policies aimed at denying those advantages.

The industries in which we find internal subsidies are commonly also recipients of at least some direct subsidies. This correlation supports the view of regulation as a method of public finance, especially where, as in the case of the electrical and telephone subsidies doled out by the Rural Electrification Administration, the recipients of direct subsidies are not members of the industry at all (in the REA case, they are consumer cooperatives). In such a case the established firms in the industry benefit only insofar as the existence of the direct subsidy reduces the pressure on them to provide an internal subsidy, and the subsidy scheme is more convincingly interpreted as a method of obtaining greater service than as a device for enriching corporate treasuries.

The infrastructure explanation for the identity of the regulated industries is far from being completely satisfactory. It hardly seems applicable when an internal subsidy is used to retard the decline of an old industry, such as railroad passenger service or telegraph service. In addition, the economic case for subsidizing infrastructure services is often dubious. And internal subsidization seems a somewhat curious way to encourage the expansion of an industry since, as mentioned, the cost of the subsidy is borne by customers of the industry. Indeed, the obligation to provide service to all at a uniform price may retard the undertaking of new extensions of service.

At the least, these considerations suggest that a thoroughgoing justification of internal subsidies on efficiency grounds is impossible. One can easily find examples where an internal subsidy works directly contrary to the dictates of efficient resource allocation. Thus, the subsidization of commuter railroad service aggravates an existing imbalance between private and social costs caused by the fact that individuals who are employed in cities and utilize urban public services can escape the costs of those services by living in a suburb and commuting. It would appear, therefore, that internal subsidies are frequently designed to redistribute wealth rather than to correct imperfections in the market.

Limitations of the Device

To summarize the discussion at this point, there is persuasive evidence that an important purpose in fact of public utility and common carrier regulation is to compel, by the device of the internal subsidy, the provision of certain services in quantities and at prices that a free market would not offer, much as the conventional taxing-spending power is used to the same end. Serious discussion of the public finance component of regulation has been retarded, however, by a tendency to dismiss it out of hand as an implausible and inappropriate alternative to more conventional exertions of the taxing power. Two objections are usually advanced as conclusive. The first is that internal subsidization distorts the efficient allocation of resources; the second, that it tends to be arbitrary and inequitable. One sometimes hears it said, too, that taxation is the proper business of the legislature and not of regulatory agencies.

1. Delegation

To take the last point first, it is difficult to understand why the delegation of a part of the taxing power to appointive agencies, the regulatory commissions, should be thought to offend the principles on which our Government is organized. Congress, acting from imperative reasons of practicality, has delegated much of its lawmaking power to appointive agencies. The Federal courts provide a conspicuous example, and the Internal Revenue Service one that is directly in point.

2. Efficiency

It is true that internal subsidization, by forcing prices in some markets above cost and prices in others below, distorts the allocation of resources. It creates a secondary inefficiency as well: the entry of new competitors into the high-price markets must be prevented by the regulatory agency lest the source of the internal subsidy be wiped out. Where the high-price market is a natural monopoly, this is not an acute problem, but of course not all markets subject to regulation are naturally monopolistic.

The criticism of internal subsidization as inefficient points to a real characteristic of the device but as a criticism it is superficial. It measures the device against an ideal standard and of course finds it wanting. The proper comparison is to other exercises of the taxing power. All methods of taxation distort the "optimum" allocation of resources—optimum, that is, without regard to any need or demand to provide certain services publicly—and there are no *a priori* grounds for assuming that excise taxes, such as the internal-subsidy programs imposed by regulatory agencies, produce worse misallocations than income or other taxes. To consider an important example, the exemption from income taxation of the real but not pecuniary income generated by housewives must cause a significant misallocation of resources by inducing many women to stay at home who would be more productive in other employments. The administrative costs of implementing a broader income concept would be so great, however, that this exemption is probably a permanent feature of income taxation. Because of pervasive and ineradicable distortions of this kind, it is not obvious that raising income tax rates would be a more efficient method

of providing particular services at below-market prices than internal subsidization. Indeed, insofar as the burden of internal subsidies tends to be borne by customers whose demands are highly inelastic, the allocative effects may be less adverse than those of alternative taxation methods. And in those cases where the regulated firms are obtaining monopoly profits, the adverse allocative effects of the tax will be even fewer.

Internal subsidies are also criticized on the ground that a subsidy in kind is inefficient compared to an unrestricted cash subsidy, because different people have different needs and wants. This is a valid and important point but it is not a criticism of internal subsidies as such, since it applies with equal force to most direct subsidies.

3. Equity

Because the determination of the incidence of particular taxes is immensely complex, it is very difficult to gage the effect of internal subsidies on the distribution of income. At a rough guess, internal subsidization may sometimes benefit the poor but has no general tendency to do so; and as our commuter example shows, it may sometimes work in the opposite direction. But poverty is not the only possible justification for the redistribution of income. It is interesting how often internal subsidization is employed to bolster declining services or sectors; perhaps in these cases it is felt that there are important reliance interests (for example, in location proximate to a railroad line) that deserve protection. And even if no consistent equity justification is possible, that is no special criticism of internal subsidies: the redistributive effects of tax-cum-direct-subsidy programs appear in a surprising range of cases to be perverse. If one is to oppose internal subsidies on equity grounds, it must be as part of a broader objection to the redistributive policies of the State.

I turn now to some other, less frequently discussed attributes of regulation as a method of public finance.

4. Enforcement

An important characteristic of taxation by regulation is difficulty (and expense) of enforcement. A firm that finds the provision of an unremunerative service irksome may try to terminate it by drastically reducing the quality of the service and then citing the resulting fall in demand as evidence that the public no longer wants the service. This is not so transparent a gambit as it may seem. Since the public is not paying the full cost of the service, it has a natural tendency to demand a very high (and correspondingly costly) level of service. The specification of an appropriate level involves an essentially arbitrary judgment and accordingly gives the firm some room for maneuver. Evidently degradation of service has played an important role in the termination of railroad passenger operations.

The tendency of regulated firms to cheat in providing unremunerative services is probably quite general since, unless regulation is more effective than anyone thinks, a penny saved in skimping on an unremunerative service will not result immediately in a full penny reduction in the rates paid by customers of the firm's lucrative services. Recent findings that the rates set by publicly owned electric utilities are more uniform than those set by privately owned electric utilities

support this suggestion. Uniform rates, we saw, are a common method of internal subsidization; and one would expect a privately owned company to resist providing unremunerative services more energetically than a publicly owned one.

5. Public Scrutiny

A troubling characteristic of the internal subsidy is its low visibility, which impedes responsible review. The amounts and recipients of direct subsidies are ordinarily specifically stated, but this is not the case with internal subsidies. Since information is not a free good, a subsidy program whose magnitude requires computation is less apt to be challenged than one whose magnitude is patent.

This is a general criticism of hidden subsidies, of which internal subsidies in the regulated industries are only one variety. And it is easily overstated: extravagant subsidy programs sail through Congress with monotonous regularity. Full disclosure is a far from dependable test of whether legislation in the public interest will be adopted, because the public does not vote on specific pieces of legislation, but on representatives, and it is demonstrable that in a representative system much legislation benefiting special interests at the expense of the public interest will been enacted. Furthermore, given the size of the Federal budget, the disclosure in an appropriation hearing of the amount of a subsidy may not always be an effective method of assuring a responsible review of the proposal's merits.

The concern about adequacy of scrutiny has greatest force with regard to internal subsidies for national defense. The Defense Department's role in the TAT 5 matter discussed earlier affords a good illustration. Had the Department been forced to include the item in its budgetary request to Congress, it would have had to weigh its importance against that of other national defense programs. The defense budget is not limitless. The inclusion of the cable item might have compelled the Department to modify some other request. In the context of a regulatory proceeding, however, the cable represented a free good to the Department. The Department had no incentive to evaluate the benefits of TAT 5 to the national defense objectively; indeed, it had an incentive to exaggerate those benefits. The FCC could not exercise a critical scrutiny because it has no competence to deal with military questions. The competent agencies—Congress and the Bureau of the Budget (which reviews all Federal budgetary proposals before submission to Congress)—were bypassed.

6. Manageability of Regulation

Another problem with internal subsidization is that it complicates an already barely manageable regulatory process. Because there is no objective basis for balancing off distributive benefits against allocative costs, an agency concerned with subsidizing worthy groups is deprived of a clear-cut standard for resolving controversies over pricing and entry. Clear and definite standards are necessary to tolerable regulation. Without a definite standard at the agency level, moreover, judicial review, a potentially important check on regulatory excesses, is likely to be ineffectual: the agency can give a plausible justification for any result. Multiple and conflicting standards also breed corruption.

7. Private Demand

Taxation by regulation, to be feasible, requires that there be sufficient demand in the private market to justify the imposition of the burden of the subsidy on the regulated firms. Where there is not, as in the railroad industry, the results can be disastrous for the industry. One may hazard the guess that regulation has frequently been the principal means of subsidizing infrastructure services for which there is a strong private demand, while in areas like national defense and education, where the market demand is probably small in relation to the amount of service that the State wishes to provide, other methods of subsidization have predominated.

And Some Advantages

The balance of advantages is by no means entirely against the choice of the internal subsidy as a method of public finance.

1. Administrative Expense

Although enforcement of internal subsidization can, as mentioned, be quite costly (railroad abandonment proceedings are a case in point), there are certain offsetting factors. Since no cash transfers are involved in internal subsidization, it is possible to dispense with the frequently elaborate apparatus of a formal transfer program—application forms, disbursement machinery, and the like. Often, too, a program of internal subsidies is implemented simply by the regulated firms' averaging the costs of many customers in setting a rate, and where this is done the firms avoid the expenses that would be incurred in identifying the costs of finer groups of customers and adopting a more complex rate structure tailored to the different costs.

2. Legislative Capacity

By shifting taxing power from Congress (or State legislative bodies) to administrative agencies, internal subsidization economizes on the legislature's time. This is an especially important consideration where the subsidy is of a kind that requires frequent adjustment or review. The ability of a legislature to transact business is obviously limited. Among the ways in which it can be conserved, perhaps the delegation of minor taxing functions to regulatory agencies is relatively efficient.

3. Protection of Expectations

At least when imposed on a service from the outset, internal subsidies may be less disruptive of public and commercial expectations than other new taxes. An example will illustrate. Suppose a community has pending before it several applications for a cable television franchise and would like to use a few channels in any cable television system that is constructed for municipal functions such as education. And suppose further that the feasible alternative methods of obtaining this service have been narrowed to two: a tax on the gross receipts of the barbers in the community, the proceeds to be used to purchase the channels from the cable franchisee, and a condition in the franchise requiring the franchisee to provide the channels to the school system

at no charge. If the first alternative is chosen, the result will be a rise in the cost (and hence presumably price) of barbering, which will lead to a fall in the amount of barbering demanded and supplied. As a result, some of the resources used in barbering in the community will be idle during the period in which they are being redeployed. And there will be an outcry from the barbers. These economic and political costs, incurred by virtue of the change in the economic conditions of the business brought about by a new tax, can be avoided if the second alternative, an internal subsidy by the cable industry, is selected. Since the costs of the cable system are now higher, a smaller system will be built. But the efficient scale (consistent with the obligation to provide free channels to the franchising authority) will be known in advance; there will be no waste in achieving it, as in the barbering example. In fact one observes that public utility and common carrier regulation has typically been imposed upon new services, where it was possible by a system of internal subsidies to finance desired extensions of the service without disturbing settled activities. And perhaps these considerations explain why municipalities have latched onto cable television as an important new source of revenue.

Nonetheless, the explanation is severely limited. The alternatives in our example were too narrow: the municipality could also have placed a gross-receipts or other tax on cable service and raised the money for the free channels that way. It did not have to use internal subsidization, although we have previously discussed some reasons why internal subsidization might sometimes be preferred to alternative forms of excise taxation.

4. Justice

There may be some appeal to the notion that it is more "just" for other customers of the same industry to bear the cost of a subsidy of the industry's service than to distribute that cost among the taxpaying public at large. The notion is a little peculiar, however. It is one thing to say that those who benefit from a service should bear its costs, and quite another to impute the cost of a subsidy to those customers who are quite prepared to pay the full cost of serving them.

A final reason for the choice of internal subsidization over alternative methods of public finance has nothing to do with its relative merits. The regulated firms may cast their weight on the side of the internal subsidy, viewing customers who enjoy subsidized rates as useful allies in the maintenance of regulatory barriers to entry. Subsidizing some customers may be the price that the franchised monopolist pays for his monopoly. Perhaps careful study would disclose that most regulation is demanded by and supplied to a coalition of regulated firms and those of their customers who receive services below cost as a consequence of regulation.

I trust that the foregoing remarks will not be construed as a defense of taxation (and subsidization) by regulation. They may, however, help explain the prevalence and tenacity of the practice, and they do suggest that, short of a thorough overhauling of Government subsidy policy, it is less easy to condemn the practice out of hand as inefficient and inequitable than has usually been assumed. Perhaps few subsidies are in the public interest; there may still be cases where, given a decision to subsidize, regulation is the cheapest means of doing so.

But if we are stuck with taxation by regulation, perhaps we are not stuck with its worst features. I propose three limited reforms—no more ambitious proposals would be appropriate in our existing state of ignorance of the actual incidence, magnitude, and effects of internal subsidies:

1. No internal subsidies for national defense.—The provision of internal subsidies to support the national defense seems especially questionable because, as mentioned earlier, this type of internal subsidy is almost entirely insulated from responsible review, due to the regulatory agencies' inexperience with national defense questions. I am of course not arguing that less money should be spent on national defense—only that the internal subsidy is an inappropriate way of appropriating defense moneys.

2. Identification and quantification.—Agencies and reviewing courts should insist, in proceedings where the maintenance of an internal subsidy is an issue, that the amount and cost of the subsidy, together with the identity of the recipients and of the payors, be calculated and placed in the public record. Perhaps this would eliminate some of the more captious instances of the phenomenon; at least it would bring an important issue of public policy into the open.

3. Choice of best method.—More consideration should be given to the most efficient method of attaining the ends of internal subsidization. Accepting the decision to subsidize a specific service and to impose the cost of the subsidy on other customers of the firm providing the service, there may be better ways of achieving this end than control of prices, entry, abandonments, and the like, by a regulatory agency. In particular, an explicit excise tax (such as the percentage-of-gross-receipts fee in many cable television franchises), with the proceeds earmarked for the service that the State wants to subsidize, may be preferable to the internal subsidy proper because it entails no limitation on entry into the high-price market; lump-sum fees may be preferable to either. A likely reason why such alternatives are rarely considered is that the usual regulatory agency lacks authority to impose an explicit tax or other fee. In franchise regulation, as the case of cable television suggests, this option is open. Perhaps, therefore, a modest enlargement of the taxing power of regulatory agencies, to permit them to exact a uniform and limited fee from any firm desiring to enter a regulated market in lieu of other regulatory controls, would foster the more efficient use of what appears to be a settled device of public finance.

THE ECONOMIC THEORY OF SUBSIDY PAYMENTS

By Carl S. Shoup*

I. The Concept of a Subsidy

The economic theory of subsidy payments is the theory of how a government can induce changes in relative prices (either market price, or price to seller, or price to buyer—see No. 4 below) in the private sector, by offering rewards rather than imposing penalties so that private-sector action will either reallocate resources to increase aggregate value of output in an already fully employed economy, or redistribute incomes, or both.

A subsidy is therefore a transfer payment; that is, a payment other than one made in consideration of services rendered or factors or goods supplied at the order of the payor, to a firm, factor owner, or household that is conditioned on some action by the recipient and is designed to induce a change in relative prices (market price, or price to seller or to buyer) of a good, or service, or a factor, or a group of goods or services or factors.

The major implications of this definition of a subsidy are:

1. A subsidy imposes an initial financial burden on some one or more persons as taxpayers who finance the subsidy (see No. 13 below).

2. The burden is temporary only, in principle, if the subsidy induces a reallocation of resources that increases the value of total output, since the initial losers can, in principle, then be fully compensated, with something left over.

3. In contrast, the initial burden represented by the taxes imposed to finance the subsidy persists indefinitely if the subsidy merely redistributes income, though the locale of the burden may change over time as short-run market forces are superseded by long-run forces.

4. Market price is to be distinguished from price to the seller, which is market price plus whatever subsidy, calculated per unit, is paid directly to the seller; and from price to the buyer, which is market price, less whatever subsidy per unit is paid directly to the buyer. A subsidy always changes at least one of these three types of price.

5. Since the transmitting mechanism of a subsidy is a change in relative prices (market price, or price to seller or to buyer), a subsidy is always partial in the sense of never being applicable to all firms with respect to all output, or to all households with respect to all uses of their incomes, or to all factors of production with respect to all their activities.

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6. A subsidy may, however, be broad in scope. It may apply to one, or several, or all households with respect to some one or more (but not all) uses of its or their incomes, and similarly as to firms and suppliers of factors of production (see Nos. 7–9 below for the distinction between micro- and macrosubsidies and for the two classes of microsubsidies).

7. If the subsidized good, service, or factor accounts for but a small part of the economy, the effect of the subsidy on the price (market price, or price to seller or to buyer) can in principle be ascertained to a close approximation without considering the taxes or other means by which the subsidy is financed, provided that the financing measure does not bear disproportionately on the subsidized item. If, in addition, resultant changes in prices of complementary or rival goods or services or factors are all small, the effects of a subsidy can be ascertained (to a close approximation) by a one-market microanalysis.

8. If the conditions in No. 7 above hold except that appreciable changes occur in the prices of complementary or rival goods or services or factors, the effect of the subsidy can be closely approximated by a two-market or multimarket microanalysis.

9. If all the conditions stipulated in No. 7 above are lacking, the microanalysis effects of a subsidy is a useless concept; the means of financing must be specified, and the net result ascertained be general equilibrium analysis. Such subsidies are macrosubsidies, in contrast to the microsubsidies of Nos. 7 and 8 above. An example of a macrosubsidy is a subsidy to all wages.

10. It is possible for a subsidy not to alter at all the amount of a good, service, or factor that is produced, stored, or sold (contrast No. 4 above, as to market or seller's or buyer's price). In this event, the effects of a subsidy can be duplicated by an unconditional lump-sum transfer payment to the buyer, or seller, as the case may be.

11. A transfer payment, the amount of which is not conditioned on desired action by the recipient household, firm, or owner of a factor of production, is not a subsidy; it is a welfare payment.

12. The supplying by the Government of a good or service completely free of charge is not a subsidy; like the transfer payment noted in No. 11 above, it does not make use of the price mechanism. Completely free of charge does not imply, however, that the good or service is supplied in unlimited amounts. Usually it is rationed by direct allocation or by queuing. Or, the recipient may be compelled to take more of the good or service than he wants at the zero price. A subsidy, too, may be accompanied by direct rationing or queuing, or by compulsory purchase, but the distinction remains that the subsidy does, and the other methods do not, make at least some use of the pricing mechanism as a rationing instrument.

13. A tax provision designed to induce action in the private sector is not a subsidy if it implies a gain in revenue for the Government rather than a loss, hence implies no need for an increase in taxation to cover a loss in revenue. For example, a reduction in income tax allowed to a firm that reduces its emission of pollutants is a subsidy, while a tax on a firm that increases with the amount of pollutants emitted is a penalty, not a subsidy.

In both instances the firm's total tax bill decreases as it reduces the emission of pollutants, but a comparison of the Government's total revenue with what it would have been if the measure in question had not been enacted makes clear the difference.

Two of the points made above need further emphasis if misunderstanding is to be avoided. They concern the distinction between a subsidy and a welfare payment, and the distinction between a subsidy and the free supplying of goods and services.

As to the first of these distinctions, it is well known that some types of welfare payment, notably aid to families with dependent children, and general assistance to the needy, vary in amount to the recipient inversely with the amount that he earns from part-time or low-paying jobs. The effect of this feature of the welfare payment is to reduce the net wage, after welfare payment reduction. The result in most instances if not in all is presumably to reduce the search for jobs by the welfare payment recipient, to shorten the hours he is willing to work if he is employed; and to induce him to refuse outright some offers of employment he might take if the amount of the welfare payment were not conditioned on the amount he was earning. If the intent of the legislator were not taken into account, this feature of the welfare payment could be labeled a subsidy for not working at a paying job. Clearly, however, this was not part of the intent of the legislator, and to call this a subsidy for not working is simply to invite confusion in communication. In contrast, the provision of the Federal old age and survivors' insurance law that stipulates no payment shall be made to the potential benefit recipient if he earns more than a specified amount per month (and that a reduced benefit shall be paid if the earnings are less, but above specific figures, per month and per year), while under the age of 72, must be counted as a subsidy for not working. The intent of the legislator, when the social security program was enacted, in a period of heavy unemployment, was to offer some inducement to the elderly not to compete as vigorously as they might otherwise with the nonelderly in the job market. There seems to be no evidence that this intent has been disavowed and that the legislator regrets the adverse effect this provision has on work incentives for the persons concerned.

The second of these distinctions, that between a subsidized good or service and one that is supplied free of any charge, can be emphasized by considering a hypothetical instance where the item is subsidized to the extent of, say, 99 percent of its price. Consumption of the item now expands nearly to the saturation point, the point beyond which consumers will refuse to take any additional amount even if it is offered to them free of all charge. Still, the distinction holds: The price, though extremely low, exercises some effect in checking consumption. In practice, there are few if any cases where the Government offers to supply all that consumers are willing to take at (*a*) a price equal to only some 1 percent of the cost, or (*b*) a zero price. In both instances the Government will impose some form of direct rationing, or indirect rationing as by queuing.

II. Subgroupings of Subsidies

Subsidies paid by the Government may be grouped in several ways, according to the question at issue. The groupings of chief interest for economic analysis appear to be the following. First, a distinction

between those subsidies the flow of which at the margin is the same as the total flow, and those where this is not the case. Second, subsidies conditioned on a positive-action performance by the private sector, and those conditioned on a negative-action performance. Third, the distinction between subsidies linked to factors, subsidies linked to business firms, and subsidies linked to consuming households, and the meaning to be given to consumer subsidies and producer subsidies. An examination of these distinctions paves the way for the analysis and appraisal of the price and quantity effects of subsidies under alternative market conditions, to be dealt with in section III below.

A. Marginal Flow Versus Total Flow

In the more commonly recognized type of subsidy, there is a money flow from the Government to the private sector as soon as the private sector starts to do, or to refrain from doing, what the Government wants it to do, or to refrain from doing. A subsidy paid for the growing of sugar beets is an example. Moreover, as the private-sector firm or household or factor increases its action along the lines desired by the Government, the flow of money from the Government increases. As the given firm produces more sugar beets, the subsidy flow to it increases. The total flow and the marginal flow are in the same direction. This state of affairs seems so natural and so obvious as to be scarcely worth remarking. Yet there are many other subsidies where the total flow is the reverse of the marginal flow. Tax subsidies are commonly of this kind. Let us consider an investment credit against income tax otherwise due, equal to a certain percentage of the cost of certain investment goods purchased. If a firm is purchasing no such goods, the flow of money is from the firm to the Government, in the form of ordinary amount of income tax paid. If this firm instead purchases a certain amount of eligible equipment, the money flow from it to the Government decreases. If it chooses to buy at a still more rapid rate, its money flow to the Government decreases further. At no point does the tax subsidy for the purchase of the equipment involve a check moving from the Government to the private sector (with the possible exception of a tax refund if the credit exceeds the tax otherwise due).

In the one instance, the sugar beet subsidy, the amount of the subsidy is automatically recorded as an expense in the Government's budget and in its report on the finances of a year just completed. In the other instance, the tax subsidy, the amount of the subsidy, the cost to taxpayers in general (who must presumably make up the revenue loss), never appears either in the Government's budget or in its accounting for past periods. Its effect is to reduce the income tax revenue, in the case just given, from what it would have been if there had been no investment credit. To make this kind of subsidy explicit, the Government would have to enter on the expenditure side of the budget an implicit outlay consisting of the revenue lost through the investment credit, and on the income side a counterbalancing entry of implicit tax revenue. It is as if the business firm paid full tax and the Government immediately refunded part of that tax because the firm had purchased the eligible equipment.

Other examples of the normal type of subsidy, where the total cash flow is from Government to the private sector, are Government purchases from the private sector at prices above the market, and

Government loan guarantees in the event that the Government has to make good on its guarantee.

The other type of subsidy, where the Government rewards performance by reducing the flow of money from the private sector to the Government, is exemplified further by loans made by the Government at low rates of interest, by acceptance of default as to repayment to the Government of the principal of a loan made by the Government, and of sale by the Government of goods or services at below market prices. In all these instances the subsidy element in the transaction is never explicitly recorded in the budget or accounts, unless both income and outgo are supplemented by implicit entries of the kind described above.

The distinction drawn here could be refined further by stipulating that the pure, or ordinary, subsidy occurs only when the action that the Government is encouraging is an increase in the output of something, not a decrease. The subsidy paid to a farmer for keeping acreage out of production would then not be termed a pure subsidy. For purposes of the present analysis, however, this refinement is not necessary.

B. Activity-Increasing Versus Activity-Decreasing Subsidies

The point mentioned in the immediately preceding paragraph is, however, important from another point of view, namely the degree of difficulty encountered in drawing the line between no payment and some payment, and the ceiling level at which the subsidy ceases to grow.

Let us consider, for example, a subsidy given to private firms in a certain type of industry to lower the amount by which they are discharging an offensive effluent into a river. What is desired here is a reduction in some activity. The problem is, from what level shall the reduction be measured? If it is measured from whatever level of pollution the firm in question had been engaging in, in some past period, two difficult issues arise. Firms that had already spent appreciable sums to reduce pollution even before the subsidy was in prospect are penalized, since a further reduction from the low level they have reached will normally be more costly per unit of depollution or per percentage point of depollution, owing to the usually increasing cost per unit of depollution. And even if costs are not thus rising, the firm with the largest pollution base has the largest total subsidy to gain. The second issue is that of selecting a suitable prior year or years from which to measure the prospective amount of depollution, even if all firms have been acting alike. Perhaps climatic or market conditions have affected the amount of polluting from one year to the next. The same kind of issues were encountered in the farm program in deciding how much to pay a given farmer for reducing his acreage devoted to a certain crop.

Moreover, the base-year approach grows increasingly unsuitable as time passes and technological developments make it cheaper for firms to depollute, or as changes in consumer tastes for types of the final product make it either cheaper or more expensive, per dollar of sales, to depollute. The level of pollution at which the Government is to feel justified in giving a subsidy for decreasing the pollution will normally change considerably over a period of years.

The other type of subsidy, that increases as the amount of something produced or consumed or used (as a factor of production) increases, poses just as serious a problem inherently, but one that is in practice largely ignored. That is the problem of how to avoid the waste of money that is involved in paying someone for doing something that he would be doing anyway. In principle there should be a base period here too, or, better yet, some estimate year by year of how much would be produced, or consumed, or used, if there were no subsidy, so that the subsidy could be granted only with respect to those units that require this stimulus. Perhaps the reason why no such nonsubsidized level is computed, usually, is that the failure to do so at least commits the Government to paying for no more than the excess over a zero level of production, consumption, or use. In the other case, where the subsidy is paid for reducing the level of something, there is no escape from estimating what should be the level at which no subsidy shall be paid. Otherwise, any firm could step up its level of pollution, for example, to absurd heights, and then claim subsidy on reduction from that level.

C. Consumer Subsidies Versus Factor Subsidies

A subsidy may be paid directly to the seller, or instead directly to the buyer, but this is not the distinction at issue here. Indeed, this difference is a purely formal one in an economic sense, for the results of a subsidy will be the same, friction aside, whether it is paid directly to the buyer or directly to the seller. This conclusion follows from the well-known theorem that it makes no difference, in principle, which side of the market a tax is levied on.

The distinction in mind here is based on the intent of the legislator, as to whether the benefit of the subsidy is to rest primarily with the consumers of the item that is subsidized (or that is made with factors of production that are subsidized), or whether instead it is the producers that are to be benefited. For "producers" we may read "factors," with the understanding that not all factors will necessarily be benefited in like degree.

Households are consumers, and are also the suppliers of factors (labor of various types, capital in its various forms including undistributed profits of corporations), but any one household is apt to be supplying factors to but one or a few industries, apart from capitalists who are able to diversify widely, while consuming the products of many industries, but chiefly those of a few industries in which the household as a supplier of factors may or may not be engaged. The difference in industry pattern for any one household with respect to its roles as consumer and factor supplier renders important the decision of the legislator whether the subsidy is to be aimed, for the industry in question, chiefly toward benefitting the factors or the consumers.

The benefit to the consumer may come chiefly in the fall in price of the subsidized good or service, or instead in the increased amount that he purchases at a modest reduction in price. Accordingly, a consumer subsidy, that is, a subsidy intended to benefit chiefly consumers rather than factors, may be largely a consumer-use subsidy or a consumer-price subsidy. Similarly, a producer subsidy, or rather a factor subsidy, may be intended either as primarily a factor-use subsidy or a factor-price subsidy.

III. The Economic Effects of Subsidies

The present section deals with the price and output effects to be expected from a subsidy under alternative conditions of demand, and of supply. Most of the analysis is familiar, and can be given rather briefly, except for the implications with respect to the legislator's intent regarding the two goals of resource reallocation and income redistribution. For example, let a certain product or service be known to be accompanied by external effects for which there is a great demand that cannot be satisfied by an unsubsidized market because the non-excludability of any one consumer of these externalities makes it impossible to develop a private market in them. What are we to conclude if the product or service itself turns out to have so inelastic a demand that there is little increase in output, hence little expansion of the externalities, even when the product or service is heavily subsidized? Is a subsidy an incorrect method for meeting the demand for these externalities? Is it in some sense inefficient? A somewhat similar question, it will be seen, can be asked regarding an attempt at income redistribution that fails because the market elasticities prove inappropriate.

The simplest class of cases will be considered first.

A. Perfect Competition, Closed Economy, One-Product Market

We recall first the results of extreme assumptions concerning elasticities on the two sides of a product market, translated from tax terms to subsidy terms.

The price effects of a microsubsidy may be used to locate the incidence of the subsidy, as distinguished from its impact. The impact is on that side of the market the Government pays the subsidy to. A rule analogous to that used for excise taxation is applicable here for cases in between the extremes.

The price benefit of a per-unit subsidy will be divided between the buyers and sellers in the ratio that the elasticity of the supply curve for the market in question bears to the elasticity of the demand curve, at the initial point of equilibrium.[1] Accordingly, if supply is very elastic and demand is very inelastic at that point, most of the per-unit subsidy will go to reducing the market price (if the subsidy is paid directly to the sellers) or the price to buyers, that is, market price less subsidy (if the subsidy is paid directly to the buyers).[2] In the extreme case of a perfectly inelastic demand, the market price will fall by the full amount of the subsidy when it is paid directly to the sellers, and will not rise at all when the subsidy is paid directly to buyers. This result will obtain no matter what the elasticity of the supply curve may be (ruling out of course the nonequilibrium case of a simultaneously perfectly inelastic supply). We note that in the world of subsidies, in contrast to that of excise taxation, it pays to be on the inelastic side of the market. Similarly, if supply is perfectly inelastic, a subsidy paid directly to the sellers will not drive down the market price at all, and if paid to buyers it will force up the market price by the full amount of the subsidy.

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[1] See Carl S. Shoup, *Public Finance* (Chicago: Aldine, 1969), pp. 273–274, and sources there cited.

[2] For diagrammatic illustrations of some of the in-between cases, see Joint Economic Committee, Congress of the United States. *The Economics of Federal Subsidy Programs: A Staff Study* (Jerry J. Jasinowski and Carl S. Shoup), Jan. 11, 1972, pp. 56, 60, 63, 64, 66.

Although neither of these perfect inelasticities may be expected in real-life product markets, something approaching them may not be too unusual, at least over the short run, before the buyers of other goods or services have learned how to use the subsidized product as a substitute, or before producers in other fields have learned how to produce the subsidized item, or have had time to transfer their resources into this field. In a market for a specialized factor, high inelasticities on either side of the market may prevail for a somewhat longer time.

In the other extreme cases, where either demand or supply is perfectly elastic, the reverse results obtain. If demand is perfectly elastic, a subsidy paid to the sellers will not reduce the market price at all, even if the supply is very (but of course not perfectly) elastic. A subsidy paid to the buyers has the same real effect, which takes the form of a rise in the market price by the full amount of the per-unit subsidy, again even if the supply is itself very elastic. The buyers get none of the price benefit of the subsidy at all. Similarly, if it is supply that is perfectly elastic, the entire price benefit goes to the other side of the market; market price falls by the full amount of the subsidy if the subsidy is paid to the sellers, and does not rise at all if the subsidy is paid to the buyers.

A perfectly elastic demand implies the existence of one or more perfect substitutes from the buyers' point of view, from which they will turn at the slightest drop in price of the subsidized article, to buy more of the latter. The Government may have an interest in persuading the buyers to do just this, since the subsidized article (but not the other) may create positive externalities that society, but not the buyers, should take into account. The two articles in this instance are not perfect substitutes from the Government's (society's) point of view. There are probably a good many cases in real life that approach this combination. In contrast, it seems likely that instances of perfectly elastic supply in the product market are rare, since such a supply implies that the factors in that industry can move to some other industry without any decrease in reward, and, more important here, factors elsewhere can enter this industry without loss. In a fully employed economy, and given the degree of specialization prevailing, this state of affairs appears unlikely, at least in the product market. Moreover, where it does obtain, it seems less likely than in the demand case that the Government would have an interest in promoting the substitution, on the grounds that the industry the added resources come from throws off negative externalities that the subsidized industry does not, or that the subsidized industry yields positive externalities not produced by the unsubsidized industry from which the perfectly substitutable factors come. It must be confessed however that these remarks are but conjectures based on the writer's intuitive view, and might well prove unjustified upon further consideration.

Let us return to the case of a highly, though not perfectly, inelastic demand for some good or service that yields external effects for which there is a great demand that cannot be satisfied through the market mechanism. A heavy subsidy, even one that drives the market price of the marketable good down to zero, will not increase its output much, and consequently will not increase by much the supply of the externalities for which the demand is postulated to be so strong (in the sense that the market demand curve would be shifted far over to the

right if the demand for the externalities could be identified with the demand for the marketable good). It might appear from all this that a subsidy is in this instance inefficient, in the sense of not being able to achieve a point on a Pareto frontier, where no one can be made better off without making someone else worse off. This conclusion is however unjustified. The trouble lies in the inelasticity of supply of the externalities, which is one aspect of the inelasticity of demand for the marketable good or service. Suppose, just for the sake of illustration, that the marketable good is education (anyone that is not willing to pay the price can be excluded) and that the externalities consist of the improved milieu that virtually everyone enjoys by having his neighbors highly educated. Let education be offered initially at a price, and let the demand for education at lower prices be very inelastic (doubtless an unrealistic assumption, unless the initial price is itself well below cost).

The consumers of the education are the coproducers (along with the school system) of the externalities; without their consumption of education the externalities will not appear. And if the consumers of the education have little taste for more of it, they are thereby reluctant producers of the externalities. Even if the subsidy is large enough to reflect accurately the full force of the demand for the externalities, it can do little to expand the output of the externalities, in the face of the inelastic supply of externalities. A Pareto optimum can be reached by a subsidy, but, under these circumstances, it will be reached at a level of education, and hence of externalities, little larger than that which obtained at the initial price of education.

The externalities justification for a subsidy appears again in the textbook case of the industry with a declining marginal industry cost due to external technological economies arising from expansion of the industry, while no one firm enjoys a declining marginal cost acting by itself. The implication often seems to be that not only should a subsidy be provided that will so expand the industry that, for example, a pool of trained workers will be provided, but that the subsidy should be continued indefinitely. But indefinite continuation is justified only if the externalities are true externalities in the sense of never being marketable because of the nonexclusion problem. It is not easy to think of concrete cases of this kind, and indeed there seem to be no Federal subsidies that are supported on these grounds.

Let us now turn to consider what types of price and output reaction are helpful, and which not, for a goal quite different from that of achieving a Pareto optimum, namely, the goal of redistribution of income. We have seen that there is no a priori case for saying that achievement of a Pareto optimum goal requires a large, or a small, change in price, or change in output: it all depends on the market circumstances, notably the degree of inelasticity of supply of the externalities and (though this point was not developed above) the degree of inelasticity or elasticity of the quasi-demand curve for the externalities as reflected by a vertical summing of individuals' demands for these externalities together with some rule about dividing the inframarginal consumers' surpluses at each level of aggregate (vertical) demand. What we can say is that if the optimum is achieveable with only a small reallocation of resources, the subsidy is not a very important one, and in that sense is not very efficient, i.e., use of it does not create a great deal more of efficiency.

With respect to redistribution of income, however, more can be said about the kind of price change and quantity change that is necessary if the goal is to be achieved. Let us suppose, for example, that the subsidy under consideration is one on a product, not a factor; and that this product is purchased almost entirely by low-income families, but is produced almost entirely by factors owned by high-income households. Let the demand for the product be very elastic, and the supply, very inelastic. A subsidy paid to the producers will lower the market price by only a small fraction of the subsidy per unit, and output of the subsidized commodity will expand only a little. A substantial redistribution of income has been achieved in a partial equilibrium sense, in that the relative incomes of this group of well-to-do families have increased relative to the incomes of this group of low-income families.

Similarly, if demand were in this instance very inelastic and supply were very elastic, income would be redistributed, in a relative sense, to the low-income families.

It will be recalled that in the present subsection a microanalysis is assumed to be justified in the sense that the feedback from the rest of the economy resulting from the tax that is levied to finance the subsidy is so small, for this one subsidized industry, that we can continue to use, without much error, the supply and demand curves for the industry, as modified only by the subsidy. This state of affairs might hold even if that tax were weighted heavily against the rich, or against the poor. To justify this microapproach to the income redistribution issue, we must further postulate that whatever the tax may be, it is not so heavily concentrated on the rich or the poor as to affect appreciably the conclusions reached by examining only the effects of the subsidy. This is perhaps not too strenuous an assumption to be useful here.

B. A Multiproduct Market (Closed Economy, Perfect Competition)

The effect that a fall in price or an increase in output of a subsidized good or service exerts on the price and output of a closely related but unsubsidized good or service is presumably of more interest to the legislator than is the analogous event under an excise tax, where the rise in price or fall in output of the taxed good or service affects the market for a related but untaxed good or service. A particular excise tax may be selected chiefly because it is an administratively convenient way of raising revenue, while it is scarcely credible that a particular subsidy will be initiated chiefly because it is an administratively convenient way of disposing of revenue. Reallocation of resources or redistribution of income—if not simply pressures from constituents bent on self-aggrandizement—must be foremost in the legislator's mind as he considers a particular subsidy. For both of these objectves any substantial effects on prices and outputs of closely related but not-to-be-subsidized goods and services are indeed relevant.

The following paragraphs outline the main types of reaction to be expected from the markets for closely related but unsubsidized goods and services. It will be seen that at least one of the possible reactions appears paradoxical, and puts the legislator on his guard in considering what otherwise might appear to be an eminently suitable

subsidy. We deal first, however, with the more straightforward possibilities, where the expected results do not offend commonsense.

The fall in market price of a good or service that is subsidized (the subsidy being paid to the seller) will tend to draw consumers away from products for which thes ubsidized item is a good substitute. The sellers of those unsubsidized products come under pressure to reduce their prices, in order to stem the loss of their clientele to the subsidized market. The consequent decline in these unsubsidized prices usually means, however, that some part of the outputs hitherto put on the market will no longer be profitable, assuming that the unsubsidized industries are operating under increasing costs. At least some resources must then flow out of the unsubsidized industries, at the same time as the prices of the products of these industries decline. A part of this outflow of factors may be in the direction of the subsidized industry, but not necessarily so, since our analysis is for the moment concentrated on industries whose products are closely related in consumption, not necessarily in production.

The unsubsidized goods or services whose prices and outputs thus fall upon introduction of a price-lowering subsidy elsewhere are said to be rival in consumption to the subsidized good or service. The subsidized item is a good substitute, from the consumer's point of view if not from society's, for these particular unsubsidized products. In the usual case, then, both prices and outputs of the unsubsidized products respond markedly to the fall in the price of the subsidized product. Outputs thus prove to be elastic with respect to the decline in price of the subsidized good. The "cross-elasticities" of those unsubsidized products with respect to the price of the subsidized good are therefore substantial.

The fall in the price of the subsidized good, S, is owing to the downward shift in the supply curve for S. This induces, in turn, a downward shift in the demand curves for the unsubsidized products U_1, U_2, etc., accompanied, in the usual case, by a reduction in outputs of those related but unsubsidized industries. Elasticity, here, thus involves an actual shifting of the position of supply and demand curves on the usual diagram, not merely the relative change in slope of one of the curves.

Extreme cases are possible. If the supply of the unsubsidized good or service is perfectly inelastic with respect to its own price, consumers who start to desert this unsubsidized industry in order to benefit from the lower price of the subsidized product will be gratified to find that their threatened departure induces the unsubsidized industry to lower its price to whatever level is necessary to retain their customers. Prices in the unsubsidized industries fall by more than in the case of the immediately preceding paragraph, and the redistribution of income by income classes probably becomes greater. In this extreme case there is no change in the output of the unsubsidized industry. Its cross elasticity of supply is zero. To be sure, reallocation effects are not entirely absent. The output of the subsidized industry may still expand. That industry can draw resources from industries other than those that are rival to it in consumption. But there will probably not be as large a reallocation of resources as in the more normal case where the rival-in-consumption industry will lower its prices only along with some outflow of some of its factors of production.

At the other extreme, the rival but unsubsidized industry might be operating under constant industry cost, hence with a perfectly elastic supply curve, which means that it would tolerate no decrease at all in the price of its unsubsidized product. This industry would disappear, under the subsidization of the other industry.

Quite different reactions occur when the unsubsidized products are consumed along with, instead of in rivalry to, the subsidized products (coffee and cream, for example). Now a fall in the price of the subsidized product, if it is accompanied by some expansion in consumption, will increase the demand for the unsubsidized product and will raise its price (unless supply there is perfectly elastic). The two products are said to be complementary in consumption. The cross elasticity is negative, not positive as in the rival case.

When certain unsubsidized industries are related to the subsidized industry not in consumption but in production, the legislator must again be on guard for reallocation and redistribution effects beyond those considered in the one-commodity market of section A above. If both industries make use of the same kind of factor of production, the subsidized industry, if it expands, will pull this factor away from the unsubsidized industry by offering it higher rewards. The resulting decrease in output in the unsubsidized industry, in the face of an unchanged demand, will tend to raise prices there. The two industries are rival in production.

The opposite case is possible, just as with relatedness in consumption. An increase in output in the subsidized industry may actually reduce the cost of producing a given increment of the other product. The industries are then said to be complementary in production.

Now we turn to consider a paradoxical case. Edgeworth, developing the theory of incidence of excise taxes, showed that it is possible for an excise tax on one commodity to lower (not raise) the price of both that commodity and of an untaxed commodity that is rival to it in both consumption and production. Edgeworth first proved the existence of this possibility only for the case of monopoly, but later extended the proof to a purely competitive market. Subsequent writers have explored the precise nature of the supply and demand functions that will cause this result to obtain.[3] By application of this Edgeworth paradox to subsidies, it can be shown that even under perfect competition a subsidy paid to the producers of one of two goods that are rival in both production and consumption will, under certain types of demand and supply functions, raise (not lower) the market price of both the subsidized good and the unsubsidized rival good.

These remarks on the Edgeworth paradox have been restricted to prices. The outcome with regard to amounts consumed (or produced) is more in keeping with our ordinary understanding of the effects of taxes and subsidies. In the tax case, the quantity sold of the taxed good decreases (even though its price, cum tax, has fallen), while the quantity sold of the untaxed good increases.[4] Similarly, the quantity sold of the subsidized good in the paradox case where its price rises will, as we might expect from a subsidy, increase, while that of the unsubsidized good falls.

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[3] For references, see Shoup, *op. cit.*, pp. 277–78, note 25; for a numerical illustration, see *ibid.*, p. 278, note 27.

[4] In the numerical illustration referred to in the immediately preceding footnote, it is seen that the price of the untaxed good falls by more than does the price of the taxed good.

The fact that the paradox case produces unusual price changes but the usual type of quantity changes that might be expected from a subsidy perhaps indicates that this case is troublesome more for the implementation of income redistribution policies than for efficiency policies, or at least output policies. But there is of course no simple correspondence between price effects and income redistribution, or between size of quantity effects and degree of efficiency obtained.

C. Macro Subsidies

If one attempts to analyze a macro subsidy, as that has been defined in No. (9) of section 1 above, in terms of the demand and supply curves used for microanalysis, he finds no tools at hand, since such demand and supply curves are drawn on the assumption that the prices of all other things remain unchanged (Marshall) or that the conditions of supply of all other things remain unchanged (Pigou, Joan Robinson). A broad-based subsidy, one on all wages, for example, cannot be examined industry by industry, since those assumptions obviously will not hold under such a subsidy. The task of even a slight relaxation of those assumptions, implied in the analysis in section B above, is difficult enough, and was in fact not carried through completely there.

Evidently, price and quantity changes in all fields must be examined or worked out simultaneously. This means that some sort of general equilibrium model must be constructed, and this in turn implies that the source of financing for the subsidy must be explicitly specified, else the general equilibrium model will be incomplete.

The construction of macromodels for appraising the price and quantity effects, industry by industry, of a complete fiscal measure—say, a wages subsidy financed by a property tax—has not yet advanced far enough to allow any general statements of importance to be offered here. Even mere directions of change to come from plausible models cannot yet be generalized: e.g., would wages tend to rise and property incomes after tax to fall, under the measure just described? Or might the reverse occur?

The major ends that a macrosubsidy and its allied financing method could serve can be grouped, as can those of the microsubsidies, under the two heads of resource reallocation made desirable by externalities, and income redistribution, provided we include unemployment as a misallocation of resources resulting from externalities.[5] To take an oversimplified but suggestive illustration: Suppose that it is concluded that much of an unemployment rate of say 6 percent is due to an unusually high rate of consumer saving, on the assumption that private investment depends upon either the level of or the rate of change in consumer spending. A macrosubsidy might be given on all consumer spending (but not at all on capital goods or inventory accumulation spending), with notice to the consuming public that the subsidy would be diminished, then withdrawn, and perhaps then transformed into a general consumers tax when inflation occurred if accompanied by full employment. This might prove a powerful instrument to help stabilize consumer spending in a way that even

[5] See J. G. Head, "Public Goods and Public Policy," *Public Finance*, No. 3, 1962. vol. XVII. p. 217: ". . . in this more general sense, nonappropriability or impossibility of exclusion also accounts to a considerable extent for Keynesian and post-Keynesian vagaries of aggregate demand and supply and their associated inefficiency concepts of unemployment 'equilibrium' and inflation."

large changes in income tax stare seem unlikely to do, since the consumer would here be faced with a substitution effect through time.

The externalities category might also be defined to include the beneficial effects that would come from decreasing the structural imbalance between labor and capital, or the geographically unsuitable distribution of labor, that is said to be part of the cause of heavy urban unemployment in the less developed countries. Just what type of macrosubsidy would be best suited to rectify these macro failures of the market, and what type of financing it should have, are questions beyond the scope of the present analysis.

Income redistribution on a large scale can no doubt be accomplished by macrosubsidies financed appropriately, but as suggested above, the actual pattern achieved may be difficult to predict. It would seem that for redistribution alone, and on a considerable scale, welfare payments (with appropriate financing) would be more certain to achieve the aim.

D. Open Economy

If we enlarge the scope of the analysis to include the case of an open economy, that is, one engaged in foreign trade, it is possible to say something about the incidence of even broad-based subsidies without specifying the financing instrument, provided the analysis is confined to broad groupings: foreign consumers and foreign producers of the subsidized item, domestic consumers and domestic producers of it, and the same categories with respect to export-competing and import-competing items. What can be said depends on what is assumed about the elasticities of foreign demand and supply, and whether the subsidy applies domestically also (or only).

The items in question are likely to consist almost entirely of farm, raw-material and manufactured goods at their value as they leave the place of production and a certain amont of services connected with foreign trade, notably some insurance, banking, wholesaling and transportation services. A large number of important sectors are excluded as being little if at all engaged in foreign trade: retail services, services of most professionals, and certain types of transportation. Moreover, a subsidy on a certain narrowly defined factor is also likely to lie largely outside the foreign trade sphere.

Let us assume, to begin with, that the subsidy is applied to domestic production for domestic use as well as to domestic production for export, or, as the case may be, to imports. The general rule then is that the benefits of the subsidy are less widespread if the foreign demand is perfectly elastic, or if the foreign supply is perfectly elastic, than if something less than perfect elasticity prevails.

This rule can be explained in terms of a subsidy on a good that is both exported and consumed domestically. Let the foreign demand be perfectly elastic, because the country furnishes but a small part of the world's supply, and let the domestic demand be less than perfectly elastic, the normal case. Let the subsidized industry operate under increasing costs. Price to the foreign market remains unchanged under the subsidy, so producers obtain a rise in price (market price plus subsidy) equal to the subsidy per unit. Domestic consumers do not benefit, since the price to them does not fall, as long as the world market will take all the additional output stimulated by the subsidy without weakening. Foreign consumers get no reduction in price. The

benefit of the subsidy is concentrated on the domestic producers, that is, on the factors working in the subsidized industry, including those newly brought into the industry through the subsidy.

If, however, the country is so large a supplier of the world market that foreign demand for its product is less than perfectly elastic, the export price falls somewhat when a subsidy is paid to the domestic producers and they expand their output. Domestic consumers enjoy this lower price, too. The benefits of the subsidy, in terms of changes in price, are spread more widely when foreign demand is less than perfectly elastic. Moreover, foreign producers are disadvantaged.

If the subsidy on this exportable commodity were limited to what was produced for domestic consumption, domestic price would fall by the full amount of the subsidy, under a perfectly elastic foreign demand, and as long as some of the commodity was exported. Producers would not benefit at all from the subsidy, and total production in the subsidizing country would be unchanged. A smaller proportion of that output would be exported.

Similar reasoning will show that with respect to imports a country can indeed lower the price of a certain class of imports to its consumers by the full amount of a subsidy paid on imports and on domestic production of the same product, provided that the foreign supply of this good to this country is perfectly elastic in supply within the relevant range. An example might be a small country that desired to reduce the cost of a certain foodstuff to its consumers, this foodstuff being imported only, or both imported and produced locally for local consumption. But if the import supply is somewhat less than perfectly elastic, the Government cannot keep part of the benefit of the subsidy from accruing to the foreign producers, and to domestic producers also, in the form of a decline in the market price of the good that is somewhat less than the subsidy per unit.

A subsidy on all exports whatsoever is simply a one-sided devaluation of the country's currency for trade purposes, as distinct from movements of capital funds and investment income flows, remittances, and the like; in effect, it introduces two rates of exchange for trade, one for exports and another for imports. A subsidy on all imports, which seems never to have been seriously suggested, is equivalent to a one-sided upward revaluation of the country's currency for trade purposes.

E. Decreasing Cost to the Firm; Subsidy to a Monopoly

A firm that produces at a marginal cost less than its average cost will of course find its average cost declining as its output increases, and it reaches equilibrium either as a monopolist or as one of a group of firms in imperfect competition. In any event it cannot cover all its costs by selling at marginal cost, yet to charge more than marginal cost is to deprive some consumers of a service the incremental cost of which they are willing to defray. From an economic efficiency point of view the case is one where the final product, say a ride on a train, is made possible partly by an input (roadbed and terminal, for example) that is essentially a public good like a city street in the collective consumption sense; within the given capacity limit, the addition of one more user does not increase the cost of constructing the street, though it may increase the cost of maintaining it. If the Wicksell-

Bowen principle, or, as more recently termed, the Samuelsonian principle, of adding demand curves vertically for each increment in capacity could be implemented, the infrastructure, or fixed part of the productive apparatus could be paid for by prospective users, the amount each pays depending on his skill in bargaining for his part of the consumer surplus on the inframarginal increments. A margin of capacity would be reached that would just be covered by agreement among the users (capacity is employed in a broad sense, including degree of beautification, amenities, and the like). A marginal cost charge could then be made, in addition, for every user of the service, to cover the maintenance cost he caused, including users who had not thought it worth their while to contribute anything to the capacity financing. An efficient use of resources, in the Pareto-optimal sense, would be achieved under marginal cost pricing without any subsidy.

But, given the virtual impossibility of getting prospective users together to agree on the financing of the fixed element, common practice in the private sector, including here Government business enterprises, is to restrict output to a level that will command a price that will cover average cost at that level of service. To expand output to a Pareto optimal level, subsidies are suggested to cover the fixed cost and to allow price to be set at marginal cost.

The real-life problem is of course more complex than this, as for example when marginal cost itself varies, but the general issue is plain enough. Economic efficiency will be enhanced, provided that the tax financing the subsidy does not itself create too much excess burden and cost too much to collect. In principle, enough extra output will be obtained to allow the community to compensate the taxpayers with something left over, but in practice this involves collecting from persons and under circumstances similar to those that have been assumed to make impossible the communal type of financing suggested above. Over the large number of cases of this kind, it may perhaps be assumed that the losers on one project will be the gainers on another, so that equity will not be too much damaged, if at all, by marginal cost pricing supplemented by a subsidy raised by the least economically damaging form of taxation.

This is a powerful argument for a subsidy, yet oddly enough it seems difficult, if not impossible, to find a real-life subsidy of much consequence that has been adopted on these grounds. Perhaps Government take-overs of bankrupt transportation systems is a hidden, or confused, or subconscious acknowledgment of the merits of the argument, at least if the Government continues to accept a deficit that is accompanied by something not far from marginal cost pricing.

The subsidy sketched here would not of course be a fixed subsidy per unit of output, but a lump-sum subsidy conditioned on the use of marginal cost pricing to expand output to an optimal level. If indeed a monopoly is for whatever reason given a per-unit subsidy, the analytical results described in section III–A above cannot be carried over to the monopoly case.

First, the four extreme cases of perfectly inelastic supply or demand, or perfectly elastic supply or demand, cannot obtain under a monopoly. A monopoly has no supply schedule; it has no list of quantities that it will sell at various prices, for its choice of level of output will depend on how its marginal cost compares, not with price, but with marginal revenue. It will never set its output at a level that is associated with a

demand of less than unit elasticity, since from such a point it can always make more money by raising its price and reducing its total cost by reducing output (its gross revenue increases while its total cost falls). And a perfectly elastic demand means that the buyer can turn to a perfect substitute at that price, which contradicts the concept of a monopolized good or service.

Second, under any cost conditions a per-unit subsidy will induce a monopolist to increase his output, and price to the buyer will consequently fall.

Third, if the monopoly operates in a region of constant cost, price to the buyer falls by only a fraction of the subsidy, not by the full amount of the subsidy, as under competition. The balance of the subsidy goes to increase the monopolist's profit, which is not a factor reward in the sense of an economically necessary payment to induce effort or waiting.

Fourth, if marginal cost to the monopolist is increasing, a per-unit subsidy may cause the price to the buyer to fall by an amount larger than the subsidy, which it will not do under competition.[6]

F. Capitalization of a Subsidy

Some subsidies are payable to the owner of a particular instrument of production, or durable consumer good, not once and for all, but periodically, whether or not ownership has changed hands since the subsidy started. The selling price of this piece of equipment or parcel of land will reflect its power to yield subsidy payments. If this durable good is fairly short-lived and is reproducible, the resale price will not be higher, by the full amount of the present value of the subsidy payments yet to be made, than it would have been in the absence of the subsidy, since competition may be counted on to keep the price no higher than cost of production less actual depreciation. But if the durable good is not reproducible, and has a life stretching over more than one accounting period (subsidy-payment period), its resale price at any time may be expected to be higher by the discounted value of the stream of subsidy payments yet to come to whatever firm or person owns it, and uses it in a manner specified by the subsidy law. In that event, the one who benefits from this series of subsidy payments stretching over many years, or indefinitely, is the owner at the time the subsidy was enacted, or was expected to be enacted. The most striking example in the United States is that subsidy, in the farm program, given to the owner of a particular parcel of land that is allotted to the growing of a particular crop.

The subsidy can still be stimulative; that is, it can still induce the current owner to comply with the terms of the subsidy law, even though he is not benefiting from the subsidy system, because he paid for the stream of subsidies in the price of the land. He stands to lose the subsidy if he does not comply with the subsidy law.

The parcel of land, its value thus enhanced by the prospective stream of subsidy payments, is that much more useful as collateral in obtaining a loan. Thus, over the years, for all such parcels, there tends to be built up a network of innocent vested interests, in so far as we are willing to agree that the buyers and the lenders had a right to assume that the subsidy law would remain unaltered. And even if one does not

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[6] See Carl S. Shoup, *op. cit.*, p. 156, and pp. 276-278. Four other differences, valid only for a small change in a subsidy, are not given here; for their analogues in taxation, see *ibid.*, p. 277.

take that point of view, it is certain that the owner and the creditor will advance it vigorously. Such a subsidy becomes extremely difficult to remove, politically.

IV. Costs of a Subsidy

The benefits obtained from a subsidy in the way of reallocation of resources or by redistribution of income are offset in part by the resources used up—the manpower, materials, and other inputs that could be used to produce something else—in administering the subsidy, and in complying with it (the subsidy recipient may have a good deal of bookkeeping to do, for example), and the administration of, and compliance with, whatever tax or other financial measure is used to finance the subsidy; plus, finally, the excess burden, if any, caused by that tax. This last point refers to the fact that almost any tax that will yield an appreciable amount of revenue will induce persons and firms to consume and produce in tax-minimizing patterns, which they would not employ in the absence of the tax. They obviously prefer the latter patterns, and the loss in satisfaction or efficiency that they suffer from using the tax-minimizing patterns is an excess burden—excess, in the sense that it is in addition to the burden that the taxpayer feels in actual payment of the tax. It is also excess in another sense: it accomplishes nothing, even for the taxpayer, since the Government, finding that the revenue is not up to what it needs, or anticipating that it will not be, owing just to these tax-avoidance methods, increases the rate of tax enough to make up the difference.

The budgetary cost of the subsidy, the amount paid out to the subsidy recipient, is offset by the subsidy flow to the recipient; he gains what the taxpayer loses (if we abstract from problems of interpersonal comparison of utility). Hence, there is no real net cost to the economy as a whole on this score. But that fact does not make it easy for the politician who, representing various conflicting interests at least in a redistributive subsidy, and even in an efficiency study when compensation is not in fact going to be made to the initial losers (taxpayers, chiefly), must somehow decide which way to vote on the proposal. There is a political cost, or a social cost, in terms of dissent aroused and expectations disappointed, that cannot be ignored in a complete social accounting.

From the gross budgetary cost of the payments made under the subsidy, there is often an automatic recoupment, through the existing tax system, of a part of the subsidy total, since the subsidy may serve to increase, directly or indirectly, certain taxable incomes or (as with a capitalized subsidy) taxable properties, or, if the subsidy is paid directly to buyers and if an excise tax is levied on market price, certain taxable transfer values.

If the subsidy is not a cash payment, but instead takes the form of a tax subsidy, the computation of the subsidy money cost can be somewhat complex, if one assumes that the rate of the tax in question is higher than it would be otherwise, just because the subsidy element injected into it has weakened its yield at the presubsidy rates. To be sure, we commonly do not know what the ex-subsidy tax rate would be. But if the tax structure is simple, we may be able to deduce it. For example, let the tax subsidy take the form of a deduction from taxable income, and let the income tax be at a uniform rate. If r_s

is the tax rate in force when the tax subsidy obtains, d_a is the deduction allowed to the subsidized person A in a simple two-man economy, y_a is the taxable income of A before the deduction in question, and y_b is the taxable income of the other person in the economy, B, the gross cost to the Government in tax lost, C_s, is:[7]

$$C_s=\frac{d_a r_s(y_a-d_a+y_b)}{y_a+y_b}$$

V. Evaluation of a Subsidy

The decision whether a certain subsidy is to be given, and if so at what rate, is in principle to be made by comparing the present value of future costs in those periods that show a net cost (excess of costs in that period over benefits in that period) with the present value of net benefits in those periods that show a net benefit (excess of benefits in that period over costs in that period). This computation requires choice of a discount rate, a problem that has been argued at length and that will not be discussed here. The comparison is to be made increment of subsidy by increment (that is, as the subsidy rate is moved up, in the planning stage), until the last increment of subsidy does not exceed the increment of benefit associated with it.

Aside from this formal rule, there is little that can be said on this score about subsidies in general, and the reader is referred to the special study papers dealing with particular subsidies, to obtain an understanding of the problems encountered in evaluation.

Alternative ways of reaching the same goals must of course be considered; for example, free distribution of a good or service, with direct rationing, or queuing. But it is not likely that any nonsubsidy method can be constructed that will yield just the same pattern of benefits as does a subsidy, which works through the market mechanism. Some appeal to a higher standard of evaluation must be made in choosing between the techniques; the benefits gained by the subsidy but not obtainable in that pattern under direct rationing become the opportunity cost of the direct rationing, and vice versa.

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[7] This formula is derived as follows. For equal yield, if r is the tax rate before the tax subsidy is introduced, we have:

$$r(y_a+y_b)=r_s(y_a-d_a+y_b)$$

Therefore,

$$r=\frac{r_s(y_a-d_a+y_b)}{y_a+y_b}$$

and the true cost of the tax subsidy, defined as the initial (presubsidy) tax rate times the deduction from taxable income, is

$$\frac{d_a r_s(y_a-d_a+y_b)}{y_a+y_b}.$$

TAX SUBSIDIES AS A DEVICE FOR IMPLEMENTING GOVERNMENT POLICY: A COMPARISON WITH DIRECT GOVERNMENT EXPENDITURES

By STANLEY S. SURREY*

Suggestions are constantly being made that many of our pressing national problems can be solved, or partially met, through the use of income tax subsidies. Moreover, the present Federal income tax is replete with tax subsidy provisions. Some were adopted to assist particular industries, business activities, or financial transactions. Others were adopted to encourage nonbusiness activities considered socially useful, such as contributions to charity. This paper will deal with the question of whether these tax subsidies—or tax incentives as they are sometimes called—are as useful or efficient an implement of social policy as direct Government expenditures, such as grants, loans, interest subsidies, and guarantees of loans. The discussion will be in terms of the Federal income tax, but it is intended to be helpful for other jurisdictions and other forms of taxation as well.

The first part of this paper presents a brief description of the tax subsidies, in the context of describing the tax expenditure budget, and provides a list of items in that budget. This part also summarizes the uses to which such a budget can be put.

The second part presents a comparison of tax subsidies or tax incentives with direct Government expenditures as a device for implementing Government policies.

The third part suggests the approaches necessary to replace tax subsidies with direct governmental assistance.[1]

An overall comment will serve as an introduction to the situation. Since 1969 the list of these tax subsidies has grown larger with both the Treasury Department itself, forces within the Congress, and outside groups pushing new subsidies into the tax system.[2] Obviously a

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[1] The text discussion is based in part on Surrey, "Tax Incentives as a Device for Implementing Government Policy: A Comparison With Direct Government Expenditures," 83 Harvard Law Review 705 (1970), and a version of that article written earlier but published later, "Tax Incentives—Conceptual Criteria for Identification and Comparison With Direct Government Expenditures," in "Tax Incentives, a Symposium Conducted by the Tax Institute of America, Nov. 21-22, 1969," published by D.C. Heath & Co. (1971), pp. 3-38; Surrey, "Federal Income Tax Reform: The Varied Approaches Necessary To Replace Tax Expenditures With Direct Government Assistance," 84 Harvard Law Review 352 (1970).

[2] The Tax Reform Act of 1969 introduced the following tax subsidies: 5-year amortization for pollution control facilities, housing rehabilitation expenditures, railroad rolling stock, and coal mine safety equipment; deferral of capital gain on sale to occupants of certain low-income housing. The Treasury promoted the rehabilitation expenditure provision, and with HUD the deferral of capital gain referred to. The 1969 act repealed the 7 percent investment credit for machinery and equipment.

The 1971 act introduced the following tax subsidies: restoration of the 7 percent investment credit; a class life system for depreciation of machinery and equipment, currently based on the use of the thirtieth percentile experience as of 1962 (starting at the shorter pole), abandonment of a reserve ratio test requiring attention to a taxpayer's own experience, and with permission to the Treasury to grant a 20-percent shorter class life; a preferential treatment of income from exporting (DISC), which in practical operation will exempt one-half of that income from tax; 5-year amortization for the construction of facilities for employer on-the-job training programs and child care facilities; a large increase in the child care deduction, including household expenses; a tax credit to employers who employ persons certified by the Secretary of Labor as having been placed in employment under work incentive programs (WINS); a tax credit and deduction for political campaign contributions; and a slight extension of the use of industrial development bonds

The conference committee on the 1971 act rejected the following Senate amendments: a system of credits and rebates for postsecondary school education; a tax credit for elderly persons for property taxes on their residences or rent constituting property taxes; an extra exemption for disabled persons; a 10-percent credit for investments in rural or central city job development assets.

The bulk of the permanent 1971 act provisions in the income tax area involved the tax expenditure area, with the principal exceptions being the increase of the low-income allowance to $1,300 and adjustments in withholding schedules.

The Treasury promoted the business subsidies of the investment credit, increased depreciation allowances, and DISC. It apparently did not object, or strongly object, to the employer job credit, much of the child care deduction increases, or the tax credit and deduction for campaign contributions.

Treasury determined to use the tax subsidy mechanism in situations that suit its objectives is in a more difficult position when it comes to opposing tax subsidies proposed by others. The major part of the permanent changes in the income tax provided by the 1971 act—both as to revenue and space in the tax law—involved new subsidies. With respect to these new subsidies it can generally be said that less critical analysis is paid to them than to almost any direct program one can mention. The tax subsidies tumble into the law without supporting studies, being propelled instead by cliches, debating points, and scraps of data and tables that are passed off as serious evidence. A tax system that is so vulnerable to this injection of extraneous, costly, and ill-considered expenditure programs is in a precarious state from the standpoint of the basic tax goals of providing adequate revenue and maintaining tax equity. It is therefore imperative that the process and substance of these tax subsidies be reexamined.

I. The Nature and Extent of Existing Tax Subsidies—The Tax Expenditure Budget

A. The Tax Expenditure Budget

The Federal income tax system consists really of two parts: one part comprises the structural provisions necessary to implement the income tax on individual and corporate net income; the second part comprises a system of tax expenditures under which governmental financial assistance programs are carried out through special tax provisions rather than through direct Government expenditures. This second system is simply grafted on to the structure of the income tax proper; it has no basic relation to that structure and is not necessary to its operation. Instead, the system of tax expenditures provides a vast subsidy apparatus that uses the mechanics of the income tax as the method of paying the subsidies. The special provisions under which this subsidy apparatus functions take a variety of forms, covering exclusions from income, exemptions, deductions, credits against tax, preferential rates of tax, and deferrals of tax. The tax expenditure budget, included herein as table 1, identifies and in some instances quantifies the existing tax expenditures. This tax expenditure budget is essentially an enumeration of the present "tax incentives" or "tax subsidies" contained in our income tax system.

Table 1.†—*Tax expenditures, fiscal year 1971 (by budget function)*

	Millions
National defense:	
Exclusion of benefits and allowances to Armed Forces personnel	$500
International affairs and finance:	
Exemption for certain income earned abroad by U.S. citizens	40
Western Hemisphere trade corporations	50
Exclusion of gross-up on dividends of less-developed country corporations	55
Exclusion of controlled foreign subsidiaries	165
Exclusion of income earned in U.S. possessions	
***Partial exemption of export income (DISC)	[a] 170
Total	570

TABLE 1.†—*Tax expenditures, fiscal year 1971 (by budget function)*—Continued

	Millions
Agriculture and rural development:	
*Farming: Expensing and capital gain treatment	$820
Timber: capital gain treatment for certain income	130
Total	950
Natural resources:	
Expensing of exploration and development costs	325
*Excess of percentage over cost depletion	980
*Capital gains treatment of royalties on coal and iron ore	5
***5-year amortization of pollution control facilities in pre-1969 plants*	[a] 120
***5-year amortization of coal mine safety equipment*	[a] 1
Total	1, 431
Commerce and transportation:	
***Investment credit**	[a] 3, 600
*Excess depreciation on buildings (other than rental housing)	500
Dividend exclusion	280
*Capital gains: Corporation (other than agriculture and natural resources)	425
*Excess bad debt reserves of financial institutions	380
Exemption of credit unions	40
Deductibility of interest on consumer credit	1, 700
Expensing of research and development expenditures	540
*$25,000 surtax exemption	2, 000
Deferral of tax on shipping companies	10
***5-year amortization of railroad rolling stock*	105
***Class lives for depreciation—20 percent reduction**	[a] 2, 400
Total	11, 980
Community development and housing:	
Deductibility of interest on mortgages on owner-occupied homes	2, 800
Deductibility of property taxes on owner-occupied homes	2, 900
*Excess depreciation on rental housing	255
***5-year amortization of housing rehabilitation expenditures*	[a] 330
***Deferral of capital gain on sale to occupants of certain low-income housing*	(1)
Total	6, 285
Income security:	
Disability insurance benefits	130
**Provisions relating to aged, blind and disabled:	
Combined cost for additional exemption for aged, retirement income credit, and exclusion of social security payments	2, 950
**Additional exemption for blind	10
"Sick pay" exclusion	105
Exclusion of unemplyoment insurance benefits	400
Exclusion of workmen's compensation benefits	210
Exclusion of public assistance benefits	50
Treatment of pension plans:	
Plans for employees	3, 075
Plans for self-employed persons	175
Exclusion of other employee benefits:	
Premiums on group term life insurance	440
Deductibility of accident and death benefits	25
Privately financed supplementary unemployment benefits	20
Meals and lodging	170
Exclusion of interest on life insurance savings	1, 050

[1]Not available.

TABLE 1.†—*Tax expenditures, fiscal year 1971 (by budget function)*—Continued

	Millions
Income security—Continued	
*Deductibility of charitable contributions (other than education)	3, 550
***Deductibility of child and dependent care and household expenses	[a] 145
Deductibility of casualty losses	80
**Standard deduction	3, 000
**** Total	15, 585
Health:	
Deductibility of medical expenses	1, 700
Exclusion of medical insurance premiums and medical care	1, 450
Total	3, 150
Education and manpower:	
**Additional personal exemption for students	500
*Deductibility of contributions to educational institutions	200
Exclusion of scholarships and fellowships	60
***5-year amortization of employer child care and on-the-job training facilities	(1)
***Credit for employment of public assistance recipients under WIN Program	[a] 25
Total	785
Veterans benefits and services:	
Exclusion of certain benefits	650
Aid to State and local governments:	
***Exemption of interest on State and local debt	2, 300
Deductibility of nonbusiness State and local taxes (other than on owner-occupied homes)	5, 600
Total	7, 900
Election process:	
***Credit and deduction for political contributions	[a] 90
The 1968 Treasury table contained the following:	
*Capital gains—Individual income tax: Special provisions (increase in basis at death: exclusion of one-half of long-term gains: maximum tax rates of 25 percent on long-term gains)	5, 500–8, 500

[1] Not available.

NOTE

† *Source:* Statement of Hon. Murray L. Weidenbaum, Assistant Secretary of the Treasury, reprinted in Annual Report of The Secretary of the Treasury on the State of the Finances, Fiscal Year 1970, pages 306–308, and table in Cong. Record, S18764, Nov. 16, 1971 giving 1971 data.

An item listed under "Education and Manpower, that of educational expense deduction", $40 million, is here omitted. It is understood that this item was included in error. The item refers to those expenses for education qualifying as trade or business expenses and hence allowable under the interpretation given to the general deduction for business expenses allowed under section 162 of the Internal Revenue Code.

Explanation: The items printed in bold italics were added by the 1969 Act. The items printed in bold type were added by the 1971 Act. The items marked with a single asterisk (*) involve reductions under the 1969 Act, as explained below. The items marked with a double asterisk (**) involve increases under the 1969 Act, as explained below. The items marked with a triple asterisk (***) involve increases under the 1971 Act. The items marked with a quadruple asterisk (****) involve decreases under the 1971 Act. The estimates marked with (*a*)

are for fiscal years other than 1971, as explained below. (The above were not in the source table.)

The *single asterisk* items are explained below; the changes stem from the 1969 Act. The minimum tax on individuals and corporations affects a number of items, *i.e.*, those included as preferences, such as accelerated depreciation on buildings, capital gains, percentage depletion, stock option compensation, excess bad debt reserves and the five-year amortization provisions. But the overall effect is minor, with a revenue gain after transition of $285 million from individuals and $350 million from corporations.

Farming: A slight reduction in tax benefits will result.

Percentage Depletion: The percentage depletion rates have been reduced, for example, from 27½ to 22% for oil, with an estimated revenue increase of $235 million.

Depreciation on Buildings: Accelerated depreciation on non-residential buildings has been lessened and recapture rules tightened, which should markedly reduce the table figure.

Capital gains: Corporations: The alternative rate on corporate capital gains has been increased to 30%, with a revenue increase, including agriculture and natural resources, of $175 million.

Excess Bad Debt Reserves: Over a long transition period, the deductions for excess reserves of commercial banks are eliminated, and those for mutual savings banks and savings and loan associations materially reduced.

$25,000 surtax exemption: Multiple surtax exemptions are eliminated over a transition period, with a revenue increase of $235 million.

Excess depreciation on rental housings: Minor changes lessen accelerated depreciation on certain used residential housing and increase recapture on non-low income housing.

Charitable Contributions: The various changes do not affect the basic charitable deduction but do eliminate a number of abuses. The 1968 Treasury Table included "untaxed appreciation" on contributions in kind under charitable contributions, and also educational contributions, and this is apparently also true for the 1969 Treasury Table though not explicitly stated as in 1968.

Educational Contributions: The various changes do not affect the basic deduction for educational contributions but do eliminate a number of abuses.

Capital Gains: Individuals: The maximum rate on capital gains is increased to 35% (continues at 25% for aggregate gains up to $50,000), with a revenue increase of $275 million. A limitation on deduction of large amounts of interest incurred to carry investment assets has a minor effect, with a revenue increase of $20 million. The estimate is for 1969.

The *double asterisk* items involve:

New items:

Pollution control facilities (estimate after transition ended).
Coal mine safety (estimate after transition ended).
Housing rehabilitation (estimate after transition ended).
Railroad rolling stock (estimate after transition ended).

Existing items:

Additional exemption for aged: The additional exemption is increased to $750.

Additional exemption for blind: The additional exemption is increased to $750.

Standard Deduction: The amount of the standard deduction is increased to 15%, or a maximum of $2000, with a revenue loss after transition of $1.6 billion.

Additional Personal Exemption for Students: The additional personal exemption for students is increased to $750.

The *triple asterisk* items involve:

New items:

Restoration of investment credit, after repeal in 1969 (fiscal year 1973 estimate).

Five-year amortization of employer on-the-job training and child care facilities (no estimate given).

Partial exemption of export income (DISC) (fiscal year 1974 estimate).

Class lives for depreciation—20% reduction in lives (fiscal year 1973 estimate covers only the 20% reduction; no estimate made available on effect of dropping reserve ratio test and using 30th percentile for class lives).

Employment of public assistance recipients under Work Incentive Program (WIN) (fiscal year 1973 estimate).

Political contributions (fiscal year 1973 estimate). (Note—the check-off system is not here included; it is a tax expenditure in the sense that "votes" of taxpayer are relevant but no direct tax reduction is involved.)

Existing items:

Child and dependent care: The amount of the deduction was increased to $4,800, the income limit increased to $18,000–$27,600, eligibility extended and household expenses added (fiscal year 1973 estimate).

Exemption of interest on state and local debt: The limitations on industrial development bonds were slightly relaxed.

The *quadruple asterisk* items involve:

Existing items:

Standard Deduction in Excess of Minimum: The low income allowance (minimum standard deduction) was increased to $1,300, and this automatically reduces the standard deduction in excess of the minimum (fiscal year estimate). The estimate does not include this last change.

The tax expenditure concept in essence considers these special provisions as composed of two elements: the imputed tax payment that would have been made in the absence of the special provision (all else remaining the same) and the simultaneous expenditure of that payment as a direct grant to the person benefitted by the special provision. The exemption, deduction or other type of tax benefit is thus seen as a combined process of assumed payment by the taxpayer involved of the proper tax and an appropriation by the Government of an expenditure made to the taxpayer in the amount of the reduction in his actual tax payment from the assumed payment, that is, the tax reduction provided by the special provision.

The list of these tax expenditures here used for the purpose of discussion is based on that drawn by the Treasury for the fiscal year 1969, but brought up to date. The additions made by the 1969 Reform Act are printed in bold italics and those made by the 1971 Act are printed in bold type. The estimates are at 1971 levels unless otherwise indicated, with various asterisks indicating reductions and increases caused by the 1969 and 1971 Acts. These notations are explained briefly in a footnote.

If we take as our definition of tax incentive a tax expenditure which induces certain activities or behavior in response to the monetary benefit available, almost all of the tax expenditures included in that budget can be considered tax incentives. Many of the tax expenditures were expressly adopted to induce action which the Congress considered in the national interest. For example, the investment credit, adopted in 1962, suspended for a period in 1966–67, repealed in 1969, and restored in 1971, was intended, along with greatly accelerated depreciation adopted in 1971, to encourage the purchase of machinery and equipment; the DISC exemption for exports was adopted to encourage exporting; excessive bad debt reserves for some financial institutions were allowed in order to encourage the growth of savings and loan associations and mutual savings banks; the charitable deduction was intended to foster philanthropy; the campaign contribution deduction and credit were intended to foster political contributions; the preferential tax treatment of qualified pension plans was intended to foster broad pension plan coverage; the corporate surtax exemption was intended to foster small business; and the 5-year amortization of the cost of rehabilitated housing, employer on-the-job training facilities and child care facilities, pollution control facilities, railroad

rolling stock and coal mine safety equipment, was intended to foster these activities and purchases of these items.[3] Other tax expenditures whose origins were cloudy because of their antiquity and absence of articulation of initial intentions, are now defended on incentive grounds, such as the incentive to home ownership in the case of the deduction for mortgage interest and property taxes, or the assistance to State and local governments in easing the way to the imposition of their taxes, as in the case of the deduction for State and local taxes.

Other tax expenditure provisions were originally adopted as "relief provisions" to ease "tax hardships" or to "simplify tax computations." As their effects on the tax system have become clearer, some of these provisions have come to be defended on the basis of their incentive effects: for example, the intangible drilling expenses deduction, the percentage depletion allowance, the Western Hemisphere Trade Corp. preferential rate, and the research and development expense deduction.[4] Moreover, to the extent that such "tax relief"—i.e., tax treatment that is special and not required by the concept and general standards of a net income tax—is granted for an activity that is voluntary, the relief is in effect an incentive to engage in that activity, even though the provisions may not be defended on incentive grounds. For example, if meals and lodging furnished an employee on the premises of an employer are not taxed, the effect is to make employees more likely to choose such employment. If coal and iron royalties receive capital gains treatment and other royalties do not, investment preferences will be affected.[5]

The only tax expenditures that are not tax incentives, as the latter expression is here used, are expenditures related to involuntary activities of taxpayers. Most such provisions are designed to provide tax reduction in order to relieve misfortune or hardship—situations involving "personal hardships", as contrasted with the "tax hardships" that have brought about other special tax provisions, chiefly for business activities. The extra personal exemption for the blind is one example. The extra personal exemption for the aged is another—we can't grow old any faster because of the exemption. Perhaps the other tax benefits for the aged—the retirement credit and the exclusion of social security annuity payments—also fall in this nonincentive category. This is not so clear, however, since the line between "tax incentive" and "relief for personal hardship" is fuzzy. The retirement credit provides some incentive to retire. Also, favoring retirement income may encourage saving for retirement. The employee sick pay exclusion may be in the nonincentive class, since sickness is presumably involuntary, yet the provision can have the incentive effect of inducing employers to provide such plans or unions to negotiate for such plans. The general medical expense deduction similarly has nonincentive characteristics, yet the presence of the deduction does tend to induce the purchase of health insurance and the greater use of

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[3] Other tax expenditures in this class of special tax provisions adopted with the express intention of inducing desired action include the treatment under the foreign tax credit of dividends paid by the corporations of less developed countries, capital gains treatment in general, the exemption of credit unions, the special treatment of timber capital gains, the $100 dividend exclusion, the deduction for one-half of medical insurance premiums, the exclusion for certain group life insurance, the exclusion of certain income earned abroad, and the deferral of tax on shipping companies. Accelerated depreciation on real estate is another example, although it was originally adopted largely as a happenstance along with accelerated depreciation provisions for investment in personal property.

[4] Additional examples include the bad debt reserves for banks, the cash method of accounting for farmers, and the special personal exemption for students.

[5] Incentive effects are also produced by the exemption of military pay earned in combat zones.

medical services and equipment. The exclusion of unemployment insurance and public assistance benefits also has nonincentive characteristics, if we regard unemployment and need for public assistance as essentially involuntary conditions. Yet for some individuals the generality will not hold, and the tax result will add to the monetary inducement which makes the condition acceptable. The casualty loss deduction is also generally not an incentive, though in particular cases may induce certain action that would otherwise be too risky, such as self-insurance, or ownership of a house in a hurricane area.

Special provisions designed to relieve personal hardships, as contrasted with tax incentive provisions, are relatively few in number. By and large, therefore, the classification guidelines underlying the tax expenditure budget which separate tax expenditures from other tax provisions also serve to identify existing tax incentives and tax subsidies. The tax expenditure budget may thus be used as an enumeration of those tax incentives.[6] Moreover, a classification between "tax incentive" financial assistance and "tax relief" financial assistance to alleviate the difficulties caused by personal hardships is not really essential for the purposes of this analysis. All of what is said as to the comparison of tax incentives with direct expenditures applies equally to the "tax relief" expenditures.

Recently proposed tax expenditures are mostly in the tax incentive category. They include manpower training or employment deductions and credits, educational expense credits, tax benefits for business investment in central cities or rural areas. In all these situations the direct purpose of the proposed tax change is to provide monetary assistance or benefit through the tax laws so as to make the desired course of action financially more palatable to taxpayers involved, and thereby induce them to take that action. Whatever the aim of the economic benefit involved—be it to make an expensive activity less costly, to reduce its risk, or to increase the rate of after-tax profit—the incentive effect is the desired effect.

B. Some Uses of the Tax Expenditure Budget

I turn now from the tax expenditure budget itself to the uses to which such a budget may be put. For what purposes of tax policy is it a useful tool? For what purposes of expenditure policy is it a useful tool? What questions does it help us to formulate and ask? What questions does it help us to answer?

Overall consideration of the income tax tax revision and tax reform.—In the past, legislative efforts at revision or reform of the income tax

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[6] Prof. Henry Aaron has compiled another inventory of existing tax incentives, arranged according to the types of economic decisions which the tax provision influences. Aaron, Inventory of Existing Tax Incentives: Federal, in Tax Incentives, a symposium conducted by the Tax Institute of America, November 20–21, 1969, published by D. C. Heath and Co. (1971) pages 39–49. He uses the term tax incentive to denote any tax provision which is "defended or advocated primarily because it so alters resource allocation as to improve economic efficiency." He excludes "tax provisions defended primarily because they are alleged to have favorable effects on the distribution of income by income class, family status, age groups or other socio-economic categories." Thus, he would exclude tax expenditures for aged and the blind. His tax incentives fall into three main categories: those influencing household behavior—spending patterns (for example the charitable contributions deduction), place of employment (for example the exemption of certain income earned abroad), portfolio choice (for example capital gains), or occupational choice (for example exclusion of certain military benefits and allowances); business behavior—investment in capital (for example the investment credit), composition of the wage offer (for example the exclusion of employer contributions to pension plans), industrial composition (for example the tax benefits to agriculture and natural resources), business location (for example the Western Hemisphere Trade Corporations provision), or legal form of business (for example the exemption of credit unions); and State and local government behavior—sources of finance (for example deductibility of State and local taxes).

For a discussion of incentives in State and local taxes, see Slater, in Tax Incentives, op. cit. supra, pages 51–57.

have generally looked upon that tax as a unitary structure, a bundle of complex tax provisions making up the income tax. But the tax expenditure budget tells us that the income tax is really composed of two structures. One is the structure necessary to the imposition of the income tax itself, and consists of the provisions which in their totality represent our understanding of what is required to construct an income tax. It is the U.S. understanding of the normative income tax model and its necessary auxiliary provisions. The second structure is that reflecting the tax expenditure budget and contains the provisions carrying out the financial assistance set forth in that budget. It is true that both these sets of provisions exist side by side, or rather are intertwined, and without guidance cannot be told apart. The tax expenditure budget provides that guidance, for it seeks to separate the apparatus of expenditure policy from the inherent structure of the income tax itself. The latter structure is what would remain if we suddenly decided that no governmental financial assistance should be given through the tax system and instead should be handled by direct Government expenditures.

Would an understanding that our income tax system thus consists of two structures serving different functions make a difference in the approach to tax revision or tax reform? I think it should, and I also think that efforts at reform in the past have failed to take this difference into account. Tax reform is one thing if it means looking at a part of the inherent income tax structure that is not working well and asking just where did the tax experts go wrong in shaping that part. The issues posed and the answers to be explored are considered within the premises of an income tax and can be judged accordingly. But tax reform is quite another matter if it means examining a program of financial assistance to a particular group to decide whether that assistance should be given, in what amount and on what terms. It really is not tax reform but "expenditure reform," and the issues and answers to be explored both involve different premises and require different experts. The importance of seeing this distinction is underscored by the fact that most of the issues presently involved in "tax reform" concern the items in the tax expenditure budget rather than the provisions making up the inherent income tax structure.

Tax simplification and tax complexity.—In much the same way the tax expenditure budget permits us to consider the matter of tax simplification—or tax complexity—in a different way from that usually followed. The perennial desire for tax simplification always makes that goal one of the objectives of tax revision and tax reform campaigners. Yet the income tax system becomes increasingly more complex as each revision or reform passes into history. The efforts at tax simplification are rarely preceded by a consideration of what factors make for tax complexity and whether those factors are inherent in an income tax or instead are the result of faulty policies or faulty techniques. But the tax expenditure budget indicates that one significant source of complexity is the presence of the tax expenditure apparatus within the income tax system. We are thus led to inquire how much of the complexity of our present tax stems from that apparatus and how much follows just from having an income tax itself. An income tax is a complex tax, but we should not fault it as a tax because of the additional complexities forced on it when it is required also to carry out a whole host of expenditure programs.

Evaluation of the existing tax expenditure programs.—The tax expenditure budget enables us to look at the income tax provisions reflecting that budget in a new light. Once these tax provisions are seen not as inherent parts of an income tax structure but as carrying out programs of financial assistance for particular groups and activities, a number of questions immediately come into focus. Once we see that we are not evaluating technical tax provisions but rather expenditure programs, we are able to ask the traditional questions and use the analytical tools that make up the intellectual apparatus of expenditure experts.

We thus can put the basic question of whether we desire to provide that financial assistance at all, and if so in what amount—a stock question any budget expert would normally ask of any item in the regular budget. We can inquire whether the program is working well, how its benefits compare with its costs, is it accomplishing its objectives—indeed, what are its objectives? Who is actually being assisted by the program and is that assistance too much or too little? Again, these are stock questions directed by any budget expert at existing programs. They all equally must be asked of the items and programs in the tax expenditure budget.

The fact that the tax expenditure budget summarizes an "expenditure system described in tax language" adds, however, a new dimension to these traditional questions. Each program in that budget is carried out through a special tax provision. The financial assistance which the program grants is thus determined through the effect of that special provision on the tax liabilities of the persons benefitted. And also, since the persons benefitted are only those within the ambit of the income tax system, the program's assistance is confined to taxpayers and does not extend to nontaxpayers. Individuals whose income amounts are below personal exemption levels, businesses that are losing money rather than making profits, organizations that are tax exempt, being nontaxpayers thus do not receive the assistance. As a consequence, before we analyze the tax expenditure program, we must first translate the tax language into expenditure results.

Thus, consider the tax expenditure program for housing represented by the deductibility of mortgage interest and property taxes paid on owner-occupied homes, listed as an item under Community Development and Housing. This is a program of assistance estimated at about $5.7 billion (fiscal 1971). The translation of the tax language in which the program is framed and the assistance provided—a deduction in computing taxable income—tells us first that the wealthier the individual the greater is his assistance under the program. This is because the higher the individual's income and thus the higher the individual's income tax rate, the larger is the tax benefit—the tax reduction—brought about by the deduction. A deduction of $100 in mortgage interest or $100 in property tax is "worth" $70 to a taxpayer in the 70 percent top bracket—i.e., is financial assistance of $70. But it is "worth" only $14 to a taxpayer in the first bracket of 14 percent. As a consequence of this method of providing assistance, about 70 percent of the $5.7 billion of this financial assistance for owner-occupied homes goes to individuals with incomes of over $10,000. The translation next tells us that an individual or family whose income is so low that they are not required to pay an income tax—their income being below their personal exemptions and low income allowance—does not receive

any financial assistance, for deductions benefit only taxpayers and not nontaxpayers. The translation also tells us that there is no limit placed on the size or value of the homes to be assisted nor on the number of residences for which a taxpayer may receive assistance, for the deduction is simply in terms of mortgage interest and property taxes paid. The process of translation thus gives us the contours of the tax expenditure program for housing—contours that are quite different from the housing assistance programs formulated in direct expenditure terms. But the contrast—and hence the nature of the task of analysis in expenditure terms—can only be appreciated after the translation is made. It is only then that we can really ask the crucial question of how does this tax expenditure program measure up as an "expenditure" program. For then we can restate the tax program as a direct expenditure program and ask whether such a program represents a desirable policy.

The translation and consequent restatement of a tax expenditure program in direct expenditure terms generally show an upside-down result utterly at variance with usual expenditure policies. Thus, if cast in direct expenditure language, the present assistance for owner-occupied homes under the tax deductions for mortgage interest and property taxes would look as follows:

> For a married couple with more than $200,000 in income, HUD would, for each $100 of mortgage interest on the couple's home, pay $70 to the bank holding the mortgage, leaving the couple to pay $30. It would also pay a similar portion of the couple's property tax to the State or city levying the tax.
>
> For a married couple with income of $10,000, HUD would pay the bank on the couple's mortgage $19 per each $100 interest unit, with the couple paying $81. It would also pay a similar portion of the couple's property tax to the State or city levying the tax.
>
> For a married couple too poor to pay an income tax, HUD would pay nothing to the bank, leaving the couple to pay the entire interest cost. The couple would also have to pay the entire property tax.

One can assume that no HUD Secretary would ever have presented to Congress a direct housing program with this upside-down effect.

This examination and translation of tax expenditure items would force the exploration of possible direct expenditure programs as alternatives to accomplish the same overall financial assistance goal. The exploration would seek to ascertain if such direct expenditure programs would be more desirable and effective vehicles for providing that assistance than the existing tax expenditure program. This process would probably be hastened if the tax expenditure items were placed in the regular budget and the funds involved charged to the agencies having the prime responsibility for the program objectives represented by the items. An agency so charged with these tax expenditure funds in its "budget" might well be prompted to see if it liked the results and is willing to stand behind them, in contrast with the present attitude of indifference to the tax expenditure item or perhaps even ignorance of the item or its effects.

The tax expenditure budget equally provides a tool to evaluate newly proposed tax incentives. The technique is the same as that described above for the existing tax expenditure items. The first step

in testing the proposed tax incentive is to translate it from tax language into direct expenditure terms. This step, on its face seemingly an obvious necessity, is, however, generally not taken at all when tax incentives are proposed. Instead, the tax incentive remains cast in its tax language and the legislators who consider it are generally unaware of its direct expenditure meaning. As a consequence, many a tax incentive finds its way into the tax law.

In the final analysis these considerations take us to the basic question that underlies the tax expenditure budget. This is, given a congressional decision to provide financial assistance to a particular group or activity, when should that assistance be furnished through a direct expenditure program—be it a grant, a loan, an interest subsidy, a loan guarantee—and when should it be furnished through the tax system? What are the considerations or criteria that govern the choice between the direct expenditure route or the tax route? Put differently, when is it desirable to use a "tax incentive" to induce action rather than a direct expenditure program and what factors determine the answer?

II. Comparison of Tax Incentives With Direct Expenditures

The tax expenditure budget thus serves to identify the tax incentives in our existing tax system and thus to identify the areas in which Congress has given financial assistance through the tax system to induce desired action. But why through the tax system? Why not through a direct expenditure program? Given the congressional decision to provide the assistance, when should it be furnished through a direct expenditure program and when through a special tax program?

This section of the discussion is concerned with criteria for evaluating the use of tax incentives as compared to the use of direct government expenditures. This evaluation does not involve the issue whether we should seek to achieve the particular goals for which tax incentives are now used or suggested. We can assume it is understood that each incentive must serve purposes which the Nation wants to achieve and is willing to finance, rather than let the marketplace determine the extent to which the result will obtain. This is not to say that every proposal for a tax incentive is presented or defended with a careful analysis along these lines. Far from it—many sponsors of tax incentives simply assume that if the benefit sought is helpful to them in reaching a desired result, the incentive is in the public interest. But the present discussion assumes that these issues have been decided. Therefore, we are assessing the use of tax incentives as a technique to provide the Government assistance. The discussion is applicable to those tax expenditures intended to alleviate personal hardships, although we have indicated that they might not be classified as tax incentives.

There are, of course, as stated earlier, a variety of ways to provide Government financial assistance—direct grants, loans, interest subsidies, guarantees of loan repayment or interest payments, insurance on investments, and so on. These methods are here called budgetary or direct expenditures. Skilled tax technicians and budgetary experts can take any tax expenditure and devise a budgetary expenditure approach to serve the same goals with a direct expenditure. For example, the British for some years used an approach under their tax law somewhat similar to our 7 percent investment credit to encourage

the acquisition of machinery and equipment. They subsequently dropped the tax technique and substituted direct cash payments. They then dropped the direct grants and returned to tax provisions. The existing tax incentive for charitable giving could also be structured as a direct expenditure program, under which the Government would match an individual's contribution to charity with a proportional contribution of its own to the same charity. Tax credits to an employer for manpower training could be structured as grants or contract payments to the employer. Tax benefits to the aged can be structured as cash to the aged. And so on.

It follows that a meaningful comparison between the tax incentive technique and the direct expenditure technique must involve similar substantive programs. There is no point to saying that in a particular situation a tax incentive is a more useful approach because it involves no Government supervision over the details of the action to be induced, whereas a direct expenditure involves detailed supervision. To say so is not to compare a tax incentive with a direct expenditure but simply to compare a loosely controlled method of paying out Government funds with a tightly controlled method. Direct expenditures can involve loose as well as tight supervision. Once we decide which substantive program we want then we can go on to decide which technique, tax incentive or direct expenditure, is preferable for that program.

A meaningful comparison between the two techniques must also be realistic. Thus, it must recognize that a tax incentive does involve the expenditure of Government funds. It is often said that a tax incentive is more useful than a direct expenditure because people do not like or will not respond to "subsidies." Such statements always assume that the direct expenditure is the "subsidy," whereas the tax benefit obtained in the tax incentive—the lower tax—is not so regarded. Perhaps we may find that this fiscal illusion has its usefulness, but we should at least be aware of what is the reality and what is the illusion.

A. Some Asserted Virtues of Tax Incentives—Falsely Claimed

Against this general background we can now consider some of the virtues and defects generally claimed for tax incentives and, on the other side of the coin, for direct expenditures. The first level of consideration relates to virtues claimed for tax incentives, but, in light of the above background, falsely claimed.

1. Tax incentives encourage the private sector to participate in social programs.—Frequently a tax incentive is urged on the ground that the particular problem to be met is great and that the Government must assist in its solution by enlisting the participation of the private sector—generally business. The need for Government to participate can be fulfilled by a tax incentive, and this is asserted as a virtue of tax incentives—they provide Government assistance.

But all this is a non sequitur; it points not to the virtue of tax incentives but to the need for Government assistance. The existence of that need has no relevance to the question whether the need should be met by an incentive or by a direct expenditure.

2. Tax incentives are simple and involve far less governmental supervision and detail.—A whole swirl of virtues claimed for tax incentives is summed up in the general observation that they keep Government—that is, the Government bureaucracy—out of the picture: that they

involve less negotiation of the arrangements, less supervision, less red tape, no new bureaucracy, and so on.

But direct expenditure programs can also be structured to pay out Government money with few administrative controls. Thus, if an employer can obtain Government funds under a manpower training or hiring credit (i.e., a reduction in tax through the tax credit) for his employment activities by filling out a schedule on a tax return, a manpower program could be devised instead under which he would receive the same monetary assistance by filling out the exact same schedule on a piece of paper that had "Department of Labor" at the top in place of "Internal Revenue Service."

A government that decides it is wise to pay out tax credit money via a simple tax schedule would be highly irrational if it also decided that it would be unwise to pay the same amount directly on the same basis. A dollar is a dollar—both for the person who receives it and the government that pays it, whether the dollar comes with a tax credit label or a direct expenditure label. Nor is a new bureaucracy needed to pay out these amounts as a direct expenditure—a check-writing process is all that would be needed in keeping with the parallel to the tax credit. Nor, similarly, must there be long negotiations, complex contracts, and the like. It is not the tax route that makes the program simple—it is a substantive decision to have a simple program. In many cases, it is true, direct expenditure programs are probably overstructured and the urging of tax incentives is a reaction to, and a valid criticism of, badly designed expenditure programs. The cure lies of course in better designed expenditure programs.

It should be added, parenthetically, that the alleged simplicity of tax incentives is likely to be illusory. Thus, an argument for manpower training tax incentives states that "[any employer who hires a certified] employee is eligible for the tax credit—it is as simple as that." But this is not really so, because the legislation actually proposed would have required the employer to be certified by the Secretary of Labor, and to be eligible for certification an employer would have had to prove that the employment program would not impair or depress the wages, working standards, or opportunities of present employees; that the business was not affected by strike, lockout, or similar conditions; that the employees in the program would be afforded an equal opportunity for full-time employment after the expiration of the credit period; that a formal on-the-job training program would be available; and that there would be no discrimination on account of race, color, religion, or national origin. Further complexities were involved in the proposed system for determining the creditable wage base, which was to be defined as the higher of the minimum wage or the wage customarily paid by the employer for such services.[7] Similarly, the 5-year amortization for pollution control facilities requires certification by State and Federal authorities (sec. 169); the 5-year amortization for coal mine safety equipment requires certification by the Secretary of the Interior (sec. 187).

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[7] 115 Cong. Rec. S5329, S5330 (daily ed. May 16, 1969) (statement of Senator Percy). The bill is S. 2192, 91st Cong., 1st sess. (1969). This bill and Statement are generally illustrative of the various proposals for a tax incentive for manpower training and employment and their supporting argumentation.

The limited job credit adopted in 1971 (section 50A) requires certification by the Secretary of Labor that the employee is placed in employment under a work incentive program; the employee cannot have certain familial relationships to the employer; the credit must be repaid if the employee is let go; there is a carryover and carryback of unused credit.

The tape is thus present in tax incentive programs and its color is red. This is not to criticize the particular programs, but rather to observe that those who design tax incentive programs, just as those who design direct expenditure programs, may find that complex requirements become desirable.

3. Tax incentives promote private decisionmaking rather than Government-centered decisionmaking.—It is said that better progress will be made towards the solution of many social problems if individual decisionmaking is promoted, and that since tax incentives promote this they should be preferred to approaches that underscore Government-centered decisionmaking. The view has been expressed that "[r]ecognition that tax incentives can account for real Federal expenditures should not obscure the fact that such programs can eliminate the need for additional bureaucratic apparatus while promoting the use of private capital and initiative toward socially useful projects." [8]

We need not discuss the merits of private enterprise as a device for solving social problems, except to note in passing that many business groups who in urging tax incentives stress the virtues of private enterprise overlook the fact that they are really stressing private enterprise plus Government assistance. But wise or unwise, the contention that private enterprise should be allowed free play, without Government interference, tells us nothing as to the choice between tax incentives and direct expenditures, given the same substantive program. This contention is really a variant of the previous "red tape" argument. Just as we could design a direct expenditure program that provides for reduction of red tape, so we could design one that provides more flexibility for private decisionmaking and less scope for Government control. For example, the deduction for charitable contributions is sometimes cited as a method of Government assistance that promotes private decisionmaking—the taxpayer, and not the Government, selects the charity and determines how much to give. But a direct expenditure program under which the Government matched with its grants, on a no-questions-asked and no-second-thoughts basis, the gifts of private individuals to the charities they selected, would equally preserve private decisionmaking. Similarly, the freedom of choice that States and local governments have as to how to use the funds they borrow with the assistance of the tax exemption for the interest on their bonds can be preserved by a direct expenditure program in which the Federal Government pays a part of the interest cost.

It is true that many of the existing tax incentives are less structured than direct expenditure programs. But in part this reflects lack of scrutiny and foresight when the tax incentives were being planned or considered. If after a careful consideration it is decided that a simple structure is wise, then it would assume considerable irrationality to say that the simple structure will necessarily be kept if a tax incentive is used but scrapped in favor of a more complicated structure if a direct expenditure is used.

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[8] Joint Economic Comm., 1969 Joint Economic Report, H.R. Rep. No. 142, 91st Cong., 1st sess. 20 (asterisk footnote).

B. Some Asserted Defects of Tax Incentives

1. Tax incentives permit windfalls by paying taxpayers for doing what they would do anyway.—It is generally argued that tax incentives are wasteful because some of the tax benefits go to taxpayers for activities which they would have performed without the benefits. When this happens, the tax credit or other benefit is a pleasant windfall, and stimulates no additional activity. With respect to most, if not all, of the existing and proposed incentives this criticism is well taken, and indeed it is often difficult to structure a tax credit system which avoids this problem without increasing complexity and introducing arbitrariness. But this also is a problem not unique to the tax incentive technique. A direct expenditure program similarly structured would be equally open to the charge. For example, grants or contract payments made to employers who hire unskilled employees as part of a manpower program may go to employers who for one reason or another would have hired those employees anyway.

It may be desirable in particular programs to tolerate this inefficiency or windfall. Or it may be desirable to attempt to eliminate it, perhaps by constructing a program under which taxpayers bid for the Government assistance needed and the assistance goes to the lowest bidders if otherwise qualified, just as in direct Government purchasing. It may be that such a substantive program is difficult to operate through the tax technique, but other ways of reaching only the marginal decision could be built into a tax incentive. The significant question is what sort of substantive program is desired.

2. Tax incentives are inequitable: They are worth more to the high-income taxpayer than the low-income taxpayer; they do not benefit those who are outside the tax system because their incomes are low, they have losses, or they are exempt from tax.—This criticism of tax incentives in terms of their inequitable effects is properly levied against most of the existing tax incentives, and probably most of the proposed incentives. The existing incentives were never really carefully structured and in many instances just grew up, without serious thought ever having been given to the question whether they were fair in these terms. The entire process was molded by the fact that the positive tax structure was being affected, and within that structure tax benefits—deductions and exclusions—had these effects as a matter of course. The deductions and exclusions of the tax incentive provisions and their inequitable effects took on the protective coloration of the deductions and exclusions that were a part of the basic tax structure.

The fact that tax benefits for the aged and the sick provide no benefits for those aged or ill who are too poor to pay income taxes was not even thought of as a difficulty, since the focus was, as in any positive tax system, on writing the rules for taxpayers.[9] The problem was sometimes thought about in the context of an individual who fell outside the tax system because of current losses, and at times a carry-forward of incentive benefits was provided. Thought was

[9] If we had a negative income tax as well as a positive income tax, then the direct expenditures involved in the negative income tax payments to those whose incomes were below the level of positive tax would, to that extent, provide some assistance to balance the assistance given to taxpayers through the tax expenditures contained in the positive tax system. And also, of course, direct programs in many fields presently provide assistance to nontaxpayers as well as taxpayers. But the existence of such direct programs and a negative income tax would not make the tax incentives or special tax relief equitable. The jumble of financial assistance these varied methods would provide would only by extreme happenstance provide an equitable continuum of assistance structured to provide funds to those most in need of the assistance.

occasionally given to the fact that the deduction of mortgage interest or charitable contributions is worth more to the top bracket taxpayer than the low bracket taxpayer, but the disparity was generally dismissed on the grounds that all deductions had that effect. Sometimes this matter was regarded as worrisome, and a tax credit was used instead of a deduction, as in the case of the retirement income credit for the aged.

This unfairness persists even in recently proposed tax incentives. The proposed tax credit for property taxes paid by the aged would not have helped poor families with incomes below the taxable level.[10] Proposed manpower training credits would not help a new business experiencing initial losses and struggling to stay alive, or it would help only by deferring into the future, through a carry-forward provision, benefits needed at once. No assistance is provided to a tax-exempt organization or local government incurring added expenses under its participation in manpower training or employment activities.[11] The $100 deduction (on a joint return) for political contributions, or alternative tax credit of one-half of the contribution up to a maximum credit of $25 (on a joint return), added in 1971, in effect bars individuals below the taxable levels from participating in the allocation of Government funds to their candidates. Thus, the credit approach in effect means that if a taxpayer sends $25 to a candidate, then the Government will also send $25 to the candidate—the effect of allowing a tax credit of $25 for a contribution of $50. But if individuals below these taxable levels—perhaps 25 percent to 30 percent of the electorate—contribute any money, the Government refuses to match those funds.[11a]

Thus, the lesson is hard to learn. The 1969 tax reform legislation contained a tax incentive for the rehabilitation of low income housing, using the device of 5-year amortization of capital expenditures which otherwise would be depreciated over a longer period. This device, which was proposed by the Treasury Department, has these interesting effects for individual taxpayers: for a taxpayer in the 70 percent bracket, the benefit is the equivalent of a 19 percent investment credit (assuming an expenditure with a 20-year life and discount rate of 10 percent); for a taxpayer in the 20 percent bracket it is the equivalent of a 5 percent credit. In terms of interest costs on a loan made for rehabilitation purposes, the benefit of 5-year amortization is equivalent for the 70 percent bracket taxpayer to reducing an 8 percent interest charge to 3 percent; for the 20 percent bracket taxpayer it is equivalent to reducing the 8 percent charge to 7 percent. The inequitable effect of this tax incentive devise is not mentioned either in the proposal or in the committee reports explaining it.[12]

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[10] Tax Act of 1971, H.R. 10947, 92d Cong., 1st Sess. § 319 introduced in the Senate. The provision was not retained in the final legislation.

[11] The limited job credit adopted in 1971, note 7 supra, has these same defects. Since the basic Labor Department program does provide direct assistance to public employment, that program could just as well have been extended to private employment and hence use of the tax credit route was unnecessary.

[11a] The new code sections are 43 (credit) and 218 (deduction), effective for 1972.

The "check-off" system (code section 6096(a), as amended), also added in 1971 but effective for the 1976 election, under which taxpayers paying income tax may designate that $1 be paid to a presidential election campaign fund of a specified political party or a general account for that purpose, and the amounts are then paid if appropriation legislation is enacted, is a tax expenditure in the sense that a system of Government assistance to presidential candidates is triggered initially by the "votes" of individuals who pay income taxes. There is, however, no direct reduction in tax liability as in the case of other tax incentives. Here also, only taxpayers have votes as to the use of Government funds and nontaxpayers are excluded.

[12] See Hearings on H.R. 13270 Before the Senate Committee on Finance, 91st Cong., 1st Sess., pt. 5, at 4903-08 (1969) (statement of Charles Davenport). See also Sunley, Tax Incentive for the Rehabilitation of Housing, The Appraisal Journal (July, 1971) 381.

It is thus clear that most tax incentives have decidedly adverse effects on equity as between taxpayers on the same income level, and also, with respect to the individual income tax, between taxpayers on different income levels. As a consequence of these inequitable effects, many tax incentives look, and are, highly irrational when phrased as direct expenditure programs structured the same way. Indeed, it is doubtful that most of our existing tax incentives would ever have been introduced, let alone accepted, if so structured, and many would be laughed out of Congress. What HEW Secretary would propose a medical assistance program for the aged that cost $200 million, and under which $90 million would go to persons with incomes over $50,000, and only $8 million to persons with incomes under $5,000? The tax proposal to remove the 3 percent floor under the medical expense deduction of persons over 65 would have had just that effect.[13] What HUD Secretary would suggest a subsidized loan program for housing rehabilitation under which a wealthy person could borrow the funds at 3 percent interest but a poor person would have to pay 7 percent or 8 percent? That is the effect as stated above of the 5-year amortization of rehabilitation expenditures contained in the 1969 Tax Reform Act.

This criticism—that tax incentives produce inequitable effects and upside-down benefits—is valid as to the general run of tax incentives.[14] It demonstrates why tax incentives make high-income individuals still better off and result in the paradox that we achieve our social goals by increasing the number of tax millionaires. The marketplace does not work this way—for the individual who earns his profits, even high profits, by meeting a need or desire of society, finds his rewards subject to the progressive income tax. The economic system is then functioning as it is intended it should, and the tax system, which acts as a control, is also functioning as intended. But when rewards are in the form of tax incentives, the latter control is eliminated, and tax millionaires are produced.

The financial assistance afforded by the incentive, with the purpose of making after-tax profits high enough to induce the desired action by the taxpayer, is not itself included in income. The tax incentive thus produces both financial assistance and freedom from taxation. That freedom itself means more to the well-to-do individual than to one in the lower brackets. The tax incentive is thus a method of reward and assistance that is just upside-down from the way the country decided—when it adopted a progressive income tax—that the rewards of the marketplace should operate in combination with the income tax. These tax incentives form the foundation of the "tax shelters" that are being widely syndicated today among taxpayers in the brackets from 50 to 70 percent. The use that has been made—and is being made—of tax incentives is thus destructive of the equity of a tax system. The irony of all this is illustrated by the Treasury De-

[13] Tax Reform Bill of 1969, H.R. 13270, 91st Cong., 1st Sess. § 914 (1969), as passed by the Senate. The provision was not enacted.

[14] For corporations, most tax incentives will favor a large corporation over a small corporation, since a special tax deduction or similar benefit taken at a 48 percent rate by a large corporation is worth more than twice the assistance provided when the deduction is taken at the 22 percent rate applicable to small corporations. Corporations incurring losses may receive no benefit. The use of a tax credit rather than a deduction would eliminate the first aspect, but would probably leave the loss corporation without assistance (except for a carry-forward of unused credit), since tax incentive credits in excess of tax liability typically are not paid out.

partment's first proposing a housing rehabilitation tax incentive and then having to suggest that the incentive is a "tax preference" which must be guarded against by including it in a new minimum tax structure designed to prevent the wealthy from escaping all tax burdens.[15] This inclusion as a tax preference under the new minimum tax thus implicitly characterizes this tax incentive as a special tax benefit for high-bracket taxpayers. The use of the direct expenditure route would have prevented this particular undermining of the tax system.

3. Tax incentives distort the choices of the marketplace and produce unneutralities in the allocation of resources.—This criticism is in one sense always valid, because that is what the tax incentive is designed to do. Generally, the critic is also saying or implying that the distortion introduced by the particular incentive is undesirable for various reasons. In large part this criticism is true of many existing incentives for reasons earlier described. The criticism has relevance because the distorting effects of tax incentives often pass unnoticed. But the criticism is of course equally applicable to direct expenditures, some of which certainly are unwise. Again, we are not here concerned with the overall role of Government or the extent to which and under what circumstances financial assistance is desirable to induce private action different from what the marketplace would provide. This criticism thus does not per se tell us when one or the other technique should be used.

It is interesting to note that even within the area sought to be benefited by the tax incentive, the design of the incentive may push or pull in unneutral directions, which may or may not be desirable. Thus, a tax credit for pollution control facilities focuses on expenditures for machinery as the method of control to the exclusion of other methods, such as a different choice of materials involved in the manufacturing processes.[16] A tax credit for businesses located in urban slums may focus concentration on monetary assistance to the neglect of the provision of technical assistance.

4. Tax incentives keep tax rates high by constricting the tax base and thereby reducing revenues.—This criticism of tax incentives states a fact that many overlook in their advocacy of tax incentives. The lack of an explicit accounting in the Federal budget for the tax expenditures involved in tax incentives and the lack in most cases of an accounting in the tax statistical data combine to cause many to forget that dollars are being spent. As a consequence, the criticism that is made against direct expenditures—that they keep our tax rates high—is often lost sight of when tax incentives are involved. This criticism of tax incentives is thus a useful reminder that Government funds are being spent, and that therefore whatever degree of scrutiny and care should be applied to direct expenditures should also be applied to tax incentives. Tax incentives are usually open-ended: they place no limit on how much tax benefit a taxpayer can earn. Hence it is difficult to foretell how much will be spent by the Government through a particular incentive. It is difficult in the nature of things to structure most tax incentives in order to provide a limit on their use. Thus, tax

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[15] See article by Eileen Shanahan in N.Y. Times, Dec. 22, 1969, at 25, col. 4 ("There are four other new tax preferences in the bill: tax incentives (which is what preferences always are at their birth) aimed at stimulating . . . the rehabilitation of old residential housing . . .").

[16] See Wilson, Tax Incentives and Pollution, in Tax Incentives, supra note 10, at pp. 251–253; McDaniel and Kaplinsky, The Use of the Federal Income Tax System to Combat Air and Water Pollution: A Case Study in Tax Expenditures, 12 Boston College Ind. and Comm. Law Rev. 351, 364–370 (1971).

incentives are much like the uncontrollable direct expenditures in the budget.

In the end, the issue is whether, as to any particular area, we want direct Government provision of services or goods, Government financial assistance (subsidies) to encourage and assist private action to provide the services or goods, or reliance on private action unaided by the Government. If we choose Government provision or assistance, then dollars must be spent, and whether they are dollars foregone through lost tax revenues or dollars spent directly through direct expenditures, the effect on tax rates will be the same. So also will the effect on the economy if the Government program succeeds, and the resultant effect on the revenue base and tax rates of the increased economic activity that such success may mean.

C. Summary of Asserted Virtues and Vices of Tax Incentives

This description of the virtues and vices of tax incentives yields these conclusions: the asserted disadvantages—waste, inefficiency, and inequity—are true of most tax incentives existing or proposed because of the way they are structured or grew up. The whole approach to tax incentives—one of rather careless or loose analysis, failure to recognize that dollars are being spent, or to recognize the defects inherent in working within the constraints of the positive tax system—has produced very poor programs. But if the problems were recognized and if care were taken to design tax incentive programs that one would be willing to defend in substantive terms were the programs cast as direct expenditure programs, then these disadvantages would not be involved, except to the extent that they are inherent in Government assistance itself. These are large conditions, and in some cases would be hard to bring about. For example, it would not be easy to give tax benefit assistance to groups outside the tax system but performing desired activities, such as local governments or tax-exempt organizations hiring the disadvantaged—direct payments outside the tax system would be needed. And it would not be easy to design tax incentive programs which were not inequitable as between taxpayers in high and low brackets and between taxpayers and nontaxpayers. Indeed, there is no tax incentive in existence or proposed that meets the above standards. But for purposes of comparison we are here assuming that the standards could be met under some tax incentive programs.

Similarly, the asserted advantages of tax incentives—greater reliance on private decisionmaking and less detailed requirements—to the extent that they are true in fact (and they are often only illusory) are really criticisms of the complications and supervision built into direct expenditure programs, or else a reflection of the structural weaknesses of the tax incentive program, depending on the amount of detail and supervision appropriate to the particular program. In a rational world, one should assume that if after careful study it is considered that certain complexities and details are not needed and can be left out of a tax incentive program, then they should and can simply be dropped from the direct expenditure program. Again, this may be a more difficult condition than appearance suggests, but it is probably less difficult to bring about than the conditions for repairing tax incentives, or at least no more difficult. Again, for purposes

of comparison, we are also here assuming it can be done in direct expenditure programs.

D. What Is Lost by Using a Tax Incentive Rather Than a Direct Expenditure

Given, under the assumptions just made, the same substantive program, under which Government assistance in the same amount is being given in ways and to persons that would be equally acceptable whether tax incentives or direct expenditures were used, what factors should determine the choice of framework for a particular program? We can approach this question by asking: What is lost if the tax incentive technique is used? There are several answers.

1. Tax incentives, by dividing the consideration and administration of Government programs, confuse and complicate that consideration in the Congress, in administration, and in the budget process.—Let us start with the congressional consideration of tax incentive programs. By definition, such programs are designed to induce action to meet a particular social goal—manpower training of the disadvantaged, education, housing, pollution control, or business location in desired areas, to use some recent examples—and would not be a part of the tax structure were they not deliberately cast as tax incentives. Such governmental programs would normally be considered by the appropriate congressional committee charged with the legislative area involved: the House Education and Labor and Senate Labor and Public Welfare Committees, the House and Senate Banking and Currency Committees, the House and Senate Interior and Insular Affairs Committees, the House Interstate and Foreign Commerce and Senate Commerce Committees, and so on. These committees are responsible for overseeing and developing legislation in their jurisdictional fields, and so are able to coordinate the Government's programs and policies. Tax legislation, however, goes to the House Ways and Means Committee and the Senate Finance Committee. These committees would normally not consider the substantive areas involved in tax incentive programs. Tax incentives suddenly charge them with acting on substantive matters outside their fields of responsibility simply because the program uses the tax system. Although tax committees are highly competent in tax matters, they do not have as much insight into these programs as the legislative committees normally handling the programs. A similar situation would prevail if the latter committees were suddenly to legislate on technical tax matters. Moreover, the tax incentive program considered by the tax committees would be isolated from the regular flow of legislation and activity in the field involved, and this isolation would make coordination and the consideration of priorities difficult. The purpose of the congressional committee system is to distribute expertise among the Members of Congress. To cast solutions to social problems as tax measures and exchange expertise in those problems for unfamiliarity is, to say the least, both disruptive and unproductive.[17] Moreover, the jumbling of a number of different

[17] The 1969 Tax Reform Act is an example of the hasty judgments that may result from this system. Without any study at all the Ways and Means Committee, in dealing with that measure, committed the Government to an expenditure of nearly half a billion dollars for pollution control facilities installed by industry. Without any study at all the Treasury induced the committee to commit the Government to an expenditure of over $300 million for rehabilitation of low-income rental housing. Neither action was taken with any regard to the overall priorities in the pollution control and housing areas. These comments also apply to the 5-year amortization provided in the 1971 act for employer on-the-job training facilities and child care facilities, first raised in the House Ways and Means Committee by a member.

incentive programs in the tax committees would inevitably set in motion a "log-rolling" process, in which careful consideration would be displaced by trading for support among members. Such a process is difficult to control once a committee is operating outside of its area of expertise and with no clear limits of subject matter to restrain it.

These difficulties could perhaps be overcome. Tax committees might refer incentive proposals to the appropriate legislative committees and accept their judgments, or both groups of committees could consider the matter jointly. Approaches like these are sometimes used in areas where a trust fund having earmarked taxes exists. But the system is awkward and leaves unanswered questions—for example, which committee would exert continuing oversight over the program? Given all the trouble and care that must be taken to patch up an arrangement basically at variance with the normal practice, what is gained by choosing that arrangement in the first instance and thereby dividing the governmental consideration of the program?

Much the same can be said about the parallel effect at the administrative level. Social programs are normally administered by executive departments such as Labor, HEW, HUD, and Interior. Taxes are administered by the Internal Revenue Service. A social program cast in tax terms must in the first instance be administered by the IRS, whose expertise does not extend to these other areas. Problems of lack of coordination with other substantive programs would also arise because of the isolation of tax incentive programs. Again, these difficulties could be patched up to some extent—and probably would have to be—by having the appropriate executive department provide some guidance to IRS. But why the divided arrangement in the first place?

At the budgetary level such a division of responsibility makes oversight and control more difficult. Budgetary problems exist even where several relevant executive departments have a hand in the same program or area. The difficulties are compounded when one of the agencies (IRS) really doesn't belong there in the first place, and when it distributes the funds by tax reduction rather than direct expenditure.[18] Our present budgetary process badly compounds these difficulties by giving no recognition or accounting to what is being spent on existing tax expenditures. Until 1968, when the Treasury Department published its analysis of tax expenditure programs and a tax expenditure budget, there was no accounting for the existing tax incentives. The necessary data were not available to the public and not comprehended within the Government. No one really knew what was being spent through the tax system or for what purposes.[19] In a

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[18] One defect in the administration of tax incentives by the IRS is that the IRS agents are "income oriented" and tend to look askance at deductions and credits having no relation to the measurement of income. This attitude could result in an uneven administration of incentive programs. The agents, not seeing the purpose behind the deductions and credits, since they are not tax purposes and so are outside the general expertise and background of the agents, are likely to view the benefits as too generous and to raise audit problems for claimants. This is less likely to occur in the administration of a direct expenditure program since it would be in the hands of an agency interested in the success of the program. Thus the existence of an IRS audit system is not necessarily, contrary to the claim sometimes made, an argument for using tax incentives. Moreover, other agencies, such as the Department of Labor, have inspection or audit systems, and still others could develop them.

[19] It is sometimes said that a tax incentive has the advantage of "permanency" since tax provisions generally are only infrequently reexamined, whereas direct expenditures are usually reviewed annually, and that some programs to be effective require such permanency. However, if as a general matter periodic review of Government expenditures is considered desirable, no program should be removed from that scrutiny except for compelling reasons. If in a particular case such reasons are determined to exist, then devices to postpone review are available under the direct expenditure route: for example, longer appropriations and trust funds. Resort to the tax system is thus not necessary to accomplish the prevention of periodic review, if that is a desirable goal.

real sense the over $50 billion of tax expenditures is "lost" in our Government accounts. These expenditures are not in the budget; they do not appear, for the most part, in Treasury statistics of income; they ended up in 1970 in an appendix to a statement by a Treasury official before a subcommittee of the Joint Economic Committee of the Congress which was printed as an exhibit in the annual report of the Secretary of the Treasury.

The statement of managers in the conference report on the 1971 Revenue Act does require the Treasury Department to annually send to the tax committees a list of tax expenditure items, and presumably this submission will also now be published annually in the Treasury Secretary's annual report along with other tax data regularly included. The material will also be made available to the Joint Economic Committee, presumably in time to be coordinated with its study of the budget and economic report.[20]

An additional problem is the difficulty of coordinating the treatment of tax incentives with the overall handling of direct expenditures. For example, when overall expenditure limits are directed by the Congress or when the President decides to cut expenditures it is essentially impossible to apply the restrictions to tax incentives. So far none of the various expenditure-control devices, such as those voted in recent years by the Congress, have in any way affected tax expenditures. Yet had these tax programs been structured as direct expenditures, they would have had no such immunity. In substantive terms they do not merit that immunity any more than the direct expenditures, yet their tax clothing shields them. For similar reasons, tax incentives are not covered by the annual budgetary review process; the Bureau of the Budget until recently did not even know about many of them or how much they cost, and as yet has not worked them into the budget review process in the same manner as direct expenditures. We do have "uncontrollable" areas in the budget, such as interest on the public debt, and since they can play havoc with a budget, an effort is made to keep them to a minimum, and at least to identify them and try to estimate their effect. But in the budget process this is not done for tax incentives.

Overall, therefore, a resort to tax incentives greatly decreases the ability of the Government to maintain control over the man-

[20] A Senate floor amendment, section 323, H.R. 10947, as passed by the Senate, required publication in the budget of tax expenditure items. The present Treasury opposed this amendment. The Treasury in the previous administration would have favored the approach. The conference committee deleted the amendment, with the following explanation:

BUDGET INFORMATION WITH RESPECT TO REVENUE LOSSES AND INDIRECT EXPENDITURES

Amendment No. 74: The Senate amendment amends the budget and accounting act to require the budget submitted by the President (or special analyses presented with the budget) to contain estimates of losses in revenue from provisions of the Federal income tax laws and also estimates of indirect expenditures through the operation of Federal tax laws.

The conferees concluded that it would be more appropriate to have such estimates of tax expenditures made by the Treasury Department and to have the estimates submitted annually to the Committee on Ways and Means of the House, the Committee on Finance of the Senate and the Joint Committee on Internal Revenue Taxation. It is expected that these tax expenditure reports to the tax committees will initially be modeled after similar reports previously made and included in the Annual Reports of the Secretary of the Treasury in 1968 and 1970. Modifications may, of course, be made from time to time in consultation with the tax committees. In addition to making these reports to the tax committees on an annual basis, the Treasury Department may desire to include these data on tax expenditures in the annual report of the Secretary of the Treasury. The Treasury Department has indicated its willingness to submit information to the tax committees in the manner indicated above and as a result the amendment no longer appears necessary.

The Senate recedes.

See also the statement of Senators Javits and Long, Congressional Record, December 9, 1971, S. 21098-9, relating to the furnishing of the material to the Joint Economic Committee and coordination with the budget.

agement of its priorities. This is true both as to the substantive programs to be introduced, modified, or dropped and as to the amounts to be spent in particular programs and areas. These consequences run counter to the whole thrust of our concerns with the ordering of national priorities and with the wise allocation of our resources, which we have come to see as limited and therefore in need of careful management.

Some of these difficulties could be met. Tax incentives could be identified, amounts estimated, and the data incorporated in the budget. Unless this is done, comparisons of tax expenditures and direct expenditures must be comparisons of hidden programs with open ones. But even after such clarification, further difficulties would remain. Perhaps the President could be given authority to treat the tax incentive funds as direct expenditures for budgetary control purposes, and the incentives could be structured as far as possible to have them fall in the controllable rather than the uncontrollable expenditure pattern. Perhaps the tax incentive programs could be given yearly or biannual expiration dates, so that they could be reviewed in the same way as direct expenditures under the appropriation and budgetary procedures.

But these solutions, like those available for the problems of congressional consideration and administrative operation, raise the question: What is gained by turning what would normally be a direct expenditure program into a tax incentive program and then trying to structure the program so that it can nevertheless be handled as a direct expenditure program? Why the detour through the tax system? Why inject the tax system into the program, when the program can be effectively structured without it?

2. Tax incentives will not improve the tax system and are likely to damage it significantly.—Certainly the tax system does not gain when expenditures are made through tax incentive programs. We have already seen that tax incentives are inimical to the equity of a tax system—indeed, in a sense that is necessary to their purpose and function. Moreover, the tax system is complex enough as it is, and to have a large number of tax incentives side by side with the provisions making up the structure of the tax itself can only cause confusion and a blurring of concepts and objectives. Tax incentives make it more and more difficult to distinguish between what is subsidy and what is proper structure. This is especially so where the tax incentive is not identifiable as such but is merged into a provision that has a genuine relationship to the measurement of net income—as is, for example, the subsidy involved in accelerated depreciation for real estate, or the new class system of depreciation and 20 percent reduction in lives for machinery and equipment, since some deduction for depreciation is appropriate.

It is no answer to say, as do some cynics, that since the tax system today has so many special provisions there should be no objection, when worthwhile programs are involved, to adding still more to the heap. Rather the effort should persist to contract those existing special provisions that are improper and wasteful. We know from long experience that provisions can be enshrined in tax laws far past their usefullness. and long after their defects become clear. We should not, when alternatives are present, freeze in more special provisions,

especially since programs in the complex areas of social policy to which many tax incentive proposals relate are essentially experimental in nature.

E. What Is Gained—Allegedly—by Using a Tax Incentive Rather Than a Direct Expenditure

Thus, a great deal is lost when tax incentives are used. What is to be gained by that approach compared with the direct expenditure approach? Some have advanced answers which are essentially political in nature, and I think rooted in illusions or irrationalities. Professor Aaron has observed that the popularity of the tax devices "derives from a peculiar alliance among conservatives who find attractive the alledged reduction in the role of government that would follow from extensive use of tax credits, and liberals anxious to solve social and economic problems—by whatever means—before it is too late." [20a] We have already discussed the illusion that tax credits for social purposes are simple and removed from the bureaucratic hand. The second illusion in the above argument is that the Congress will vote dollars through tax incentives that it refuses to appropriate through expenditure programs. Just why a Congress that focuses on the matter should be so inconsistent is not explained, Certainly many members of tax committees, such as Chairman Mills, have recognized that tax incentives do involve expenditures—"back-door expenditures" in his words—and that a legislator concerned with expenditure levels and expenditure control should not, while holding the front door shut, let hidden expenditures in through the back door. But perhaps irrationality will govern; administrators and legislators will devise and accept programs structured as tax provisions which they would reject as direct expenditures, or will refuse to improve direct expenditure programs, or will spend money through tax incentives that they would not appropriate as direct expenditures. In that event, rational consideration will not change matters.

There is another answer, which also appears to be irrational or illusory. This is the claim that businessmen respond to tax credits but not to other forms of Government assistance; that there is a glamour and magic possessed by dollars of tax reduction that will attract the businessman who would pass up dollars offered through direct expenditures. To the extent that this answer rests on the belief that tax incentives are really simpler, or that complexities can be sheared away only if tax incentives are used, it rests on beliefs already discussed and found either unrealistic or true only if the underlying Government policies are themselves irrational. To the extent that the answer rests on the claim that business regards tax incentive dollars as "clean dollars"—just part of a tax computation—but sees direct expenditure dollars as somehow unclean because they are a subsidy, one can only answer that business probably does not respond this way, or that if it does, it is behaving irrationally. Experience with direct subsidies—the SST program for example—suggests that business firms are willing to and do calculate profit prospects in the light of Government subsidies. Similarly, the argument that business is familiar with tax credits—though until the investment credit there were no credits widely used in the corporate tax system—but not

[20a] Aaron, Tax Exemptions—"The Artful Dodge, Transaction, March 1969, at 5.

with other forms of Government assistance is certainly not always true. Lack of business familiarity could be overcome by publicizing direct subsidies.[21]

There may be an aspect of this asserted preference for tax incentive programs that is not illusion or irrationality, but more serious. It may be that legislators and the beneficiaries of tax incentive programs—businesses receiving accelerated depreciation or percentage depletion, State and local governments receiving tax exemption on their bonds—fear that once the public is fully aware of the amounts involved and can weigh expenditure costs against benefits received by the Nation, the tax incentives will be found wanting in many respects. In this view, the deeper the incentive is buried in tax technicalities and tax terminology, the more it looks like any other technical tax provision, the more it partakes of the protective coloration of the tax law that can be obtained by such outward similarity to ordinary tax provisions, then the more desirable the tax incentive becomes. The public must dig hard and deep to find the subsidy and evaluate it. But such an approach to Government expenditures—the preference for the hidden subsidy over the open subsidy—is contrary to all experience with budgets, and to efforts to achieve a rational use of resources. If this is the argument for tax incentives, it should not be accepted.

F. Conclusion

What, then, is the balance sheet regarding these two methods of Government assistance, direct expenditures and tax incentives? I conclude from the above observations that, as a generalization, the burden of proof should rest heavily on those proposing the use of the tax incentive method. In any particular situation—certainly any new situation—the first approach should be to explore the various direct expenditure alternatives. Once the most desirable of these alternatives is determined, if one still wishes to consider the tax incentive method for the same substantive program, the question must be what clear advantages can be obtained by using the tax method. Again, as a generalization, I think it unlikely that clear advantages in the tax incentive method will be found. Moreover, I stress strongly that the advantages must be clear and compelling to overcome the losses that accompany the use of the tax incentive, even the well-structured incentive. The problems of achieving a well-structured incentive are in themselves formidable. Even assuming that such problems as unfairness and windfalls are overcome, there are still the losses and drawbacks we have described: confusion and divided authority in the legislative and administrative processes, difficulties in maintaining budgetary control, confusion in perceiving and setting national priorities, and dangers to the tax structure itself.[22]

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[21] Professor Holland has observed, using employment and training of the disadvantaged as an example, that business accounting and organizational structure militate generally against tax incentives compared with direct expenditures. Tax incentives operate at an overall company level by reducing the final tax. But the problem that occasioned the tax incentive is often focused at the plant level, where a plant manager is faced with additional expenses that make a particular program unprofitable without the tax incentive. As a consequence, unless somehow the tax saving at the overall level is allocated within the company to the particular plant, that plant manager is saddled in the company's books with a poor performance. A direct expenditure approach would not have this result. (Holland, An Evaluation of Tax Incentives For On-the-Job Training of the Disadvantaged, 2, Bell Journal of Economics and Management Science, 293 (1970).)

[22] After a very careful examination, Professor Holland has concluded that a direct approach is to be preferred in the area of training and employment of the disadvantaged; note 21 supra. He believes a direct program can be better structured at the margin to induce the desired employer activity.

It could be that a program of Government assistance that is broadly based, relatively simple, and properly structured can be more readily administered if joined to the tax system. Some have defended the deductions for charitable contributions and personal interest and taxes on this ground, though pointing to the need to correct abuses and recognizing that the corrections would make the tax incentive more like a direct expenditure program. Others have defended the investment credit for the same reasons, again with a recognition that improvements can be made.[23] But none of these incentives has had to meet the test of comparison with a carefully structured direct expenditure program. Only after that is done can we reach the point of well-informed choice.

These are general guidelines; there may be particular cases to which they do not apply because special considerations are involved. Even so, care must be taken to look hard at special considerations advanced as reasons for an exception to be made "in this particular case." The legislative halls are crowded with advocates skilled in tying their problems to the last exception and in devising techniques to make each step from the last precedent appear to be only short, logical, and harmless. Our gaze can thus be averted from the constantly widening gap between proper tax structure and each additional special provision.

One question raised by this discussion especially merits more research and thought. Just why is it that in many cases legislators appear willing, with hardly any thought, to accept an expensive tax incentive program when they would just as quickly reject a similar direct expenditure program, even a much smaller one? Why do they require lengthy study and analysis of direct expenditure programs before legislative and appropriation committees while they are ready to enact tax incentives on no more than generalizations and hunches? Is it that they do not realize, or stop to think, that dollars are spent by tax incentives? Is it that tax bills are so complicated that hardly anyone studies them unless prodded by an industry or taxpayer that is hurt, in his tax pocketbook, and that therefore provisions dispensing largesse slide by—although this would be a case of the proper concession of tax expertise to the tax committees papering over their lack of expertise in the areas involved in tax incentives? Is it that the legislators know full well what is involved, despite the complexity of tax bills, but believe the public will not perceive what is being done because of the complexity of tax bills and because tax expenditures do not show up in the budget? To claim this would almost be to claim that any expenditure of funds is acceptable to a legislator—the more money to constituents the better—but most legislators do not follow this principle.

Another puzzling question is why the insights and analyses developed though academic research seem to be reflected reasonably rapidly in much of congressional legislation on direct expenditure programs and other matters but show so long a timelag before they have an influence on tax legislation? This is especially noticeable in the tax incentive provisions that become part of the tax system.

We could ask similar questions about administrative agencies. Just why do administrators of direct expenditure programs allow tax

[23] Indeed, the relative simplicity of the investment credit, which can be applied with very little supervision, may have misled businessmen into thinking all tax credits are simple in structure. Yet, as stated earlier, the tax credit proposals in social areas have far more details and complexities.

incentive proposals to be pushed when the funds involved in such programs could be used, and probably much better used, as coordinated parts of the direct expenditure programs? Is it that their policy is to accept gratefully contributions from any source? Is it that they will not face up to the need either to improve the direct expenditure program or squarely demonstrate the erratic and wasteful character of the tax incentive proposal? Is it that they are sometimes negligent in their legislative intelligence and are simply left at the legislative starting gate when the tax incentive is adopted? And why should a Treasury Department which is charged with preserving the integrity of the tax system ever willingly propose or accept a tax incentive solution except in the unusual and rare situation when a tax credit may possibly be properly tailored, and better suited to the purpose—conditions which do not appear to exist as to any of the new incentives that have been pushed by the Treasury in the present administration except perhaps for the investment credit.

With new situations—that is, new or expanded Government programs—we are in a position to follow a rational course in choosing between these methods, though the experiences in the 1969 and 1971 tax legislation adding new incentives indicate the lessons must be painfully relearned by the Treasury Department and the Congress.[24] With existing tax incentives, the task is one that falls in the category of "tax reform", where progress is difficult and slow. But because these tax incentives do involve financial assistance, the approaches to tax reform in these areas must be devised to take account of that factor. We can now turn to a discussion of this aspect of tax subsidies.

III. The Varied Approaches Necessary To Replace Tax Expenditures With Direct Governmental Assistance

The tax expenditure concept opens both a new way of examining tax incentives and special tax provisions and a new facet in the consideration of tax reform. Since tax incentives could have been and can be structured as direct expenditures, existing and proposed incentives can be tested in direct expenditure terms. So tested, many tax incentives will be seen as either ineffective or inequitable, often to the point of being so grossly unfair as to be ludicrous.

The fact that a tax expenditure program can be recast as a direct expenditure program really takes us to the heart of tax reform, for it opens up a new way to consider the entire subject. We can regard a major aspect of income tax reform as involving the reexamination of all of the tax expenditure provisions now contained in the income tax. We should start by examining the list of tax expenditures and seeking to decide which should go and which should remain. In a sense, that of course is what tax reformers have always done, whether they talked in terms of base broadening, elimination of preferences, or needed elimination of loopholes.

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[24] The 1969 Tax Reform Act puts 5-year termination dates on the new 5-year amortization incentives for pollution control facilities, rehabilitation of low-income housing, railroad cars, and mine-safety equipment. Tax Reform Act of 1969 Public Law 91-172-4 § 70, (Code § 169), § 521 (Code § 167(k)), § 705 (Code § 184), § 707 (Code § 187). The more generous provision for recapture of depreciation of federally assisted housing projects also has a 5-year amortization provision. Id. § 521, amending Code § 1250(a)(1)(C)(ii).

But these time limits will not have served their purpose if no one in Government is collecting the needed data and attempting to ascertain the effectiveness of these tax incentives. See, as to pollution control facilities, a discussion of this aspect in McDaniel and Kaplinsky, supra note 16. One suspects that, because of the very nature of the tax incentive technique, the responsibility for such study will be found nowhere lodged.

The 1971 Act placed a 5-year limit on the new 5-year amortization provisions for employer on-the-job training facilities and child care facilities. The other new tax expenditure items added by that act, see note 2 supra, do not contain a termination date; a 5-year limit placed by the Senate on DISC was opposed by the Treasury and rejected in conference.

The tax expenditure analysis, however, really tells us why that traditional approach is not enough. The analysis helps us to understand why that approach can deal with some problems but why it fails to reach others, as indeed it did as recently as 1969. For tax expenditure analysis conceives of the special provisions—the preferences and loopholes—as Government financial assistance comparable to that contained directly in the Budget. So viewed, this aspect of tax reform becomes a review of budgetary programs.

The questions then become:

Which tax programs—which tax expenditures—which tax incentives—which special tax provisions—can simply be dropped without substituting another form of Government assistance, because on review it is seen that Government policies and priorities do not require the expenditure of Federal funds for the purposes involved in these items?

Which tax programs cannot be simply dropped—because Government policies and priorities do require the expenditure of Federal funds for the purposes involved—but can be readily changed from tax expenditures to direct expenditures, in a way to achieve an improvement in equity and efficiency?

Which tax programs, in the group which cannot simply be dropped, would have to meet special criteria regarding the structure of the substituted direct expenditure program, so that a change must await the development of the latter program?

Finally, which tax programs function much more efficiently and effectively as tax expenditure programs than as direct expenditures so that any consequent loss in tax equity or strain on the tax structure must yield to the need for the use of the tax system in this special case to carry out a particular Government policy?

An overall view of much of the task of tax reform, under this analysis, can therefore be obtained by examining the list of items in the tax expenditure budget in the light of the questions posed earlier. I do not propose to do this in detail here for all items. But a glance at the list and some general observations may be helpful.

First.—A considerable number of items in the tax expenditure list might be dropped without substituting any alternative program of financial assistance from the Government. The additional revenue so obtained could be used for rate reduction, for other tax reduction purposes, or for budgetary purposes. In most of these instances tax history has resulted in a tax expenditure for a group or activity that has no present claim for such governmental assistance. Current budgetary priorities and policies would simply leave the matter to the judgments of the private sector. For these items the pace of tax reform progress is largly measured in political terms.

Thus, there are, a number of items as to which it would seem appropriate that the proponents for retention of the tax expenditures should be called upon to make the case for their continuance. Thus, they should be called upon to make the case for their continuance. Thus, they should be required to demonstrate that, as a matter of national priorities and policies, the should continue to receive financial assistance for the activities involved, and if so, assistance of the magnitude now obtained. I would suggest the following items in the tax expenditure budget (table 1) could be explored from this standpoint to see if they fall in this first category:

The items under International Affairs and Finance.

Farming under Agriculture and Rural Development.

The items under Natural Resources, except pollution control facilities and mine safety.

The items under Commerce and Transportation, except the investment credit, railroad rolling stock, and perhaps buildings.

Sick pay, interest on life insurance savings, casualty losses, and Income Security.

Deduction of gasoline, personal property and similar taxes under Aid to State and Local Government.

Thus listing is based on the previous legislative consideration of these items, and the relevant 1969 debates, which largely appear to indicate that other factors, and not a considered congressional judgment that financial assistance is needed, are responsible for their continued presence.

The important point as to these items, however, is that if financial assistance is considered necessary, the items would then generally seem to fall in the next category, encompassing programs where direct financial assistance can readily be structured. Thus, for example, if it is decided that elimination of tax expenditures for natural resources should be accompanied by Government assistance in oil and mineral exploration, the direct programs can readily be devised. The same can be said for tax expenditures for farming. Nevertheless, in the 1969 debates on these items the degree of tax change appeared to turn on vote counting and not on the aspect of an alternative assistance program.

The treatment of individual capital gains may also belong in this category, judging from the 1969 history when the maximum rate was in effect raised from 25 percent to 35 percent without discussion of any alternative direct assistance to private investment. Moreover, changes in the present system of exempting appreciation in property property passing at death, the largest defect in the capital gain area, seem related to revision of the estate and gift taxes and not to the provision of direct budgetary programs of assistance.

Second.—A number of tax expenditure items now provide financial assistance for activities as to which it is quite probable that the groups assisted could be expected to sustain the burden of demonstrating the appropriateness of financial assistance. However, analysis of the special tax provisions involved has demonstrated in a number of these situations serious inequities and inefficiencies in the use of tax system to apply that assistance. Both tax and direct budgetary policy would thus appear to dictate a conversion of some or all of the funds involved from the "tax expenditure budget" to the regular budget. This could be accomplished by the concurrent removal of the special tax provision and the adoption of a direct expenditure program structured to provide whatever financial assistance is appropriate and in the form desired. Any amounts not so converted would simply remain part of general revenue receipts. Tax reform would thus in this category encompass a double-sided program: removal of the special tax provision and simultaneous adoption of a direct expenditure program using the funds made available by the tax change. In the past, tax reform proposals have generally dealt only with the first aspect, and for this reason have been vulnerable to objections by those benefited by the special tax provision that its continuance was vitally needed, as an incentive, subsidy, benefit, assistance, or whatever.

Nearly all of the remaining items in the tax expenditure list appear to fall in this category, with the exception of the few matters discussed later.[25] We are here considering items in which the formulation of the direct expenditure program would in general not appear to be a difficult matter. Presumably straightforward grant or loan expenditure programs would usually be involved. In some cases somewhat comparable programs presently exist, though usually involving smaller amounts. The important task is to interest the administrative agency having cognizance of the particular field to concern itself with working out the direct expenditure program. It is really unfortunate that up to now these administrative agencies have largely left unexamined the tax expenditure items in their areas, allowing the tax funds to be spent without coordination with their own objectives and programs. In other cases, also unfortunately, they have uncritically joined the benefited groups in defense of the tax programs.

Third.—The first two categories cover most of the items in the tax expenditure list. The few that remain appear to impose special requirements that must be incorporated into any alternative program of direct assistance, and thus to lift such programs out of the more usual run of Federal assistance programs. In other words, the use of the tax system in these cases provides monetary assistance under criteria or circumstances which, if they must be duplicated in a direct program if it is to replace the tax expenditure, will necessitate some special structuring of that program.

We can here include the following:

> Exemption of interest on State and local obligations and deductibility of various State and local taxes, under Aid to State and Local Government, where the task is to devise a direct subsidy that State and local governments will consider to possess sufficient automaticity and freedom from Federal control. The use of a taxable bond on which a significant portion of the interest cost is automatically paid by the Federal Government should here be a suitable approach.[26]

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[25] For a more detailed discussion of the items in this second category, see Surrey, supra, note 1, article in 84 Harv. L. Rev. 352 (1970).

[26] See Federal Reserve Bank of Boston, Release R792, Sept. 2, 1971, reporting on a conference of "30 leading authorities on State and local finance" coming from a "great variety of organizations" and with a "wide range of professional backgrounds", and stating the participants had reached the following consensus:

The Federal Government should provide State and local governments with an additional method for obtaining access to the credit markets. Specifically, the group agrees that State and local governments should have the option of issuing fully-taxable obligations (of the character presently tax exempt under the Internal Revenue Code) with the Federal Government obligated to pay to the issuer, without any restrictions, a fixed percentage of the interest cost. This percentage should be set at a level sufficient to encourage widespread use of this option.

The Investment Bankers Association has taken a position along similar lines, at a meeting held December 1, 1971; see especially point three in the following statement:

1. The market for State and local tax-exempt securities developed through constitutional interpretation as a protection of the State and local governments' independence of action. It has served that purpose well. With massive growth in Federal income taxation it has also become valuable in terms of interest cost saving. On average and in the main, it has maintained this interest saving at 30 to 35 percent for issues, even in the face of substantial volume increases. The tax-exempt securities market has proved itself a valuable part of our financial structure and has importantly increased the aggregate flow of funds into the bond and credit markets. It has given a strong and sustaining performance and we expect it to continue as the main source of capital funds for State and local governments. There should be no tampering with its basic structure.

2. We are compelled by logic and tradition to support proposals which simplify and consolidate present Federal credit programs. But, we support such proposals only for better consolidation and budget control and not as vehicles of further expansion of Federal agency financing. By circumventing the normal market mechanism and its reliance upon local choice, a direct agency lending program is inimical to continuing free and decentralized decisionmaking by State and local units. By artificially homogenizing borrowers and eluding the normal budgeting checks and controls, it warps the allocation of resources. Its use should be reserved for extraordinary circumstances where use of the free market is demonstrably impossible.

3. Taking cognizance of the developing position of the State and local governmental organizations, if a choice must be made between further expanded Federal agency credit activity and the authorization of taxable bonds with an automatic interest cost subsidy, we strongly support the latter. We favor the taxable bond option in this circumstance because we believe it to be more consistent with maximum flexibility and freedom in local decisionmaking and with a free and broadly based market mechanism. We point out that

Deduction of charitable and educational contributions, under Income Security and Education and Manpower, where the task is to devise a direct subsidy that continues private designation of the charitable donee and freedom from Federal control. The thinking here is still in the initial stages, with some researchers exploring a system of direct matching grants.[27]

Deduction and credit of political contributions, under Election Process, where the task is to devise either a direct subsidy that continues private designation of the political candidates, such as a matching system, or a system of direct government financing of political campaigns without reliance on private funds.

The tax assistance accorded to owner-occupied homes and rental housing, under Community Development and Housing, and perhaps to buildings, under Commerce and Transportation. As to owner-occupied housing, the task is to devise a direct subsidy that can replace, for those homeowners for whom assistance is proper, the present tax incentives of the deduction for mortgage interest and property taxes. As to rental housing, the task is to devise a direct subsidy for low-income housing to replace the present inefficient and overgenerous tax shelter that now exists through the deduction of accelerated depreciation for new housing, 5-year amortization in the case of rehabilitated housing, and other real estate tax benefits. The research here seems to be gathering momentum and the problem could be solved if HUD and the Treasury would recognize their joint responsibilities for the solution.

In a special category, finally, we could probably place the 7-percent investment credit for machinery and equipment, under Commerce and Transportation. This is a tax subsidy of broad scope and high visibility, so that its purpose as an incentive is readily apparent. The more important task here is to develop the credit so that it can become a flexible economic tool to be used countercyclically to dampen business demand for credit and funds in a tight money period and to spur investment demand in a slack period. At the same time, care needs to be taken that the existence of this special credit does not become the continuing wedge for those urging the adoption of a whole flock of tax subsidies in other fields where the direct approach is clearly preferable. This has been its history in the past; and while the necessary care was taken in the 1960's, this so far has not been the case starting in 1969.

In conclusion, the pathways to reform of the present tax expenditure apparatus are reasonably clear. What is needed are research in some areas, the exercise of responsibility by the administrative agencies involved in other areas, leadership toward reform by the Office of Budget and Management and the Treasury Department, and political will to reform on the part of legislators.

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[27] See McDaniel, "Alternatives to a Federal Income Tax Deduction in Support of Private Philanthropy," in Tax Institute of America Symposium on "Impact of Taxes on Philanthropy," Dec. 2–3, 1971.

State authorization as well as Federal legislation may be required in order to avoid constitutional questions on reciprocal tax immunity, and that the subsidy commitment must be a binding one. We believe that a subsidy commitment should not exceed one-third of taxable interest cost which would be consistent with preserving the benefits accruing in the present market structure, while extending to issue an alternative means of minimizing interest costs.

SUBSIDIES IN FEDERAL CREDIT PROGRAMS

By MURRAY L. WEIDENBAUM *

The purpose of this study is to indicate the variety of forms in which the Federal Government provides credit subsidies and how their costs and benefits might be appraised. It is hoped thus to further the understanding of the impact of these subsidy programs on the allocation of resources and their contribution to broader objectives of economic growth and stabilization.

Over the years, substantial numbers of credit programs have made their way through the legislative process of the Federal Government. These programs emerged on an ad hoc basis, with each program directed toward providing assistance in overcoming a specific problem at hand. As a result of this gradual but very substantial accretion, Federal credit program subsidies are now provided to a great many and variety of sectors of the American economy: Housing, agriculture, transportation, health, education, State and local governments, business—as well as to foreigners.[1]

As stated by the President's Commission on Budget Concepts:

> Most Federal loan programs contain at least some element of subsidy. In fact, if this were not true, a serious question could be raised about the appropriateness of such activities being conducted by the Federal Government rather than by private financial institutions. To the extent that Federal loans include a subsidy element by lending at more favorable interest rates than the cost of money to the Government (or the even higher cost of money obtained through private sources), they are at least in part grants or transfer payments rather than loans.[2]

FACTUAL BACKGROUND

Federal credit aids are provided in four major forms:[3]

1. Direct loans by Federal departments and agencies.—These, such as the 2-percent loans made by the Rural Electrification Administration, generally involve significant subsidies because of low lending rates and, in many cases, absorption by the Government of administrative expenses and losses arising from loan defaults. Direct loans, however, have become a relatively less important form of Federal credit aid, in part because they require direct budget outlays. The volume of direct loans outstanding has virtually stabilized in recent years at about the $50 billion level. New commitments for direct loans are expected to increase by only a modest amount, from $10.4 billion in the fiscal year 1970 to $11.3 billion in the fiscal year 1972. (See table 1.) Virtually all of this increase would be eliminated by legislation

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[1] Detailed information on individual credit programs is presented in special analysis E, "Special Analyses, Budget of the United States, Fiscal Year 1972," Washington, Government Printing Office, 1971, pp. 67–86.

[2] "Report of the President's Commission on Budget Concepts," Washington, Government Printing Office, October 1967, p. 51.

[3] For a discussion of the types of credit assistance, see U.S. Senate, Committee on Banking and Currency, "Federal Credit Programs," Washington, Government Printing Office, 1967.

to remove the Export-Import Bank loans from the budget totals.[4]

TABLE 1.—NEW COMMITMENTS FOR DIRECT FEDERAL LOANS, FISCAL YEARS

[In millions of dollars]

Agency or program	1970 actual	1971 estimate	1972 estimate
EXPENDITURE ACCOUNT			
Funds Appropriated to the President:			
International security assistance	70	683	486
International development assistance	807	831	947
griculture:			
Commodity Credit Corporation	2,833	2,491	2,772
Health, Education, and Welfare	217	281	34
Other programs	11	10	17
Total, expenditure account	3,937	4,296	4,256
LOAN ACCOUNT			
Funds appropriated to the President:			
Office of Economic Opportunity	3	4	----------
Overseas Private Investment Corporation	----------	15	25
Agriculture:			
Commodity Credit Corporation	260	342	386
Rural Electrification Administration	470	470	564
Farmers Home Administration	451	458	87
Commerce:			
Economic Development Administration	61	64	63
Maritime Administration	----------	----------	----------
Trade adjustment assistance	----------	----------	100
Health, Education, and Welfare	21	61	429
Housing and Urban Development:			
Low-rent public housing	169	185	172
Community development loans	677	640	767
Federal Housing Administration	----------	----------	----------
Government National Mortgage Association	995	75	28
New communities fund	----------	----------	----------
Other mortgage credit	127	100	100
Interior	13	11	17
Transportation	3	92	35
Veterans' Administration:			
Housing loans and guarantees	307	334	236
Insurance policy loans	194	203	214
District of Columbia	129	163	183
Export-Import Bank	2,209	2,927	3,246
Federal Home Loan Bank Board	90	13	19
Small Business Administration	452	452	343
Other agencies	3	2	2
Total, loan account	6,507	6,611	7,016
Grand total	10,444	10,907	11,272

Source: Special Analyses, Budget of the United States, fiscal year 1972, Washington, Government Printing Office, 1971 p. 71.

2. Loans guaranteed and insured by Federal departments and agencies.—These account for the greatest share of the current expansion in Federal credit subsidies, largely because the loans are excluded from the budget. Also, there has been a substantial increase in the Federal payments of part of the interest on insured loans for such programs as low-income housing and student aid.

Guaranteed and insured loans require budget outlays only to the extent of any interest subsidies paid directly by the Government and any administrative expenses or losses which are not covered by guarantee or insurance fees or premiums. The volume

[4] Although formally not considered a Federal credit program, the relatively generous advance payments and progress payments made by the Department of Defense do represent interest-free provision of working capital to Government contractors. This special subject is dealt with below.

of guaranteed and insured loans outstanding is estimated to increase from $125 billion on June 30, 1970, to $167 billion on June 30, 1972. New commitments for these loans will increase from $27 billion in the fiscal year 1970 to $47 billion in the fiscal year 1972. (See table 2.)

TABLE 2.—NEW COMMITMENTS FOR FEDERAL LOAN GUARANTEES, FISCAL YEARS

[In millions of dollars]

Agency or program	1970 actual	1971 estimate	1972 estimate
EXPENDITURE ACCOUNT			
Funds appropriated to the President:			
International security assistance		67	96
International development assistance	51	52	94
Total expenditure account	51	119	190
LOAN ACCOUNT			
Funds Appropriated to the President:			
Overseas Private Investment Corporation	91	48	119
Agriculture:			
Farmers Home Administration	1,136	1,317	2,268
Commerce:			
Economic Development Administration	(1)		1
Maritime Administration	110	321	241
Trade adjustment assistance			100
Health, Education and Welfare	959	1,521	3,070
Housing and Urban Development:			
Low-rent public housing	1,517	1,669	1,548
Community development loans	569	952	1,519
Federal Housing Administration	16,324	22,434	26,468
Government National Mortgage Association [2]			
New communities fund	75	160	250
Other mortgage credit	202	200	200
Veterans Administration:			
Housing loans and guarantees	3,720	4,887	5,962
District of Columbia			71
Export-Import Bank	2,280	2,976	3,400
Small Business Administration	446	1,022	1,192
Other agencies or programs	2		
Total, loan account	27,431	37,632	46,409
Grand total	27,482	37,751	46,599

[1] Less than $500,000.

[2] To avoid double counting with data in table 1, excludes GNMA commitments for guarantee of mortgage backed securities; 1970–72 amounts are $438,000,000, $1,301,000,000, $1,550,000,000.

Source: Special Analyses, Budget of the United States, fiscal year 1972, Washington, Government Printing Office, 1971, p. 71.

Since these data were prepared, the Congress has approved legislation authorizing the Federal Government to guarantee up to $250 million of bank loans to the Lockheed Aircraft Corp. Supposedly the loans are to be made at the prime rate and Lockheed will be paying a special guarantee fee to the Treasury. At this point it is not clear what amount of subsidy, if any, is involved. In any event, the loan guarantee to this large aerospace company does provide another indication of the expanding nature of Federal credit programs.

3. Interest subsidy payments on loans made by private lenders.—As noted above, these are provided in connection with some guaranteed loans. Federal interest subsidy payments are also provided for certain loans which are not guaranteed, such as college housing loans and academic facilities loans. Such loans are included in the data in table 2 covering guaranteed loans.

4. Loans by federally sponsored agencies, such as the Federal National Mortgage Association, the Federal home loan banks, and the farm credit agencies.—These involve relatively little direct subsidy. However, these ostensibly privately owned agencies have various tax advantages and are able to borrow funds in the market at low interest rates because of the implicit Government backing of their activities (to some minor extent, thus perhaps raising the cost of Treasury borrowing). Loans made by sponsored agencies have increased sharply over the past decade, largely because of the secondary market support provided for housing. (See table 3.) The total of these loans outstanding is estimated at $53 billion at the end of fiscal year 1972. (See table 4.)

TABLE 3.—NET CHANGES IN OUTSTANDING LOANS FOR MAJOR GOVERNMENT-SPONSORED CREDIT PROGRAMS. FISCAL YEARS

[In millions of dollars]

Agency	Increase		
	1970 actual	1971 estimate	1972 estimate
Housing and Urban Development: Federal National Mortgage Association [1]	5,402	4,035	3,661
Farm Credit Administration:			
Banks for cooperatives	155	66	91
Federal intermediate credit banks	742	642	722
Federal land banks	438	464	494
Federal Home Loan Bank Board:			
Federal home loan banks	3,823	2,264	3,000
Federal Home Loan Mortgage Corporation		573	1,260
Total	10,560	8,045	9,228

[1] Data for Federal National Mortgage Association represents gross unpaid principal amounts.

Source: "Special Analyses, Budget of the United States, Fiscal Year 1972," Washington, Government Printing Office, 1971, p. 81, and some later data.

TABLE 4.—FEDERAL AND FEDERALLY ASSISTED CREDIT, NEW COMMITMENTS AND INCREASES IN LOANS OUTSTANDING, FISCAL YEARS

[In billions of dollars]

Category	1970 actual	1971 estimate	1972 estimate	Outstanding June 30, 1972 estimate
Direct loans (financed in the budget)				56.5
New commitments	10.4	10.9	11.3	
Net increase in loans outstanding	3.0	2.7	2.7	
Assisted loans (financed outside the budget):				
Guaranteed and insured loans				167.4
New commitments	27.5	37.8	46.6	
Net increase in loans outstanding	8.4	17.9	24.5	
Government-sponsored:				
Agency loans				53.2
New commitments	(1)	(1)	(1)	
Net increase in loans outstanding	10.6	8.0	9.2	
Total assisted loans: [2]				
Net increase in loans outstanding	12.9	21.1	30.1	195.1
Grand total: [2]				
Net increase in loans outstanding	15.9	23.8	32.8	251.5

[1] Not available.
[2] Adjusted to eliminate double counting due largely to purchases of insured loans by Government-sponsored agencies.

Source: Special Analysis E, Special Analyses, Budget of the United States, fiscal year 1972, Washington, Government Printing Office, 1971, p. 82, and some later data.

In recent years, the great bulk of federally extended or federally assisted credit has been in the form of Federal guarantees of credit provided by private sources via these governmentally-sponsored intermediaries. As shown in table 4, such guarantees in the fiscal year 1972 are estimated to represent $24.5 billion of the total increase of $32.8 billion of Federal credit for the year.

On a cumulative basis, Federally-guaranteed and insured loans are estimated at $167.4 billion or two-thirds of the total of $251.5 billion of Federal credit outstanding on June 30, 1972.

Economic Impacts of Interest Subsidies

The chief purpose of a subsidy, including a credit subsidy, is to achieve an allocation of resources that differs from that which would prevail in its absence. In addition, when the economy is operating at less than full employment, a subsidy program may stimulate aggregate demand and output.

People produce goods and services because they expect payoffs—usually pecuniary. These payoffs are sometimes referred to as private benefits. At the same time the process of production creates general benefits that spill over to other members of the society. These spillover benefits are usually referred to as externalities. A frequently cited example is that of a railroad moving for the first time to a town. It is argued that the railroad creates many new jobs and businesses. Similarly, education presumably enhances the earning power of the well-trained person—a private benefit. At the same time, it is argued that education contributes to the well-being of society at large—an externality.

The forces of the market are such that goods with large private benefits are more apt to be produced than those yielding little private benefits. Thus, if two goods carry the same total in combined private and social benefit, the good with the greater share in private benefits would receive priority; that is, it would be produced in greater quantity.

From time to time a political decision is made to subsidize an activity with small private benefits but with large social benefits. Conversely, governments sometimes impose taxes on goods that have little or negative social benefits (e.g., cigarettes, alcoholic beverages), even though their private benefits may be substantial.

Externalities can occur at both the production and consumption levels. In farming, for example, government has subsidized the producer because supposedly externalities attach to the role of farming in the economy. Similarly, housing is subsidized in various forms, presumably because the benefits of adequate housing—such as improved health and increased social stability—are not captured fully by the private market. The effect of the subsidy is to change the allocation of resources—although the total pie may also be increased—with some potential buyers being "crowded out." The excluded buyers could be from the subsidized industry or from other industies. In general, if the subsidy is broad—i.e., applicable to the entire industry—the "crowding out" effect would fall chiefly on industries other than the one being subsidized. If the subsidy is specific to only certain parts of an industry—e.g., low income housing rather than the entire housing market—there is an increased possibility that the would-be buyers would be excluded from the same industry.

The effect of a credit subsidy is to increase the market power of the subsidized borrower.[5] Presumably, the across-the-population distribution of expenditures will differ from that which would have obtained in the absence of the subsidy. Depending on which demands are stimulated and which would-be borrowers are "crowded out", a subsidy may alter demands for goods and services by different sectors of the economy. Moreover, if supplies of the factors of production are sufficiently responsive to changes in the availability and terms of credit, then resources may actually be moved from one sector to another. Under conditions of full resource use, one economic unit's gain is another unit's loss, and there is no presumption that a net economic benefit emerges. On the other hand, if the subsidy expands output without "crowding out" other borrowers, there will be a net economic gain.

In any event, to the extent that social goals are achieved regarding preferred expenditure flows and resource uses, subsidies can be regarded as beneficial. At the heart of a subsidy is a political decision to favor some at the expense of others.

Because a credit subsidy involves a balancing of interests, it would be useful to have fairly well-developed notions regarding the incidence of benefits and costs of any specific program in question. In light of the variety of credit programs, it is simply not possible to make firm statements with broad applicability. Even so, it is possible to establish terms of reference within which to evaluate a specific case.

In discussing the question of impact, it is important to distinguish between what might be called the "expenditure impact" as distinct from the "resource impact." The subsidy-induced increase in nominal expenditures in a given sector of the economy may be regarded as the "expenditure impact." The "expenditure impact" also contains a subsidy-induced reduction in expenditures by would-be borrowers who have been "crowded out" of the market. If the subsidy simply crowds other borrowers from the sector intended to be assisted, the "expenditure impact" will have been fully dissipated.

The "resource impact" refers to the change in resource allocation brought about by a credit subsidy. There often may be an implicit presumption that the "resource impact" will roughly parallel the "expenditure impact." However, the actual patterns of resource flows will depend on underlying market conditions.

What the "resource" and "expenditure" impacts will be, depend essentially on four factors: (*a*) the state of aggregate demand and capacity utilization, (*b*) the ability of the subsidized sector to accommodate increased demand, (*c*) the degree of consumer response to the decreased costs resulting from the subsidy, and (*d*) the size of the subsidy itself. Given a certain subsidy level, the greater the capacity of the market to generate additional supplies to meet increased demands and the greater the consumer response to the decreased costs, the greater will be the resource impact of the program.

Put differently, the effectiveness of a given credit subsidy depends on how responsive the consumers and the producers are to changing cost relationships. Moreover, the market or sector with very responsive

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[5] A loan subsidy may also involve a Federal guarantee. The effect of the guarantee may be to shift some of the costs associated with default to the public at large and away from the private lender, thereby providing an implicit subsidy to the lender which may or may not be passed on to the borrower in the form of a lower interest rate.

demands will be affected more strongly by an increased cost than the market faced with unresponsive demands. Hence, the subsidy costs to the Government will be minimized if the subsidy program is geared to markets with highly responsive demands. Moreover, the need for subsidy may be greatest in such a market.

Where the benefits of the credit subsidy ultimately rest is again a matter of supply and demand responsiveness. As a rule, the share of the subsidy benefit is greatest to the side of the supply-demand relationships that is least responsive. In farming the Government subsidy often causes a greater supply in the market than the consumer is willing to take. As a result, market prices may drop to such an extent that the farmer is not much better off after the subsidizing than before; this is the chief reason why acreage restrictions are usually coupled with agricultural subsidy programs. In housing, on the other hand, where the consumer generally responds strongly to changes in credit costs, the subsidy is apt to be shared more equally with the housing industry.

Measuring the Subsidy Element

Credit program subsidies may be discussed in terms of (1) the benefit to the borrower, (2) the "opportunity cost" to the Government, or (3) the out-of-pocket or "cash cost" to the Government.

The benefit-to-borrower concept is perhaps the most attractive to the economist as a measure of the impact of Federal credit aid on demand and on the allocation of resources. Yet the benefit concept poses the most formidable measurement problems. Some lenders may use the insurance and guaranty programs simply because they are there, making loans that they would have made in any case, though on somewhat more stringent terms. In contrast, guaranteed loans to submarginal borrowers, for example, may be in principle at least as income-generating as Government transfer payments. In practice, however, it is difficult to identify these benefits unequivocally.

According to a distinguished student of the subject, George Break, perhaps the most intractable programs are those of the Federal Housing and Veterans' Administrations. To measure their effects on the level of residential construction requires both an estimate of their impact on mortgage credit terms and then an estimate of the effect of that credit-term change on the demand for new housing Break's exploratory studies in this area, made in 1957–59, yielded a set of estimates with wide variance. However, the smallest estimate did indicate an expansionary force of $1.4 billion a year, about 40 percent of the average annual change in FHA and VA loans outstanding in 1957–59.[6]

A more recent study, covering the 1946–63 period, places the current impact of the programs at the considerably lower level of about $1.0 billion a year, or only about 25 percent of the average annual increase in FHA and VA loans outstanding during 1963–66.[7]

The Break and Schaaf estimates of 40 percent and 25 percent would presumably be much higher today because of the large interest subsi-

[6] President's Commission on Budget Concepts, "Staff Papers and Other Materials Reviewed by the President's Commission on Budget Concepts," Washington, Government Printing Office, Oct. 1967, p. 393.

[7] A. H. Schaaf, "Effect of Federal Mortgage Underwriting on Residential Construction," "Appraisal Journal," Jan. 1967, pp. 54–69.

dies introduced into the FHA and other insured loan programs in recent years. (See table 8.)

There is no conclusive method of measuring the extent to which loans under some guarantee programs might have been made without the Government guarantee. This is particularly true of guaranteed loans at market rates of interest, such as the regular mortgage insurance program of the Federal Housing Administration and the Export-Import Bank guarantees. It is not clear in such self-supporting programs whether there is a substantial benefit to the borrower or whether in many cases the borrower would have been able to obtain nonguaranteed credit on essentially similar terms.

On the other hand, many loans would clearly not have been made without the Government guarantee. An extreme example is the loan guarantee program for public housing, where virtually all of the principal and interest payments are made by the Federal Government. That is, the rental income from public housing projects barely covers current operating and maintenance expenses, and in some projects not even those expenses are covered. Thus the public housing bonds are ultimately retired almost entirely from annual debt service contributions by the Federal Government.

Consequently, the credit program subsidy for a $10 million bond-financed public housing project is approximately $10 million, and the benefit to the borrower is equivalent to a $10 million cash grant.[8]

It will not be attempted here to measure the "opportunity costs" to the Government of using its resources for Federal loan programs. That is, given limited resources, what would be the return to the Government (or to the private sector) from investment in alternative projects? Such analysis has been attempted by others recently and will not be repeated here.[9]

The Joint Economic Committee and other studies, however, have concluded that, in evaluating Federal investment programs, the minimum discount rate should be one which reflects the current cost of borrowing to the Government for periods comparable to the period of the investment (or loan).

Thus the use of the term subsidy here will refer to the cash cost to the Government of Federal credit programs including (*a*) direct interest subsidy payments, (*b*) implicit interest subsidies arising from the difference between the rates at which the Government is currently lending and the rates at which it is currently borrowing, (*c*) the cost of administering the loan programs, and (*d*) the cost from any defaults on such loans, to the extent that these costs are not covered by fees or other charges imposed on private borrowers or lenders.

An important limitation of the subsequent analysis needs to be acknowledged at the outset: the degree of subsidy which will be identified will depend in good measure on the discount rates which are used as the basis for comparison. Two alternative interest rates are used here—7½ percent and 9½ percent.

The lower rate is close to the average Treasury borrowing rate for 5- to 7-year issues in 1970, the most recent year for which comprehensive data on Federal subsidies could be obtained. The higher rate

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[8] Table 8 shows only the interest portion of the public housing subsidy. In fact, virtually the entire amount of the $1.5 billion of long-term loan guarantee commitments in fiscal year 1970 will, under present arrangements, be paid off by the Federal Government and is thus equivalent to a $1.5 billion cash grant in fiscal year 1970.

[9] U.S. Congress, Joint Economic Committee, "Economic Analysis of Public Investment Decisions: Interest Rate Policy and Discounting Analysis," A Report of the Subcommittee on Economy in Government, Washington, Government Printing Office, 1968.

approximates the typical gross yield on federally guaranteed loans in that year. Thus, even the higher rate may tend to underestimate the subsidy element in some of these credit programs because it may not include adequate allowance for the expenses of servicing and administration or the added cost of default and capital loss for programs where guarantee fees do not adequately cover such expense.

Clearly, other interest or discount rate assumptions would yield different estimates of subsidy benefits. Nevertheless, when we examine the specifics of Federal credit programs it becomes quite clear that the subsidy element in many of them is generous. As will be shown subsequently, there are numerous such programs where the interest rate charged is zero, or 2 or 3 percent—clearly below any reasonable public or private standard for a going interest rate or rate of return.

For purposes of standardization, the two interest rates mentioned above—7½ and 9½ percent—will be used in all subsidy calculations in this study. Tables 5, 6, and 7 show how the subsidy calculations have been performed.

As demonstrated in tables 5, 6, and 7, the value of the interest subsidy varies directly with (1) the difference between the interest rate paid by the borrower and the assumed discount rate or market rate of interest, (2) the maturity of the loan, and (3) the extent to which interest is forgiven or amortization delayed during the life of the loan. Using the methodology of tables 5–7, table 8 provides subsidy estimates for the various Federal credit programs.

TABLE 5.—CALCULATION OF INTEREST SUBSIDIES FOR LONG-TERM AMORTIZED LOANS, RURAL ELECTRIFICATION ADMINISTRATION LOANS

Gross loan outlays in fiscal year 1970 ..... $497,000,000.
Borrower loan terms ..... 2 percent, 33 years.

Financial factors	Assumed interest rate (percent) 7½	9½	2
Annual payment necessary to pay off a loan of $1 over 33 years	$0.082594	$0.100004	$0.041687
Present value of $1 payable yearly for 33 years	12.127421	9.999559	----------

Subsidy if rate were 7½ percent

First year = (0.082594 − 0.041687) × $497 million = $20 million.
Capitalized value = 12.127421 × $20 million = $246 million.
Degree of subsidy = $246 million ÷ $497 million = 50%.

Subsidy if rate were 9½ percent

First year = (0.100004 − 0.041687) × $497 million = $29 million.
Capitalized value = 9.999559 × $29 million = $290 million.
Degree of subsidy = $290 million ÷ $497 million = 58%.

TABLE 6.—CALCULATION OF INTEREST SUBSIDIES FOR DELAYED PAYMENT LOANS WITH INTEREST FORGIVENESS, CAPITAL FOR STUDENT LOANS

Gross loan outlays in fiscal year 1970 ..... $217,000,000
Borrower loan terms:
- Interest rate while student is in school plus 9 months (percent) 0
- Interest rate during repayment period (percent) 3
- Average period student borrower is in school plus 9 months (years) 3
- Average repayment period (years) 10

Financial factors	Assumed interest rate (percent) 7½	9½	3
Annual payment necessary to pay off a loan of $1 over 10 years	$0.145686	$0.159266	$0.117231
Present value of $1 payable yearly for 10 years	6.964081	6.278798	----------
Present value of $1 payable yearly for 3 years	2.600526	2.508907	----------
Present value of $1 due in 3 years	.804961	.761654	----------

Subsidy if rate were 7½ percent

First year = (0. 075 − 0) × $217 million = $16 million.
Subsidy during each year of repayment period = (0.145686 − 0.117231) × $217 million = $6 million.
Capitalized value = 2.600526 × $16 million + 6.864081 × 0.804961 × $6 million = $76 million.
Degree of subsidy = $76 million ÷ $217 million = 35%.

Subsidy if rate were 9½ percent

First year = (0.095 − 0) × $217 million = $21 million.
Subsidy during each year of repayment period = (0.159266 − 0.117231) × $217 million = $9 million.
Capitalized value = 2.508907 × $21 million + 6.278798 × 0.761654 × $9 million = $95 million.
Degree of subsidy = $94 million ÷ $217 million = 44%.

TABLE 7.—CALCULATION OF INTEREST SUBSIDIES FOR SHORT-TERM SINGLE PAYMENT LOANS, URBAN RENEWAL

Gross loan outlays in fiscal year 1970	$595,000,000.
Borrower loan terms	2 percent, 6 months.

Financial factors	Assumed interest rate (percent) 7½	9½	2
Payment necessary to pay off a loan of $1 at the end of 6 months	$1.0375	$1.0475	$1.0100
Present value of $1 due in 6 months	.963855	.954654	----------

Subsidy if rate were 7½ percent

First year = (1.0375 − 1.0100) × $595 million = $16 million.
Capitalized value = 0.963855 × $16 million = $16 million.
Degree of subsidy = $16 million ÷ $595 million = 3%.

Subsidy if rate were 9½ percent

First year = (1.0475 − 1.0100) × $595 million = $22 million.
Capitalized value = 0.954654 × $22 million = $21 million.
Degree of subsidy = $21 million ÷ $595 million = 4%.

TABLE 8.—INTEREST SUBSIDIES IN FEDERAL CREDIT PROGRAMS, FISCAL YEAR 1970

[In millions of dollars]

Agency and program	Gross loan outlays	Borrower loan terms[1] Percent	Borrower loan terms[1] Years	Subsidy if rate were 7½ percent First year	Subsidy if rate were 7½ percent Capitalized value	Subsidy if rate were 9½ percent First year	Subsidy if rate were 9½ percent Capitalized value
DIRECT LOANS							
Funds appropriated to the President:							
Security assistance	136	6	10	1	9	3	20
Development assistance	906	2	[2] 40	50	517	68	609
Agriculture:							
Commodity Credit Corporation:							
Price support	2,338	3½	1	94	87	140	128
Public Law 480	494	2½	33	19	226	27	272
Export credit sales	209	6¾	2½	1	3	4	9
Storage facilities	50	6	5	([3])	2	1	4
Rural Electrification Adm nistration:							
Rural electric	362	2	33	15	179	21	211
Rural telephone	135	2	33	6	67	8	79
Farmers Home Administration:							
Soil, water and watershed	65	5	40	1	17	3	26
Farm operating	280	6⅝	7	2	8	5	26
Emergency credit	90	3	2	3	6	4	8
Rural housing	143	6¼	33	1	18	4	40
District of Columbia:							
Capital outlay loans	89	6¼	30	1	11	2	24
Repayable advances	40	0	½	2	1	2	2
Commerce:							
Development facilities	15	5¾	31.9	([3])	3	([3])	5
Industrial development	26	6¼	18.6	([3])	2	1	5

See footnotes at end of table ,p. 116.

TABLE 8.—INTEREST SUBSIDIES IN FEDERAL CREDIT PROGRAMS, FISCAL YEAR 1970—Continued

[In millions of dollars]

Agency and program	Gross loan outlays	Borrower loan terms [1]		Subsidy if rate were 7½ percent		Subsidy if rate were 9½ percent	
		Percent	Years	First year	Capitalized value	First year	Capitalized value
DIRECT LOANS—Continued							
Health, Education, and Welfare:							
Capital for student loans	217	0	[4] 13	16	76	21	95
Higher education facilities	102	3	40	4	46	6	57
Housing and Urban Development:							
Urban renewal	595	2	½	16	16	22	21
Low-rent public housing	720	0	⅔	36	34	46	43
College housing	184	3	40	7	84	10	102
FHA fund	135	5	30	2	28	5	46
Housing for elderly	106	3	50	4	53	6	63
Public facility loans	44	5⅜	40	1	10	2	16
Rehabilitation fund	39	3	20	1	12	2	16
Justice: Law enforcement education	18	[2] 0	10	1	4	2	5
Transportation: Highway advances	3	0	5	(3)	1	(3)	1
General Services Administration: Surplus property sales	44	7	9	(3)	1	1	4
Veterans' Administration:							
Loan guarantee revolving fund	198	8½	25	−2	−18	2	15
Direct loan fund	115	8½	30	−1	−11	1	10
Insurance policy loans	195	4	10	4	30	7	44
Export-Import Bank	1,569	6.3	7½	12	65	32	169
Equipment and service loans	1,095	5.9	7½	11	63	26	134
Commodity loans	67	6	1	1	1	2	2
Discount loans	146	7	2.85	1	1	3	6
Other	260	(5)	(5)	(5)	(5)	(5)	(5)
Small Business Administration:							
Business and investment fund	279	6.2	11	2	18	6	41
Displaced business loans	31	5⅛	17¾	1	5	1	8
Economic opportunity loans	35	6⅝	7½	(3)	1	1	3
Small Business Investment Co. loans	56	7¼	10	(3)	1	1	5
Small business loans under sec. 7(a)	84	5½	7½	1	6	2	11
Development company loans	47	5½	18	1	6	1	12
Other	25	(5)	(5)	(5)	(5)	(5)	(5)
Disaster loan fund	91	3	11	3	19	4	26
Total, subsidized direct loans	10,032			301	1,624	468	2,242
GUARANTEED AND INSURED LOANS							
Agriculture:							
Farmers Home Administration:							
Rural housing insurance	987	6.3	33	10	118	27	270
Agricultural credit insurance	703	5	40	15	187	28	283
Farm ownership	256	5	40	5	68	10	103
Water and sewer	82	5	40	2	22	3	33
Other	365	(5)	(5)	(5)	(5)	(5)	(5)
Health, Education, and Welfare: Student loan insurance	840	0	[4] 13	63	179	80	268
Higher education facilities:							
Public institutions	80	3	30	3	32	4	40
Private institutions	40	3	25	1	14	2	18
Housing and Urban Development:							
Urban renewal	569	1.6	⅔	22	21	30	28
Low-rent public housing	1,517	0	40	114	1,039	144	1,128
Interim financing	3,529	0	⅔	176	168	224	210
College housing:							
Public institutions	165	3	32½	6	68	9	85
Private institutions	37	3	25	1	13	2	17
Mortgage insurance (subsidized):							
Below market rates	296	3	40	11	135	16	165
Other	2,932	2	35	122	1,493	173	1,749
Export-Import Bank: Portfolio sales	406	5.8	4.5	5	17	10	35
Total, major subsidized guaranteed and insured loans	12,101			551	3,484	749	4,296
Grand total, Federal credit programs	22,133			852	5,108	1,217	6,538

[1] If terms vary these are averages. Interest rates include insurance premiums where charged.
[2] Interest rate shown is for first 10 years only. Rate is 3% for last 30 years.
[3] Less than $500,000.
[4] Zero interest rate applies only while student is in school plus 9 months (average period 3 years); thereafter rate is 3% on direct loans, 7% for insured loans.
[5] Not available.

A Note on Progress Payments

The tables in this report do not include the large amount of financing that the Federal Government provides to its contractors in the form of interest-free payments during the production period (so-called "progress payments"). Technically, these payments are not in the form of loans and the term "subsidy" may not be an appropriate adjective for them. Nevertheless, these financing activities are large enough to be worthy of some attention.

As of June 30, 1970, approximately $9.8 billion of progress payments were outstanding on existing Department of Defense contracts.[10] Such part payments made by the Government, in the case of the large Government-oriented corporations, often represent a major portion of their total working capital. Military procurement regulations provide specific incentives against the use of private working capital. Thus, progress payments equal to 80 percent of the costs incurred in working on defense contracts are generally provided on a fairly current basis and without any interest or related service charge.

However, should these companies decide to rely on private sources for working capital, their interest payments may not be charged to the contract, and hence must come out of their profits. Presumably, this arrangement results in a smaller total cost for the Government, particularly on cost-reimbursable or other cost-based contracts, because of the lower interest rates paid by the Treasury on the funds that it borrows.

Hence, it is not clear that progress payments necessarily generate subsidies. Yet, to the extent that prime contractors share a disproportionately small portion of their progress payments with their subcontractors, some element of benefit undoubtedly arises.

In any event, this governmentally supplied, interest-free working capital increases the extent to which public rather than private capital finances the operations of Government contractors. [11]

Summary and Conclusion

As estimated in this study, the operation of Federal credit programs in the fiscal year 1970 will result in ultimate interest subsidies to the direct beneficiaries of these programs valued at $5.1 to 6.5 billion, depending on the discount rate used. Of these subsidies, about $1 billion were received in the first full year, with the remaining benefits to occur in future years, depending on the length of the loan or loan guarantee.

Housing programs produced the bulk of the subsidies—about $4 billion of the $6½ billion, assuming a 9½-percent interest rate. Other substantial amounts of subsidies occurred in foreign aid ($629 million), farm price supports ($413 million), student loan assistance ($363 million), and export promotion ($204 million).

Perhaps more meaningful than these absolute figures on the dollar values of subsidy received is the ratio of subsidy to the total amount of the loan extended or guaranteed. In several Federal credit programs, the subsidy is equal to more than one-half of the total amount of the loan.

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[10] U.S. Bureau of the Census, "Defense Indicators," Washington, Government Printing Office, Aug. 1971, p. 22.

[11] Cf. M. L. Weidenbaum, "The Modern Public Sector," New York, Basic Books, Inc., 1969, p. 50.

For example, in the case of the Rural Electrification Administration program of 2-percent loans, the subsidy could be provided alternatively in the form of an initial cash grant of 58 percent of the loan amount (assuming a 9½-percent discount rate), with the remaining 42 percent extended at a 9½-percent interest rate.[12]

Using a 7½-percent discount rate, the following major Federal programs are shown to result in interest subsidies equal to one-half or more of the principal of the loan (see table 9 for details):

Foreign economic aid (development assistance);
Rural electrification;
Housing for the elderly;
Low-rent public housing; and
Subsidized housing mortgage insurance.

If a 9½-percent discount rate is used, the list is lengthened to include the following:

Commodity Credit Corporation (Public Law 480);
Higher education facilities; and
College housing.

TABLE 9.—RATIO OF INTEREST SUBSIDY TO TOTAL AMOUNT OF LOANS, FISCAL YEAR 1970

Agency and program	Ratio of subsidy to loan amount	
	Discounted at 7½ percent	Discounted at 9½ percent
Direct loans (outlays):		
Funds appropriated to the President:		
Security assistance	7	15
Development assistance	57	67
Agriculture:		
CCC: Price support	4	5
CCC: Public Law 480	46	55
Farmers Home Administration	8	17
Rural Electrification Administration	50	58
Health, Education, and Welfare:		
Capital for student loans	35	44
Higher education facilities	45	56
Housing and Urban Development:		
Urban renewal	3	4
Low-rent public housing	5	6
College housing	46	55
FHA fund	21	34
Housing for elderly	50	59
VA: Insurance policy loans	15	23
Export-Import Bank	4	11
Small Business Administration:		
Business and investment fund	6	15
Disaster loan fund	21	29
Average, major subsidized direct loans	18	23
Guaranteed and insured loans (commitments):		
Agriculture:		
Rural housing insurance	12	27
Agricultural credit insurance	27	40
Health, Education, and Welfare:		
Student loan insurance	21	32
Higher education facilities	38	48
Housing and Urban Development:		
Urban renewal	4	5
Low-rent public housing	68	74
Interim financing	5	6
College housing	40	50
Mortgage insurance (subsidized)	50	59
Export-Import Bank: portfolio sales	4	9
Average, major subsidized, guaranteed and insured loans	29	36

Source: Based on table 8.

[12] If a 7½-percent discount rate is assumed, the present value of the interest subsidy is equivalent to a 50-percent cash grant, with the remaining 50 percent extended as a loan at 7½ percent. It should be noted that when the 2-percent rate for REA loans was set in 1944 it was in line with then current Treasury borrowing costs.

Under present conditions, interest rate subsidies tend to be less visible than other forms of Federal benefits, such as direct appropriations to designated beneficiaries.

For example, in the subsidized housing mortgage insurance program loans of $2.9 billion in the fiscal year 1970 involved subsidies of $1.7 billion, but only part of the first full year cost of $173 million was actually reflected in budget outlays for interest subsidies in that year. (See table 8.)

If the full capitalized value of the subsidy ($1.7 billion) were provided alternatively in the form of an initial cash grant, larger Federal budget outlays in fiscal 1970 would have been required in order to achieve the same program level and the same impact on resource allocation and aggregate demand.

As pointed out by various authorities,[13] these interest rate subsidies may also encourage unnecessary substitution of public credit for private credit available at slightly higher interest rates.

To deal with this problem, it has been recommended that all proposals to create new Federal credit programs or to broaden existing ones should be accompanied by an appraisal of the relationship between the interest rate charged in the program, the rate which would be charged by competitive and efficient private lenders, and the rate necessary to cover the Government's costs. [14]

In his message of January 29, 1971, transmitting the Federal budget for the fiscal year 1972, President Richard Nixon pointed out that numerous Federal credit programs—guaranteed and insured loans, or loans by federally sponsored enterprises—escape regular review by either the executive or the legislative branch. He proposed to remedy this situation by developing legislation to enable these credit programs to be reviewed and coordinated along with other Federal programs.[15] This would appear to be a very useful step.

The positive effects of Federal credit programs also need to be kept in mind. The credit mechanism has become an important method of using governmental power to achieve various public objectives such as better housing, more educational facilities, and increased exports. As in other governmental programs, the relative costs and benefits of these programs must be compared both with each other and with other public and private uses of economic resources. Hopefully, this study has made available some information which will be useful for such comparison.

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[13] E.g., "Report of the Committee on Federal Credit Programs" (the Dillon Committee), Washington, Government Printing Office, 1963.

[14] Ibid.

[15] For a detailed analysis of the problem of reviewing Federal credit programs, see M. L. Weidenbaum, "The Growing Federal Credit Programs: A National Policy Issue," "Financial Analysts Journal," January–February 1971, pp. 17–21.

THE GRANTS ECONOMY AS REGULATOR OF THE EXCHANGE ECONOMY

By Martin Pfaff *and* Anita B. Pfaff *

I. Introduction

The founder of the New Economics, John Maynard Keynes, was not only an astute observer of the economic scene but also a good judge of human nature. He argued that—

> practical men, who believe themselves to be quite exempt from any intellectual influences are usually the slaves of some defunct economist.[1]

And he augured not too well for the short-run chances of a new conception of economic reality even though he recognized that ultimately new ideas are likely to prevail:

> In the field of economic and political philosophy there are not many influenced by new theories after they are twenty-five or thirty years of age, so that the ideas which civil servants and politicians and even agitators apply to current events are not likely to be the newest. But soon or late, it is ideas, not vested interests, which are dangerous for good or evil.[2]

It may be no less startling to propose that our existing images and views on the nature of the economic system we live in are outdated at best and quite misleading at worst. These images reflect what we have learned about our society as being a capitalist market society: economic relationships between households, firms, non-profit institutions, and the government supposedly are based largely on exchange, whereby party A gives something to party B only in exchange for a corresponding return flow of equal value. An examination of the real world will reveal, however, a vast network of nonmarket flows of exchangeables which has become so significant that it tends by design or accident to "distort" the prevailing exchange flows. This system of unilateral or one way flows is termed the "grants economy."

No doubt, a significant part of our economic life involves self interest which leads to bilateral or two way flows involving a *quid-pro-quo* of the type that we are familiar with from most business transactions. However, when we examine the nature of economic relationships more closely we find many non-market transactions—subsidies, transfer payments, contributions and so on—both in the private and the public sector.

The distinction between grant and exchange is not always unambiguous. Let us take a hypothetical example involving two individuals. When Lyndon passes on a good or service, an "exchangeable," to Richard, without receiving any economic return flow of an exchangeable, he makes a *pure transfer or grant* to Richard. This is not to say that such a grant may not lead to a "return flow" of non-exchangeables

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[1] John Maynard Keynes, "General Theory of Employment, Interest and Money," New York: Harcourt, Brace & World, Inc., 1962, p. 383.

[2] Ibid, pp. 383-384.

from Richard to Lyndon, such as recognition, status, or prestige. But these are not recognized as economic exchangeables. They do not add to the economic *net worth* of Lyndon—the grantor—nor do they diminish the net worth of Richard—the grantee.

If, however, Lyndon receives a return flow from Richard, whose value expressed in market terms is less than the value of the good or service he transferred, Richard receives a *grant-equivalent*. The latter is the difference between what Lyndon could have collected had he sold his good or service at its prevailing price in the market, and what he actually gets by allowing Richard to have these goods and services at terms of trade below the prevailing market prices. Such a transaction is of a "mixed" nature, containing both an *exchange equivalent*—the value of the exchangeable flowing from Richard to Lyndon—and a grant-equivalent. Both sum to the market value of the exchangeable which Lyndon passed on to Richard in the first place.

If we are interested not in the degree of purity of the relationship but in the nature of the transaction itself, we may distinguish between explicit and implicit grants: When Lyndon gives Richard a good or service, he makes an *explicit* private grant; when he nominally sells this good or service below its prevailing market price, he makes an *implicit* private grant. It is implicit only because it is tied in with another economic transaction, namely the "sale" of the exchangeable by Lyndon to Richard.

When the share of transactions financed by pure grants and grant-equivalents is relatively small, and the share of the regular market transactions is very large, the price system is not greatly distorted. It can therefore be used as an approximation of the true value, or as a norm, for the computation of grant-equivalents. Often, however, grants represent a major factor in the financing of a good or service. Moreover, the free operation of the market is often held to result in a socially undesirable price structure, since too little or too much of a good or service would be produced in a pure exchange system. Supply prices accordingly are altered by the free or subsidised supply of a good by the government or by a private institution. If this alteration is very large we may not feel justified in using market prices as a norm; we have to look to other norms for the evaluation of a transaction.

Such situations arise in the most extreme form where markets do not exist at all and where *social* efficiency or equity norms have to be utilized for purposes of evaluating grant flows. An example is found in the case of the "hidden subsidies" which are conveyed by the exemptions, deductions, and special provisions of the income tax laws; deductions that reduce the tax base, tax credits, and different tax schedules provide differential economic benefits to different groups of taxpayers. These "hidden subsidies"—or implicit public grants—are just as "real" as if the government had collected taxes in line with the nominal progressivity of the tax rate schedule, and then returned a part of the tax proceeds to some but not to others. But a normative element enters the computations as soon as we have to decide, for example, whether a certain deduction represents a true cost of earning income (such as a part of medical expenses) or a special privilege of which only some can avail themselves. Like *explicit public grants in cash* [3]—money transfers, such as some social welfare payments or

[3] A grant is explicit when it is not tied to or dependent on another economic transaction, such as exchange or the payment of a tax.

government subsidies to industries—or *explicit public grants in kind*—provision of free education, police and fire protection, health services, public roads, etc.—these implicit public grants constitute a real cost to the public household. In private and public accounts explicit grants are usually included while implicit grants are often neglected

Ultimately, whenever government policy intervenes in the market system in such a way that the terms of trade of contracting parties—or the market prices of factors of production and of goods and services—are affected, an explicit or implicit grants structure results. This is true for fiscal and monetary policy, for foreign exchange policy, and also for the host of administrative actions affecting economic life.

While some of these measures do not provide a real cost to the public household they involve a *de facto* redistribution between groups of citizens and a provision of grants to some.

Diverse characteristics and purposes of implicit and explicit grants are often reflected in different terminology. For example, the distinction between subsidies and income transfer programs is based on the primary effect of these grants. While subsidies primarily modify the market behavior of consumers and producers, income transfer programs primarily affect the income distribution. However, subsidies also alter the distribution of income since employment level and wage structure in subsidised industries are partly determined by the subsidy. Similarly, the income augmentation of some groups influences their market behavior and thus the market via the transfer-induced demand creation. A taxonomy may be extended to take account of a wide variety of criteria.

If all these myriads of inter-relationships and transfer flows are brought into the limelight, we find that they indeed modify, if not alter completely, the image that we have of the kind of economy we live in. Far from being dominated exclusively by exchange relationships, the economy is influenced by a vast network of transfers, which has many and often astounding effects. What makes the grants economy so crucial an element in economic and social policy is its highly unequal or regressive distributive result: Middle or high income classes often benefit more from specific transfers, particularly from implicit public grants, than the poor and indigent. The public grants economy often was fashioned by a desire to make available those goods and services, which are not adequately supplied through the exchange economy, or which are provided only to some groups. Yet, often, in effect, it tends to aggrevate the inequity of market operations.

The grants economy complements the exchange economy. Together they constitute the type of economic system in which we live.

We thus use the term "grant" or "transfer" synonymously. These terms, however, mean something slightly different from what the popular meaning would suggest. In the spirit of the definitions given thus far, some foundation grants which involve a *quid-pro-quo* would not really be true grants or transfers. Similarly, other activities of individuals that are not labeled as subsidies, grants or transfers may in fact be transfers or have a grant-element. For example, let us imagine that a lady gives a "present" to her nephew, in exchange for which she expects him to pick up groceries from the store regularly. If the effort that the nephew extends in fetching groceries were evaluated in terms of an appropriate market price, it may in fact turn out

that he is making a net grant to her, rather than *vice-versa*. Similarly, there are many transactions which are outside the arena of explicit grants which involve a grant-element. We thus employ the term grant or transfer in a *generic sense*. This procedure has its precedent in the practice of economists, who frequently redefined terms to describe a more technical phenomenon. The economic concept of "labor", for example, describes the wide variety of phenomena from the public relations activities of the president of a university, to the physical exertion of the worker digging a ditch outside his building. It also refers to the widely differing activities of politicians, administrators, artists, singers, and so on. We have apparently little difficulty in associating the term "labor" with these widely different activities, simply because we have been accustomed to it. Similarly, profit, gain, loss, rent, income, cost, and many other terms have different meaning for the economist than the layman.

The fundamental distinction between grants and exchange processes and the related theoretical superstructure—grants economics—provide a meaningful and systematic approach to the study of mixed exchange-and-grant-systems. It lends itself to the study of many phenomena which are not adequately explained by exchange-economics: The distribution of income, wealth, and power in society; the phenomena of discrimination and exploitation (which are based on the concept of involuntary or forced transfers); the presence of pockets of urban and rural poverty amidst the affluence of the more dynamic sectors of the economy; and the redistributions taking place among individuals, groups, parts of cities, regions, and countries.[4]

II. Grants and Economic Policy Norms

1. Market Efficiency Versus General Efficiency

Enlightened public opinion in general and government policy in particular has come a long way from those days when it was believed that the unfettered operation of the market mechanism would provide for a maximum of social welfare. Even economic formalists who have indulged in the perennial ritual of worshipping the sanctity of market operations have grudgingly accepted the necessity for interventionism on the part of public authorities in those cases where the logic of the market operation could not be relied upon to achieve desired ends. Welfare economics as a normative branch of economics recognizes that such market failures call for intervention.

First, due to the presence of *monopoly* elements the price structure gets distorted in such a way that consumer welfare is not maximized.

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[4] (1) M. Pfaff and A. B. Pfaff, "The Relationship between the Transfer and Exchange Sectors of the Economy," *Proceedings of the Business and Economic Statistics Section of the American Statistical Association*, August 1969.
(2) M. Pfaff and A. B. Pfaff, "Grants Economics: An Evaluation of Government Policies," *Public Finance*, 1971.
(3) M. Pfaff and A. B. Pfaff, With an Introduction by Kenneth E. Boulding, *The Grants Economy*, Belmont, California: Wadsworth, 1972.
(4) K. E. Boulding and M. Pfaff, (eds.) *Redistribution to the Rich and the Poor:* The Role of the Grants Economy in Income Distribution, Belmont, California: Wadsworth, 1972.
(5) K. E. Boulding, M. Pfaff and A. B. Pfaff (eds.), *Transfers in an Urbanized Economy*, Theories and Effects of the Grants Economy, Belmont, California: Wadsworth, 1972.
(6) K. E. Boulding, J. Horvath and M. Pfaff (eds.), *The Grants Economy in International Perspective*, Belmont, California: Wadsworth, 1972.
(7) K. E. Boulding, *The Economics of Love and Fear: A Preface to Grants Economics*, Belmont, California: Wadsworth, 1972.

Second, due to technological *indivisibilities* (or "lumpiness") of the productive process on the one hand and of consumption processes on the other, the market mechanism cannot operate at its most efficient level. Third, for *decreasing cost industries* (or situations of increasing returns, as they are termed by economists) the market mechanism fails to approach the exact optimum point. Fourth, in the case of interdependencies on the production or consumption side—so-called *externalities*, private decisions in the market system—fail to achieve socially optimal allocation. An example of such an externality is the influence that, say, one firm's production, through the generation of waste or pollution, has on the production activities of other firms or on the welfare of consumers.

An example of an externality in consumption may be found in the growing of flowers in your garden; your neighbor also derives a pleasure or benefit from the fact that your garden is well kept. But you cannot generally charge your neighbors or passers-by for the pleasure of contemplating the products of your own gardening efforts. [5]

Welfare economics is concerned primarily with *economic welfare* rather than with social welfare at large. It operates on the underlying norm of *market efficiency, i.e., efficiency in the narrow sense.* Its marginal rules ensure optimal allocation in the market, or in marginal interferences warranted by market failures. No doubt, the Keynesian Revolution widened the economic vista to include the stabilization norm as a legitimate concern of economic inquiry and economic policy. However, economists have generally been more than reluctant to make pronouncements on any policy that would have as its main aim the redistribution of income. This was held to be the legitimate field of the politician, or of other branches of the social sciences, and not a proper subject for economic analysis. No doubt, new welfare economists have attempted to bring income distribution within the mainstream of economic reasoning. However, their recommendations rested rather uneasily on a norm of efficiency based narrowly on the operation of the market or exchange economy.

The sub-discipline of economics first and foremost concerned with the prevalance of interdependencies both on the production and consumption sides, and with the need for control of those processes which are not amenable to regulation by the price mechanism, is found in the "Welfare Eeonomics of Interdependence," we have termed "Grants Economics." The assumption of interdependence of production, consumption, and utilities leads logically to the extension of the traditional goal function (market efficiency plus stability) to include *systematic* goals, such as equity. Thus it recognizes that the aim of public policy is not only the attainment of economic welfare but *social welfare at large*, and that a variety of economic instruments available to the public decision maker can be and are used to that end. Their aims encompass not only market efficiency or economic stability, but also the promotion of growth, equity, system maintenance, and integration as well as other systemic norms, which may be termed *general efficiency norms.*

Of course, it is true that the theory and policy of public finance has always recognized the need to achieve income redistribution over and beyond the pattern resulting from market operations. Musgrave, for

[5] Lack of information on the part of producers or consumers may be added as another situation where markets do not function efficiently.

example, postulates the need for a distribution branch of public policy (together with a stabilization and allocation branch) whose main objective is to achieve income redistribution. [6] These theoretical developments were paralleled by a keen public policy concern with income maintenance and income redistribution. This was particularly true since the 1930's.

The package of social security legislation that was developed in the past forty years, however, seems to stem from a philosophy of providing income in situations of temporary inability rather than from a general policy of income maintenance outside the logic of whatever the market mechanism may allocate to a particular individual. We may thus recognize in income maintenance a system of compensation for temporary or intermediate-run decreases in income. Examples would be found in unemployment support, which clearly represents a short-run measure; social security might be considered an intermediate-run measure, in the sense that it does not engulf the entire life span of the individual. On the other hand, we notice an increasing shift toward a philosophy of "income augmentation" which pertains to the long-run betterment of the population's social welfare, irrespective of the particular change in economic attainment that might call for some measures of income redistribution. This extreme kind of income augmentation is found in the variety of proposals for a guaranteed income or a negative income tax, which have gained increased currency among serious economists and public policy makers.

2. The Normative Structure of Market Control and Income Maintenance Programs

The transfer of income from one income class to another, or from one social group to another, stem not only from considerations of equity or justice, but also from considerations of system maintenance, that is, the desire to keep an alienated sub-group of the population within the pattern of relationships. It also derives from the norm of integration, that is, the desire to decrease the percentage of people who are alienated from society.

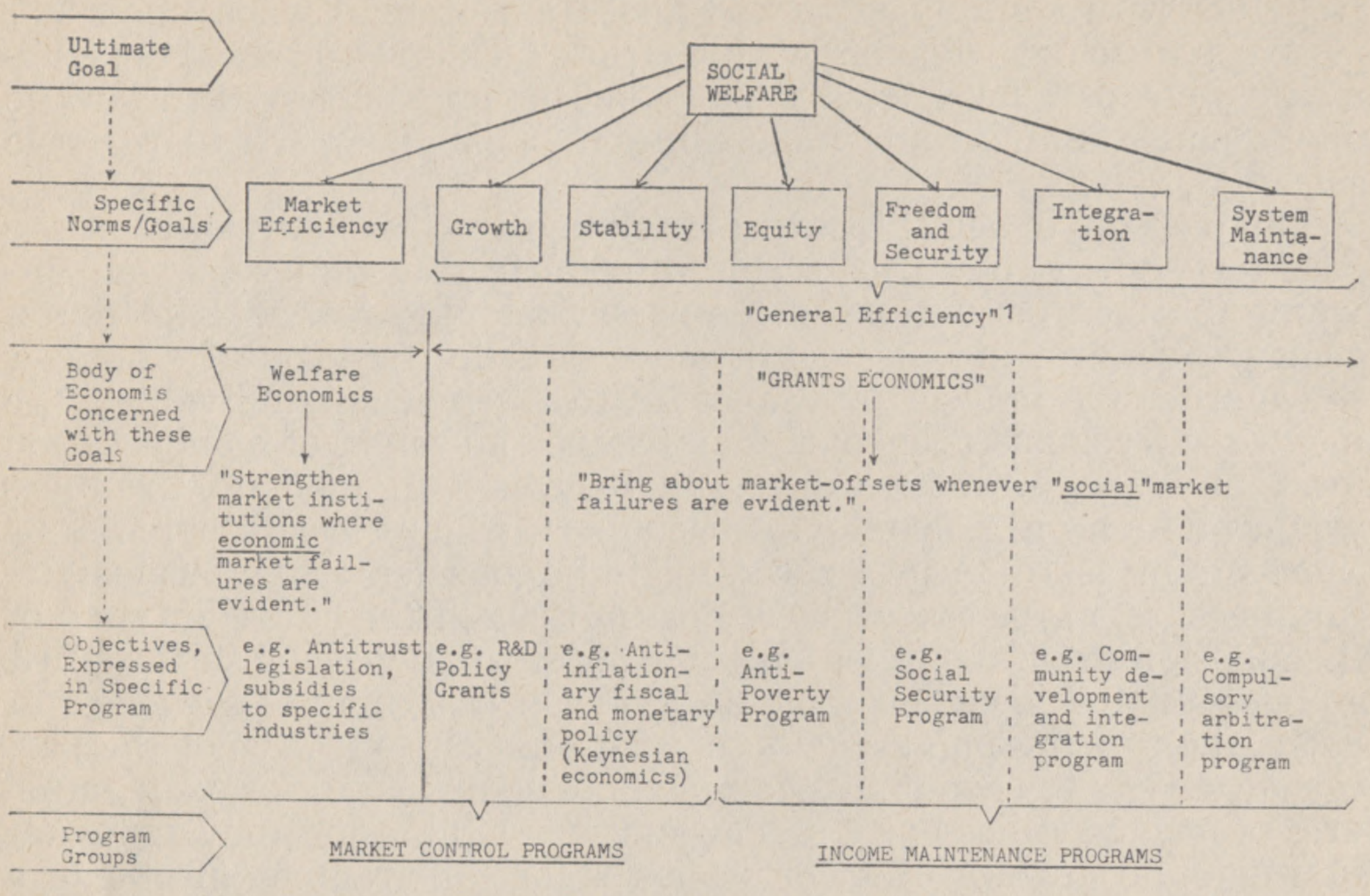
If we consider a goal as "an end toward which effort or ambition is directed," [7] we may consider an objective as the instrumental or operational expression of that goal. Income maintenance may therefore be seen as an objective designed to take care of a variety of other broader social norms or goals.

Turning to table 2.1, we may note one plausible structure of normative relationships underlying public policy making; efficiency, growth, stability, equity, freedom, security, integration, and system maintenance are some of the most dominant norms that come to mind. Generally speaking, efficiency is associated with the operation of the market mechanism; growth generally emanates from the most efficient allocation of resources. In this sense, one might say that the market or exchange economy is concerned with efficiency, while the grants economy relates also to growth, stability, equity, freedom, security, integration and system maintenance, with growth being closest to exchange.

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[6] R. A. Musgrave, "The Theory of Public Finance," New York: McGraw-Hill, 1959.
[7] "Webster's 3rd New International Dictionary of the English Language," edited by G. & C. Merriam Company, Springfield, Mass., 1967, p. 972.

TABLE 2.1.—*The relationship between norms/goals, objectives, and programs*



[1] "General Efficiency" denotes the extension of the economic logic of allocation to broader purposes of society than narrow or market efficiency.

The norms of efficiency and stability are familiar in public policy. The former relates to the allocative role of the public household while the latter emanates from Keynesian economics.

Anti-poverty programs are a specific expression of social equity, system maintenance, and integration norms. Freedom and security, in turn, may be advanced as the norms underlying the social security legislation of the thirties and the present operation of the social security program. The desire to promote more harmonious relationships between various groups of the community is expressed through community development and integration programs. Finally, compulsory arbitration programs, agricultural price support programs, or programs designed to reduce the level of alienation among the urban poor, might be cited as measures of system maintenance.

The label "market-control programs" may be associated with antitrust legislation, subsidies conveyed to specific industries, grant-elements of R&D contracts, and anti-inflationary fiscal or monetary programs; their main aim is to correct *economic* market failures, rather than provide diversely for the income augmentation of specific groups in society. The effect of a program is, however, rarely confined to its primary objective. *Every market-control program has significant effects on income distribution, just as income maintenance programs associated with equity, freedom and security, integration, and system maintenance norms, have significant allocative, growth, and aggregative effects.* It is therefore very hard to separate these programs, pointing to some as subsidy programs—i.e. programs designed to modify market behavior of individuals and firms—or others as income transfer programs—i.e. programs designed primarily to augment the income of specific groups. Nonetheless, in table 2.1 we have grouped the first set of programs together and distinguished them from the second set. The former are generally employed whenever input, output, or price relations in

factor or product markets are to be influenced by the device of a "subsidy". As most of the subsequent papers included in the Compendium refer more immediately to the market control programs, we shall devote greater attention to the second group of income maintenance programs.

The label "income maintenance programs" has generally been associated with anti-poverty and social security programs. Accordingly, we may conclude that they are primarily directed towards the goals of equity, freedom, and security, while only incidental benefits for integration or system maintenance, may have been derived therefrom. This view is reflected, for example, in the following statement on the objectives of social security:

> The social security programs aim at two related, conceptually distinct objectives. One is to guarantee minimum income support for the aged, the disabled, and dependent survivors. In recent years, the success of the program in obtaining this welfare goal has been judged increasingly by the degree to which it keeps beneficiaries out of poverty. A second objective is to help moderate the decline in living standards when the earnings of the family head cease because of retirement, disability, or death. This earnings replacement objective is independent of the goal of preventing poverty; benefits go to families at all income levels.[8]

However, this view focuses too much on the individual-qua-individual from whose point of view freedom and security are very important. When a broader view is taken of the role of individuals as members of the total system, we must recognize that social security programs have a system maintenance and integration effect. They make it possible for the system to go on without being saddled by large numbers of destitute families. Thus they act as a "social stabilizer," avoiding violent disruption of production and consumption usually associated with a revolution. This view is also implicit in Boulding's discussion of the role of income maintenance policy:

> All modern nations accept the principle that there is some minimal level of real income below which its individuals or households cannot be allowed to fall. This leads, at quite an early date, to the development of "poor laws" or public assistance programs. These provide a certain "floor" of subsistence which is in a sense a "right" of every individual. . . . In no country does there seem to have been strong pressure from the electorate for the specific plans that were put into operation. Political pressure and dissatisfaction of course there was, but it took the form of broad movements rather than specific pressures—the Social Democratic Movement in Germany, the Socialist Movement in England, the various radical movements in the United States. . . . Perhaps it is not unfair to interpret the social security program that developed as an essentially "conservative" program to forestall pressures for something more radical. From this point of view the programs have been highly successful; they have contributed a great deal towards "the deproletarianization"—integration of the mass of the people into the general economic fabric—and have greatly increased the degree of general acceptance of existing institutions. If we no longer live in a revolutionary era, social security must be given a good deal of the credit (or blame, if one is concerned about the soporific effects of security).[9]

The integration and system maintenance aspects of income maintenance programs becomes evident when the basic rationale for the provision of social welfare is considered. Because individual preferences seem to be inadequate to provide, through private savings, for contingencies of retirement, unemployment, or accidents, social action is called for. Social security contributions in the form of a tax rather than in the form of voluntary contributions are necessary. This inter-

[8] Joseph A. Pechman, Henry J. Aaron, Michael K. Taussig, "Social Security: Perspectives for Reform," Washington, D.C., The Brookings Institution, 1968, p. 55.

[9] Kenneth E. Boulding, *Principles of Economic Policy*, Englewood Cliffs, New Jersey: Prentice-Hall Inc. 1958, pp. 234–235.

ference with individual preferences would generally be considered a decrease in individual welfare by the pure welfare economists. However, when we recognize the limited planning horizon of the individual, as well as the interdependence between the well-being of a particular individual and other individuals, a case for social intervention is present. In more general terms, whenever externalities in production and consumption are present to a marked degree, benefits have to be supplied through the grants economy rather than through the exchange economy.[10]

These interdependencies are quite evident in the case of the family itself, as well as the larger group. The principle of individual decision making subsumed under the assumption of independence of individual preferences becomes somewhat tenuous when one individual's mistakes have an effect on the well-being of his family, his community, or the nation at large. Furthermore, under the assumption of interdependence of utility functions, there is no theoretical rationale under which even an individual should necessarily be made to suffer the consequences of his own actions. Accordingly, integration and system maintenance norms underlie a variety of income maintenance programs.

3. Trade-Offs Among Market Efficiency and General Efficiency

Income maintenance programs are designed to attain several ends at once. Frequently, however, they can only be successful in one. A second goal can only be satisfied to the extent that one is willing to sacrifice the first one. Thus, in practice a weighting or trade-off between goals is required. Accordingly, any particular program may not rate very highly in the achievement of any single goal.

The Social Security and Public Assistance programs may be cited as examples of income maintenance programs which represent a compromise between the goals of general efficiency, particularly equity, and economic efficiency.

Social Security (Old Age, Survivors, Disability, and Health Insurance—OASDHI) is nominally an insurance program. Insurance transactions are a less obvious example of exchange phenomena: The insured incurs a certain cost (premium) which depends on the size of the expected return flow and the risk that the insured constitutes to the insurance company. Two contractually agreed upon transactions result; the economic cost to both parties, however, may not be equal in a specific case. Thus the insured will receive a grant equivalent if the benefits to him exceed his costs, or he may pay a grant equivalent, if the converse is true.

If an income maintenance program were to be designed as *insurance* against loss of income due to inability to work it would show the same characteristics. The efficiency of such a program, measured, for example, in terms of cost and benefit to the public, would be very high, since every insured person contributes according to (1) the risk that he constitutes and (2) his expected stream of benefits. Under the present social security programs receipt of benefits is contingent on prior "premium" payment in the form of social security taxes—and thus prior participation in the labor force. However, contributions are not determined by the risk factor but by income levels. A person in poor health does not contribute more than a healthy one, because he

[10] See Martin Pfaff and Anita B. Pfaff, "Grants Economics: An Evaluation of Government Policies," paper presented at the Congress of the International Institute of Public Finance, Leningrad, USSR, September 16, 1970; in "Public Finance," 1971, pp. 163–191.

is more likely to draw benefits. In other words, an ability to pay or equity criterion replaces the risk consideration. The link between contribution and benefits is therefore rather tenuous. In this sense Social Security does not constitute an exchange phenomenon; it has to be considered a component of the grants economy.[11]

We must clearly distinguish between the exchange analogy involved in the insurance approach and the *demogrant* approach to income maintenance, which bases the right to public support not on participatory behavior in economic life, but on the membership in society, usually reflected in the political criterion of citizenship or residency in a country or state. In its purest form a demogrant program would guarantee a minimum income to everyone, irrespective of his income level and earning power. Alternatively it may be organized in the form of a negative income tax program. A less comprehensive form of the demogrant, of a supplementary nature, provides public support only to the "needy', i.e. those whose other income falls below a certain minimum. Need is established on the basis of means tests. The economic efficiency of such a program is bound to exceed that of a pure demogrant. Actual programs of this type, such as Public Assistance, do not fare too well in terms of other societal goals, such as equity, security, integration, and freedom. Due to a multitude of additional requirements not every needy person is eligible for public assistance: qualification rules may be so stringent so as to make it impossible for the recipients to retain sources of security, such as insurance and certain property; the very severe means tests and enforcement attempts set the recipient apart socially, humiliate him, and result in the social disintegration of some groups of society; residency rules impair the recipient's freedom of movement to places of prospective employment.

On grounds of equity, Social Security achieves even less than Public Assistance, since it does not even claim to provide for the needy.

While various goals are pursued by income maintenance programs, we can see that different approaches to the task do not perform equally well—or equally poorly—on all counts. A clear trade-off between goals generally has to be made: higher economic efficiency, by necessity, entails a less equitable solution; alternatively, an equitable solution tends to be not only very costly, but also economically less efficient.

There is a continuum of possible programs, with the economically efficient insurance at one end and the pure demogrant at the other. While Social Security presents a compromise closer to the high efficiency-low equity solution, the converse may be said for Public Assistance. With good reason these programs may be found utterly dissatisfactory on many grounds and quite satisfactory on others. Each of them represents a compromise between goals—and often between interest groups that articulate diverse goals. It is not only a historic coincidence that various programs with different positions on this continuum were designed. Varying needs, group pressures, and compromises resulted in the present body of social welfare legislation, which may temporarily be "optimal" in terms of goal trade-offs. Changing goals, priorities, and social constellations are the basis for a revision of the old system and addition of new programs.

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11 This view of Social Security as non-exchange is also held by Pechman, Aaron, and Taussig, *loc. cit.*, p. 56.

III. The Structure and Function of the Grants and Exchange Economy

Social systems display many structural patterns, making manifest their hierarchies of need. Examine the nearly universal pattern of division of labor: what is not reserved to the individual remains the collective concern. "Collective" to the economist denotes the "public interest," which he describes as the sum of those goals affecting continued introduction of resources and technological advance of the social system. Resources divide naturally into two categories, the human and the material; development and maintenance of the former requires services such as schools and hospitals, while the latter depends upon trade-offs among policies of conservation and extraction. Technological advance is fostered through scientific research and development, primarily with a view towards providing for future generations. This long range planning horizon, entailed in the public interest towards resources and technology, can be contrasted with the comparatively short range horizons of individuals.

Highly developed communities can generate sizeable economic surpluses, useable either for short-term consumption or for long-term investment. The emerging set of social goals may transcend the direct concerns of a large number of people. Making these goals and decisions viable requires a transition from an atomistic societal self-image to what might be termed a "systemic" one. This transition follows the community's attainment of a sense of identity and purpose beyond that resulting from the simple sum of its separate members. Verbalization of this systemic vision of social goals and patterns probably would first come from the control or power elites of the society. Religious, technological, or other scientific norms may be enlisted to legitimate it.[12]

"Private interest," on the other hand, is the concern of the individual, or of small subgroups of the society. Their subgoals differ from the public interest by virtue of their shorter planning horizons and their fewer members. The individual subgoal may be understood, in the philosophical sense, as the "pursuit of happiness;" in the wider sense of the word, it would be the maximization of utility. Differences in income and valuations of present consumption, savings, and investment, as well as future consumption (and giving), will lead to varying allocations of individuals' resources.[13]

Pursuing this overall functional dichotomy in terms of its structural manifestations, one would consider business activity generally as part of the private interest sphere; yet the firm clearly follows goals other than those of only the owners and employees. This inclusion of the business enterprise in the private sector originated in the historical development of Western market economies. Production, once a part of every family's life, evolved in the cooperation of many persons within a single production process. Specialization and division of labor, fostering cooperation, lifted production out of the family bounds.[14]

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[12] See Kenneth E. Boulding, "The Legitimation of the Market," *The Nebraska Journal of Economics and Business*, Spring 1968, Vol. 7, pp. 3–14, for a discussion of the dynamics of legitimacy of market or exchange processes.

[13] The concept of hierarchy of utility levels for the individual differs somewhat from the narrower concept of utility employed, say, in welfare economics: The latter focuses on consumption goods and services only.

[14] This shift of production from within to outside is a familiar phenomenon accompanying economic development in a market system. One of its consequences is the widening of the gap between the goals of the individual and those of the enterprise. This has been related to the degree of satisfaction, on the one hand, and the sense of alienation, on the other.

Individuals apparently belong to the private sector. And so do several institutions and agencies they staff, though the focus and emphasis may be on the public weal. The voluntary fire department and the private hospital provide services which otherwise the government would have to make available. Moreover, what has generally been considered part of the private interest sector has become increasingly proper to government. Consider the employment and business activities of governmental enterprises such as the Post Office. Fundations and other non-profit institutions stand somewhere in the twilight zone between these two types of private interest and public interest situations.

Related to this functional dichotomization, but not identical with it, we observe a structural breakdown into private and public sectors. Within these two classes we distinguish five subsectors, differing not only with regard to their institutional characteristics, but also in terms of the systemic role they play in society as a whole and in economic activity in particular. Tying these sectors together within the overall system is the necessity of interdependence. Interdependence can arise from a wide variety of motivations affecting members of these broad sectors, such as benevolence, self-interest (or a generally neutral attitude towards others), and malevolence.

Traditional economic theory has assumed a framework of self-interest which supplied means and devices for organizing individuals within an exchange system. Self-interest and gain were the primary motive forces operating within the exchange arena of public and private enterprise. Yet interdependence cannot lead to exchange transactions alone. It requires a companion organizing principle, namely, the unilateral transfer or the grant. Grants are relied upon when the motivation of individual participants in an exchange transaction precludes, or at least frustrates, the achievement of certain systemic goals. Such is the case in the public sector where social insurance, public aid, health and education programs, veterans' services, housing, and social welfare activities in the United States are increasingly being funded through the grants rather than the exchange economy. Even in the private sector, unilateral transfers serve to achieve and enhance interdependence.

Table 3.1 depicts the dichotomization of the economy in terms of its structure and function and the economic actions of structural components. The dichotomization by function into private and public interest leads to a structural breakdown into the private and public sectors. They consist of the above mentioned subsectors. Note that the private sector takes care of a fraction of public interests through the activities of foundations and other non-profit institutions in the fields of health, education, varieties of welfare aid, and so forth. The vertical dimension distinguishes between primary and secondary activity, associated with each of the structural forms, as well as a brief identification of underlying motives of actors associated with each subsector, partners or interacting subsectors within the overall economy, and finally, the output of commodities (through exchange or grants) resulting from interaction.

TABLE 3.1.—THE FUNCTION AND STRUCTURE OF THE ECONOMY

[Functional and institutional breakdown]

Functional breakdown	Private interest		Public interest		
	Private sector				
Structural breakdown	Individual	Corporate	Foundation	Nonprofit institution	Public sector
	(1)	(2)	(3)	(4)	(5)
	Exchange	Exchange	Grant	Grant	Grant
1. Primary activity (a):					
Motives (b)	Utility	Profit, sales volume, etc	(1 2)	(1 2)	(1 2).
Partner (c)	Individuals, corporation (public, foundation, nonprofit institutions).	Individual, corporation (foundation institution, public).	From: Corporations, public sector, individuals, foundations. To: Individuals, foundations, institutions.	From: Corporations, individual, foundations, public sectors. To: Individuals, (services) —primary recipient.	From: Individuals, corporations, foundations, institutions, public. To: Individuals, foundations, corporations, institutions, public.
Commodity of exchange or grant (d).	(1) Services for cash (work), (2) cash for goods and services (consumption).	(1) Goods and services for cash, (2) cash for goods and services.	Receipt: Cash; Granting: Cash	Receipt: Cash; goods, services. Granting: Service and goods.	Receipt: Services, cash. Granting: Cash, services.
	Grant	Grant	Exchange	Exchange	Exchange
2. Secondary activity:					
Motive (f)	(1) Growth, (2) stability, (3) equity, (4) integration, (5) security.	(1) Growth, (2) stability, (3) equity, (4) integration, (5) security.	(1) Administrative expenditure, (2) nonprofit sales.	(1) Partial remuneration of services (2) administrative.	(1) Purchase from private industry, (2) government enterprises civic service.
Partner (g)	From: Public, institutions, foundations, corporation, individual. To: Individual, foundation, institution, public.	From: Public. To: Foundations, institutions, public, individual.	Individual, corporation, foundation, institution, public.	Individuals, corporations, public, foundations.	Individuals, corporations, foundations, institutions.
Commodity (h)	Receipt: Cash, goods and services. Granting: Cash, service, goods.	Receipt: Savings (implicit public grants). Granting: Cash, goods.	(1) Cash for goods and services, (2) Goods and services for cash.	(1) Services and goods for cash, (2) Cash for goods and services.	(1) Cash for goods and services. (2) Goods and services for cash.

[1] Remedial in as far as market fails to provide (economic, growth, stability).

[2] Corrective in as far as market allocation is inequitable (equity, integration, security).

This rather general classification recognizes that the primary activity of the individual and corporate sectors involves exchange, while the primary activity of the foundation and of the other non-profit sectors, as well as the public sector, involves grants. It follows that the secondary activity of the individual and the corporate sector is based on grants while the secondary activity of the foundation, the other non-profit institution sector, and the public sector relies on exchange. This taxonomy admits that most economic processes involve both exchange and grants components. Row (b) of Table 3.1 identifies the motives underlying the primary activity of these sectors. The corporate goals are profit, sales volume, and a share of the market. The individual is primarily motivated to attain "utility." Institutions concerned with the public interest, however, generally derive their motivation from needs to remedy market failures for the efficient allocation of resources. This is particularly true for economic growth and stability; it also pertains to correcting market allocation in the face of inadequate achievements in equity, integration, and security.

For the secondary activities of these sectors, the roles are somewhat reversed. Corporate and individual grants behavior may be motivated by growth, stability, equity, integration, and security considerations. The interdependence relationship, which is a *sine qua non* for the existence of the transfer sector, is closely linked with the phenomenon of economic specialization and surplus generation within the community. The transfer sector provides a mechanism for investment (in the widest sense of the word), i.e. not every individual is engaged in primary tasks of food and shelter production. Until members of the community involved in other than primary tasks have come to the stage of providing an exchangeable of economic value they are strictly grants recipients in terms of the overall community. Grants are given to them in the hope of their future output. These grants may be said to have an "investive" purpose. Grants for education and research fall into this group. The exchange-activities of foundations, non-profit institutions, and the public sector serve a similar function as the primary exchange activities of the individual and the corporate sector, i.e., they provide the services of employees and materials (administrative), non-profit sales, purchases from the private industry; and sales of government enterprises in the case of the public sector. Rows (c) and (g) identify the interaction partners of the individual sectors respectively. Finally, Rows (d) and (h) identify the commodity which is exchanged or granted in the particular subset.

Most books on the nature of the public economy usually distinguish between the private or market economy, on the one hand, and the governmental or public economy, on the other. Thus, they disregard completely the increased economic significance of non-profit institutions and other nonmarket activities in the private sector. Likewise, they ignore the increased importance of the exchange activities of the government, which is termed "government business." There is very little reason to lump together the activities of the Post Office with the social welfare payments of the Department of Health, Education, and Welfare. The former have very much more in common with some market institutions that sell goods and services at a price. The relationships between the household and firm sectors fall largely into the private exchange economy. The granting aspects of foundations and charitable institutions are part of the private grants economy. Public

welfare payments, subsidies, etc. must be included in the public grants sector. The business activities of government represent the public exchange sector.[15]

Many economic transactions are, however, of a "mixed" nature: They have both exchange and grants elements and thus represent an overlap of the exchange in the grants economy.

In Figure 3.1 a diagramatic representation of the relationship between exchange and grants, as well as the relationship between the public finance concepts of the private economy and public economy, is provided. When these two sets of diagrams are superimposed on each other, they facilitate a comparison of these concepts. It is evident that part of the private economy deals with exchange. Furthermore the interface between private and public grants is found in what might be called "semipublic grants" of the type that arise, for example, from foundations. Furthermore, mixed exchange-grants relations of both the private and public sectors are depicted. The relative magnitude of what constitutes a true public grant and a true public exchange depends upon the inherent view of the nature of the system. We distinguish two views:

> In the first view, only the exchange relations that stem from government production, and which involve a clear *quid-pro-quo*, would be considered part of the public exchange economy. In socialist economies this will involve the major productive efforts of the economy. In so-called market economies this sphere will be confined to what is referred to as "government business", such as post office, public printing, and in some countries, railroads. Public utilities, in general, may be considered public exchange or semi-public exchange, if they are carried out through a private agent (such as the telephone and telegraph service in the U.S.). However, outlays for defense, physical infrastructure development (e.g. highway building and the laying of pipelines) and for human infrastructure development (e.g. education and training) are considered part of the grants economy. This implies that the share of benefits received by an individual in terms of public goods is not directly related to the share of cost he bears. Hence, no point is seen in attempting a market analogy of the type that would, for example, be the heart of the so-called voluntary-exchange theory of public finance.[16]
>
> The second view focusses not on the totality of the system but on the degree of bilateralism present in the relationship between the individual and the total system. The latter is reflected in the ratio of benefits and costs that describes the individual's relationship with the collectivity. In other words, the extent of the public exchange economy within the overall public economy is simply determined by the extent that an individual's taxes pay for his share of public benefits. The excess of his payments may be termed a net tax or a grant to the collectivity.

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[15] The division of the grants economy into private and public is thus based on an institutional criterion. Conceivably a distinction based on a functional dichotomization could be developed. For reasons of data collection and the controlability of grants, the latter seems less useful. Henceforth the distinction will be based on structural considerations.

[16] See Richard Musgrave, *The Theory of Public Finance, op. cit.*

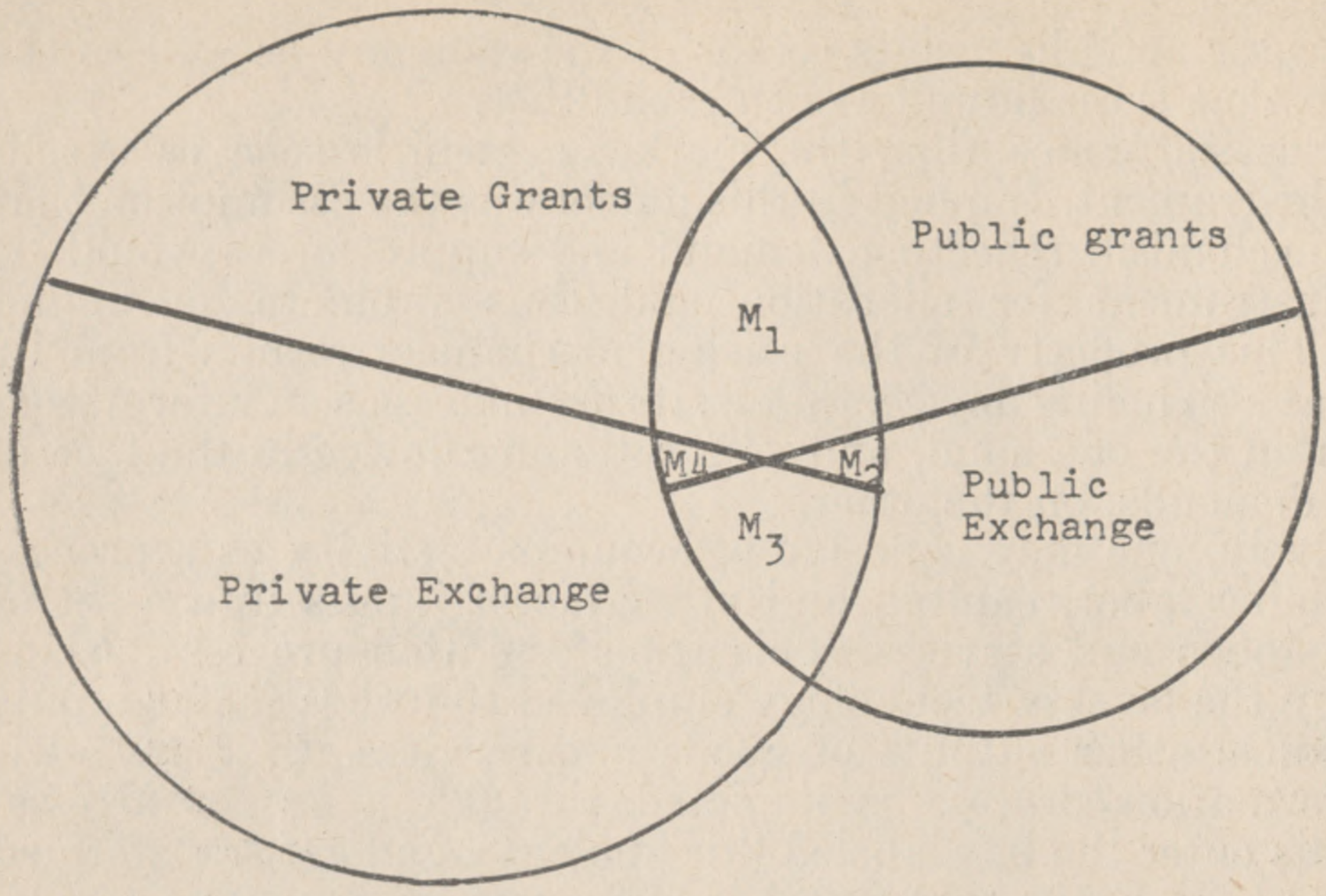


FIGURE 3.1.—Venn diagram of the relationship between private and public exchange and grants economies.

These two views would lead to largely different magnitudes of the public grants and exchange economies. In the former view, a much larger part of the public economy would constitute grants than under the latter view. It is quite evident that the latter view would simply define the public grants economy as a sum of residuals or net taxes paid by the grantor group, or conversely, the sum of net benefits received by the grantee group. It is obvious that the sum of net benefits and net costs must equal zero in the absence of a public debt. To invoke a market analogy, one might postulate that a "social contract" underlies a social relationship between taxpayers and the beneficiaries of public outlays. However, this social contract is not enforceable in any active sense. Similarly, the benefits that accrue to the individuals from the payment of taxes are in no way directly related to his individual preferences. The individual can only determine through his own work behavior the amount of his income and hence the amount of his taxes, but not the specific purposes to which his taxes are allocated, except through a process of political decision making. In consequence, we tend to accept the former view of the nature of the public grants and exchange economies.

IV. GRANTS AS REGULATORS OF ECONOMIC AND SOCIAL MARKET FAILURES

This section shall go beyond the static frame of reference that served as a guide to the foregoing classifications of the function and the structure of the grants economy. We shall do so by pointing out the flows of money and information which take place both within the

exchange sector and the grants sector of the economy as well as the relationship that these flows have to each other.

In the classical conception, the market system is seen as a self-regulating instrument. Implicit in this model was the assumption that the price mechanism reflecting demand and supply forces would be an ideal instrument for allocation and thus promote maximum efficiency. This property of the pricing mechanism results from its usefulness as a signaling device, that is, its usefulness as an information mechanism on the one hand, and as a rationing device in the face of competing demands, on the other.

Alternatively, one may conceive of economic activity as a process of transforming labor, capital, and other factor inputs into a set of outputs of goods and services. This transformation process itself is expressed by the level of technology employed to utilize factor inputs and to produce other outputs of goods and services. In Figure 4.1, this transformation process is depicted through a set of arrows: Factor inputs enter the box labeled "technology" and get transformed into outputs. We notice yet another flow, not of economic goods, but of information. This flow relates the outputs of goods and services produced to the inputs which are being supplied. The key instrument in making these comparisons is found in the price mechanism. Similar to the thermometer built into the thermostat which regulates the heat supply to a room, the price mechanism regulates the factor inputs which are supplied into the system. In the most ideal conception, this thermostat-*qua*-pricing system is entirely adequate to regulate the supply of factor inputs and the demand for the outputs of goods and services produced in the exchange or market economy. This indeed was the conception of economic life prevailing implicitly in the theories of the classical school.

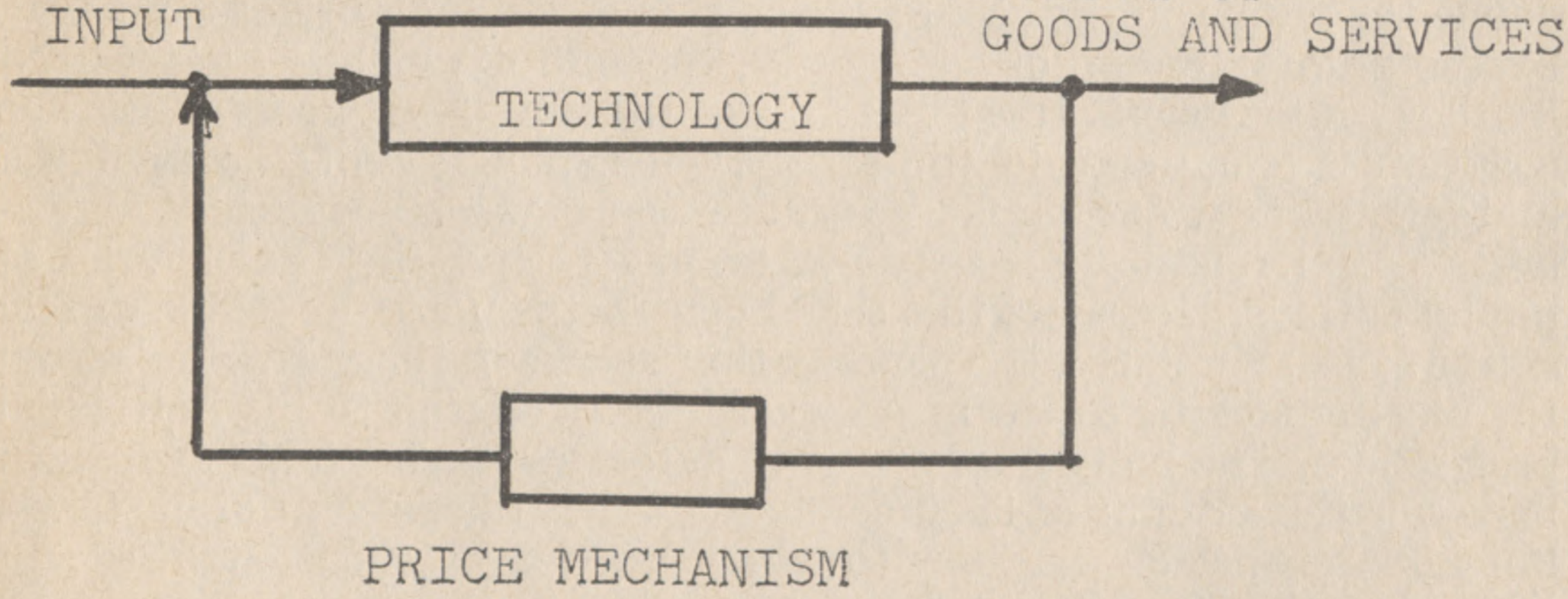


FIGURE 4.1.—The exchange economy as a cybernetic system.

It was Karl Marx who questioned the adequacy of this mechanism. He postulated that changes in output would relate to changes in income distribution, which in turn would change the political and the social-cultural environment within which market processes operate. Similarly, in the concluding notes of the *General Theory*, Keynes pointed to the two main defects of Western market economies: "The outstanding faults of the economic society in which we live are its

failure to provide for full employment and its arbitrary and inequitable distribution of wealth and incomes."[17] Keynes' *General Theory* was more concerned with the cyclical effect of the market system, that is, with the need to control cyclical instability in prices, output and employment. Both Keynes and Marx pointed to a deficiency in the regulating function of prices and markets, but they called for widely differing remedies. Keynes favored the management of aggregate demand as a countercyclical instrument; Marx advocated political change leading to structural changes in the economic, political and social-cultural systems. Both neglected, however, the role of grants as actual potential regulators of market deficiencies. Perhaps this is understandable: In their time public grants flows were very much smaller than what they are today. It is only due to growing organization and industrialization that many of those transfers which formerly took place within the household, or between households, have been shifted into the public arena. The old joint family structure has been breaking up and many of the functions which were carried out within the extended family are either not met at all or have to be supplied publicly through the public grants economy.

In the simplest conception one could examine the nature of these relationships even before the presence of public grants. The household and the firm sectors themselves could be broken down further and examined for their underlying realtionships between the members of the household sector and between the various business firms. A vast network of voluntary transfer relationships existed even at a time when markets had an even more dominant position that what they have today.

Even among business firms we notice a system of transfers. For example, in corporations consisting of many divisions, one division may supply goods and services to another at prices which may be below or above the going market price, thus conveying a grant equivalent or a "tax-equivalent" to the other division. Similarly, the fixing of market prices is not as automatic as economics textbooks would have us believe. If the president of the corporation allocates an unduly small share of the overhead to a new product being introduced, it is likely to be more successful because its price would be considerably lower. If the opposite is true, a product or a division of the corporation which would be quite successful otherwise, could in fact be burdened with an undue part of the overhead and thus experience great difficulties in the competitive struggle with other corporations in the market place. We notice already here that Adam Smith's Invisible Hand, which presumably automatically regulates market prices based on demand and supply forces, is partly visible within the firm and household sectors.

When we introduce into this simplified view of economic relations the significant economic role of the government, the network becomes more complicated. First of all, the government collects taxes from and pays subsidies to the private sector. These transfers and subsidies result from the failures of markets to operate most efficiently. However, market failures may also lead to the supply of these goods and services directly by the government. An example is found in the public building of roads, canals, the provision of free education, police services, and

[17] *Op. cit.*, p. 372.

so on. These so called public goods are supplied publicly because the market does not generally supply services which have large externalities.

Thus far we have argued about the need to interfere in the market mechanism and to supply needed goods and services or to influence the marekt process through cash transfers, whenever economic efficiency is affected by these market failures. However, we may agree with Keynes that one of the faults of the market system is the unacceptable distribution of income which is produced by the market forces; thus we are introducing social equity norms. Similarly, one might add other social norms such as integration, system maintenance, and so on, to this catalog of social norms needed to interfere with the market system. These norms, of course, can be derived from the catalogue of goals for social policy described in Section II. The whole system of taxes and transfers, whether of explicit or implicit nature, in-cash or in-kind, whether in the form of transfer payments to households and or in the form of subsidies to business enterprises, represents a significant force that influences the market relations in a manifold fashion. This network of exchange and grants relationships is depicted in Figure 4.2. The various types of transfers are superimposed on the basic two-way circular flow of the market system familiar from any introductory economics text.

We have thus attempted to provide a sequential logic which expresses the rationale for the growing significance of grants.

In Figure 4.1, we showed the market relations to have a certain analogy to a thermostat, with prices acting as the controlling element. Can this view of the exchange relations be related to the vast network of grants relations? First, grants influence the grantees' willingness to supply their labor in the factor markets, or their capital in the capital markets. Second, transfer payments increase the income of some individuals over and beyond their exchange income. This influences their consumption of goods and services; it represents

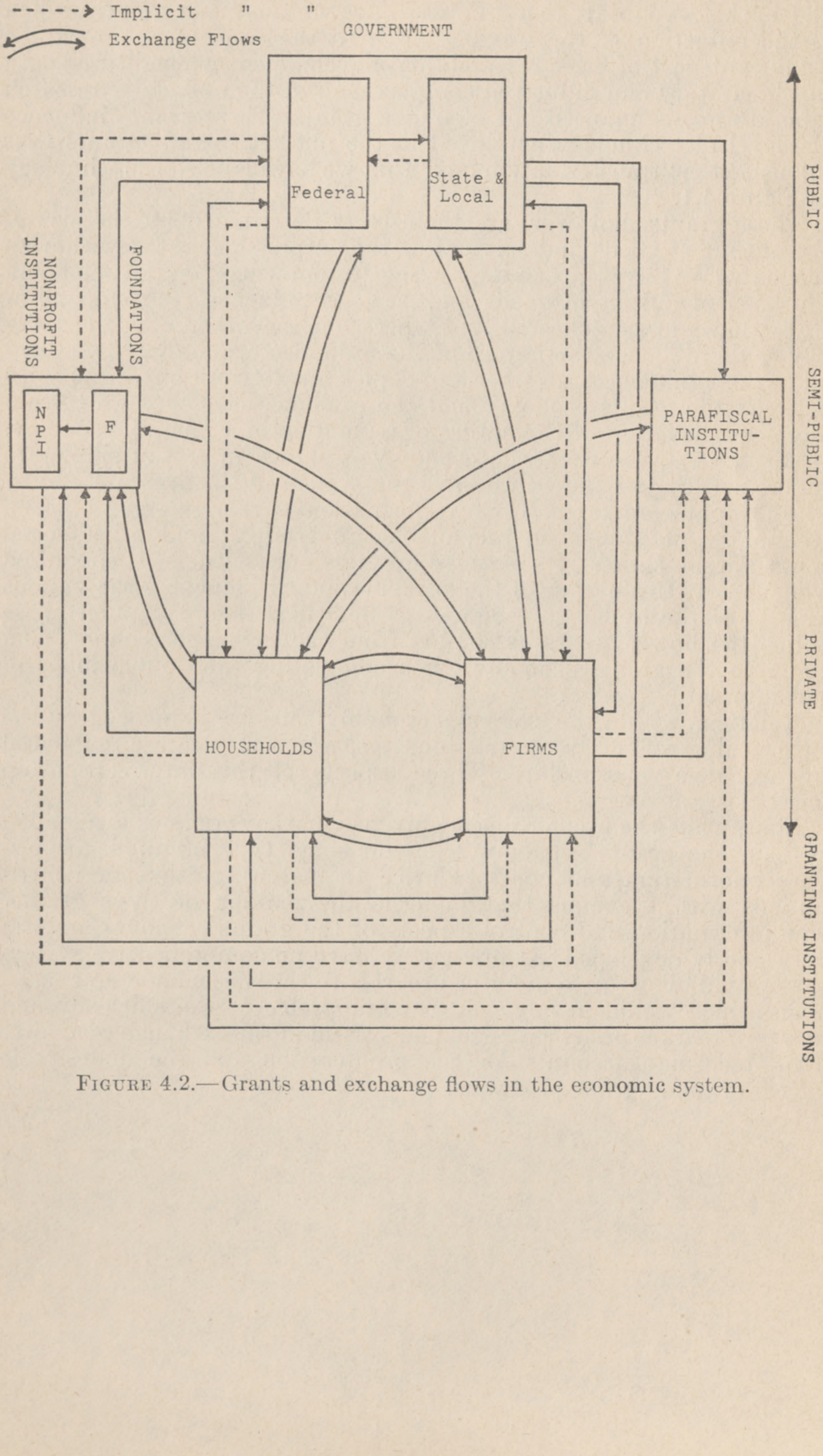


FIGURE 4.2.—Grants and exchange flows in the economic system.

an influence on the output side of the exchange system. Third, transfer payments and subsidies influence the prices of goods and services in the market. A subsidy to a firm may have various effects, one of which is the reduction of the product price to the consumers. Fourth, a significant part of basic research and development expenditures both in the military and industrial complex, and in the university research laboratories, is financed out of public grants. These grants influence the level of technology employed in the market sector. Grants thus influence the "transformation box" that we have labeled as technology in Figure 4.1.

These grants, however, are themselves determined by the size of the output of goods and services or the surplus generated within an economy. We have thus an interacting system where, on the one hand, the level of output of goods and services influences the amount of taxes that can be collected and where, on the other hand, transfer payments influence the nature of the exchange economy. If we draw all of these influences together and depict the network of relationships between the grants economy and the exchange economy we have a more complex view of the nature of regulation in a modern economy. In Figure 4.3, the exchange economy is shown in a way similar to Figure 4.1. Superimposed we have the system of the grants economy whose inputs are taxes. Its transformation is represented by social technology, meaning the role of the government and other social control organizations. Its outputs are grants or transfers. It should be evident that this output of the grants economy influences the various aspects of the exchange economy as described before. Similarly, we notice the flow of taxes as coming from the exchange economy and going to the grants economy, thus completing the double loops of this interacting system.

Relations within the exchange economy thus are influenced by the supervening role of grants relationships, which in turn are influenced by exchange relationships. Three aspects of this interrelationship merit closer attention.

First, while the exchange economy has market prices as a signaling system, the grants economy relies on some type of public or private information and control device to match transfers or contributions with the aims that underlie the making of these grants. The information and control aspects of the grants economy are still very poorly developed. At present we have no comprehensive system that would allow us to monitor progress towards economic and social goals which would in any way be comparable to the efficiency and power of market prices as a signaling system in the exchange economy. This deficiency accounts for the proliferation and the undesirable effects of many grant programs.

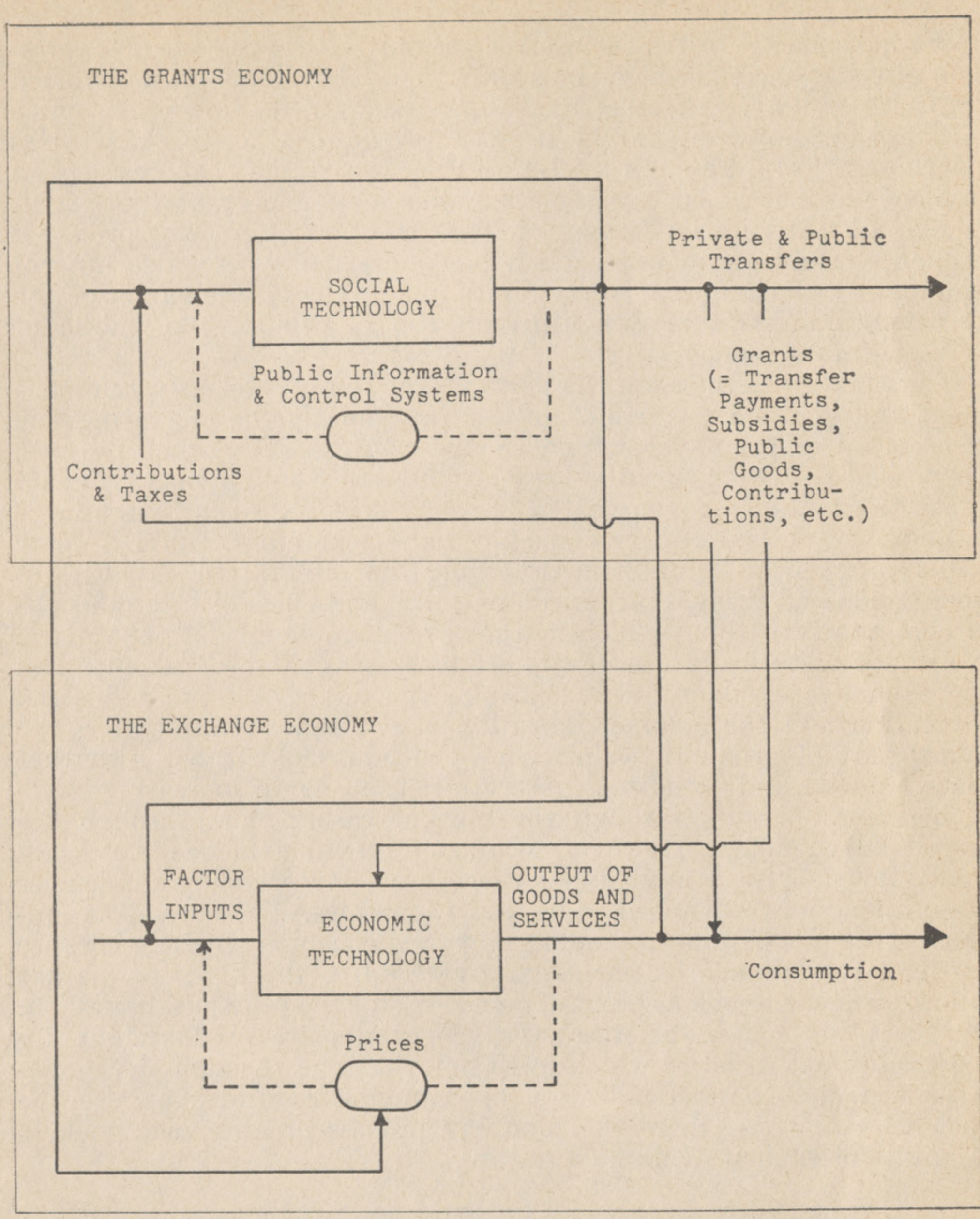


FIGURE 4.3.—The regulation of the exchange economy by the grants economy.

Second, market prices themselves are only *ceteris paribus* an expression of economic efficiency, since they themselves have been distorted by the cumulative effect of many of these transfer flows. The price mechanism, however, rarely if ever provides a feedback on this "pathology" of grants. In this sense then the grants economy has an influence which is far greater than one may expect at first sight. Above all, through its impact on the structure of market prices, it influences the heart of the exchange economy in ways which are not dictated by demand and supply forces but by the visible hands of the private administrators who turn on the faucets of the public or private grants economy.

Thus far we have taken the existence of the market as a reference point and justified the role of grants, particularly the increasing role of the public grants economy, in the context of market failures. Some scholars would turn the logic around and would point to the fact that the grants economy existed in many societies even before large national markets were developed. Grants, therefore, fulfill a basic and fundamental function in providing the integrative structure of households and firms, that is, the patterns and rules of interrelations of community without which market exchange could not take place. No doubt historically the grants economy was more dominant than the exchange economy; only through the advent of the industrial revolution and the commercialization of economic relations did the major part of production shift from the household into the market place. Indeed, industrialization very often means an increasing share of activities passing through the market rather than through the household economy. However, if the empirical evidence which we shall cite shortly is any guide, there are countervening tendencies present in more advanced industrial economies. These tend to emphasize the role of non-market or grants relationships precisely because an excessive reliance on exchange gives rise to the kinds of market failures which we took as point of departure for the previous discussion. On the other hand, societies in which grants are predominant are the traditional societies which have not yet gone through the monetarization and commercialization of economic relations; or else the Socialist countries where the planning process creates vast pockets of grants of explicit or implicit nature.

V. Some Estimates of the U.S. Grants Economy

1. The Definitional Scope of the Grants Economy

Every measurement system is based, explicitly or implicitly, on a measurement model or a theory which relates the phenomenon of interest to other variables. The models discussed in the previous section define the function of grants as regulators of exchange processes. Logically this should be followed by the measurement of grants flows based on *functional definitions*, relating grants to changes in target variables in the exchange economy or in the social system at large.

Unfortunately our present measurement systems are not entirely adequate to this task. Accordingly we shall employ only measures based on *institutional or structural definitions* of the grants economy.

In the introduction we indicated also that the concept of a grant is by no means as unambiguous as it may appear at first sight. The first

problem in estimating the size of the grants economy is therefore definitional in nature; which flows constitute grants?

We have little problem in establishing the nature of explicit grants. Within the private grants economy, no doubt, charitable contributions by individuals and firms, foundation grants, and bequests have to be included. In the framework of public policy these private grants occupy a very special place. While not *directly* subject to public influence, these components of the private grants economy are indirectly used as public policy instruments directed towards the achievement of certain social ends. The public sector attempts to influence the magnitude of these private grants flows through the incentive of tax deductibility. By awarding a private institution acting in the public interest a preferential status, individuals, corporations, foundations, and non-profit institutions are induced to engage in socially desirable transfers. This procedure constitutes an alternative to financing such services through public funds. By employing this indirect control and incentive system the public sector can further exercise an influence on the social fabric by fostering group loyalty patterns between grantees and grantors.

A sizable part of explicit public grants are grants to persons. Some of these are in cash, others a provision of goods and services. These grants involve social welfare payments or services, such as Social Security, Veterans' Pensions, Unemployment Benefits, Public Assistance, Workmen's Compensation, to name but some.[18]

Among explicit grants we find also producers' subsidies. These grants are made to various sectors of production and have their impact primarily on the allocation of factors of production. Subsidies may of course affect the functional distribution of income if directed at factor markets. Or else they may be an instrument to affect product markets and thereby influence the interpersonal income distribution. This effect comes from the supply side rather than from the demand side as in the case of social welfare payments. Furthermore, these grants have aggregate effects.

While some difference between the private and public components might be cited, more similarities may be observed. In their final impact both private and public grants flows have the allocative, aggregative and distributive effects discussed. To these we may add the integrative and system maintenance effects which are likely to differ somewhat. For example, private redistribution via individual contributions tends to have integrative effects in the sense that they further the bond of interdependence between donors and donees. The same is not necessarily true for public grants: Some public transfers programs have been shown to enhance family breakup and hence the disintegration of one of the major pillars of our social system. Similar examples may be cited for the other general efficiency norms discussed earlier in the paper.

As a further and more elusive component of the grants economy, we have to include the services provided by the government sector. The services provided by various branches of the government are largely of a social or public goods nature. They involve the supply of goods and services characterized by relatively large externalities.

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[18] For a detailed description see Ida C. Merriam and Alfred M. Skolnik, *Social Welfare Expenditures Under Public Programs in the United States, 1929–66*, Washington, D.C.: U.S. Department of Health, Education, and Welfare, Social Security Administration, 1968 (U.S. Government Printing Office).

Their benefit is rendered often to the system at large and only indirectly to individuals. Public defense, for example, is very difficult to allocate to individuals. Nonetheless, it should be pointed out that these social goods *do* often have a very strong private character because they benefit some groups very much more than others. Hence they assume a distributive character, entailing at least implicitly a tax on some or a transfer to others. Government services also have significant allocative and aggregate effects which are well known. The determination of this part of the government budget is influenced, for example, rather dramatically by its prospective impact on business cycles, inflations, or recessions.

Benefits are always hard to measure. A first crude attempt to do so may result from a valuation of benefits in terms of costs incurred. This cost component of public services is measured by the item "government purchases of goods and services" in national statistics.

So far we have covered primarily the more "visible" components of the grants economy. Among the "less visible" flows we find intrasectoral grants, on the one hand, and implicit grants, on the other.

Within the overall government sector we have to add grants-in-aid made by one level of the government—largely the federal government—to other levels—largely the state and local governments. These flows are of major interest from the point of view of controlling or regulating market flows: Instead of having a single-level controller (as depicted in Figure 4.3), we have now a hierarchy of control levels which generally develop their own dynamics. Often, indeed, they may lead to counteracting policies or to delays which cause amplifications in the flow of exchangeables and information; or to positive or reinforcing feedbacks which cause crises and threaten system viability. At a time where the demands placed on municipalities and state government are outstripping their ability to supply needed services, intergovernmental fiscal flows—of a revenue-sharing and other nature—are thus of great policy interest.

A surprisingly large component is added, when we include the intrasectoral grants of the household sector. Indeed, the rise of the public grants economy, which took place particularly during the past few decades, cannot be understood without a knowledge of the changing patterns of intra- and inter-family flows of exchangeables.

Family cohesion broke down largely as the result of the industrialization process of the past one to two hundred years. Formerly a large share of economic production took place within the extended family encompassing several primary families—each of which consists of husband, wife, and children. The extended family was also a social insurance agency and an educational institution. The breakup of these extended families into several primary families calls forth the public supply of services formerly provided privately. Similarly this breakup of the extended families was often furthered by these very public transfers.

In spite of the shift of part of the production and other social service functions outside the family, a large part of a family's economic life is still characterized by transfers among primary units within the family (wife, children, occasionally the husband) or to secondary units living with the primary family (aged relatives or friends). Furthermore,

inter-family transfers are an expression of the integrative relations existing between primary families.

Any public policy measure aimed at attaining integration, system maintenance, freedom and security, and other goals, must by necessity take into account the presence of these transfer networks. Public welfare payments can be viewed as a substitute or a complement to existing private transfer flows, depending on the way public programs are fashioned.

The vast network of intra- and inter-firm transfers existing in the production sector of the economy further adds to the size of the grants economy. Within a given firm, divisions treat each other differently than they would treat outside firms, in their pricing and supply behavior. Thus they convey implicit grants to each other. The same holds true for the relations of firms which, by the textbook rules of competition, should not make explicit or implicit transfers to each other.

Public subsidization programs must take note of these transfer relations, and of the effects that they have on the aims of the subsidizing agency.

We may go on with this sequence focussing on implicit grants relations existing between and within sectors. If we focus onto the five sectors included above—households, firms, nonprofit institutions (including foundations), the government, and the parafiscal institutions—we obtain 10 possible combinations of *inter*sectoral grants relations, alone. There are also some explicit grants flows, which we have not specifically mentioned. A case in point are flows from non-profit institutions to firms, say, through the economic benefits that a firm receives from its own non-profit hospital. These, in turn, would add to the overall size of the grants economy. Indeed the investigation may be aided by a further disaggregation of sectors.

There is, however, a limit to the range of inter- and intra-sectoral transfer relations. Every subsector ultimately rests on individuals who constitute the primary "sectors" which cannot be broken down further. There exists therefore a total grants economy, just as there exists a totality of production in the economy. However, just as Gross National Product and its components offers only operational estimates of the true magnitude of gross production, the grants economy concept provides us with nothing more than alternative estimates of true grants flows. Ultimately the size of the true grants flows is dependent upon the size of the surplus of production over own comsumption. De facto, however, not all of the surplus is transferred, for a variety of reasons which need not detain us here.

2. Estimates of the Magnitude of the U.S. Grants Economy

There is little problem in identifying, conceptually, most of the components of the grants economy. In practice, however, very few estimates of these components are available, largely because they have been examined far too little. Additionally, in some cases considerable measurement problems arise. This section presents therefore only estimates of some components of the grants economy.

From Table 5.1 we note the magnitude of individual corporate and foundation contributions, as well as of bequests. Foundation contributions represent three-fourths of the nominal foundation grants made in a given year, since an estimated one-fourth of contributions are made out of current receipts, i.e. from contributions made by individuals and corporations to foundations, which are already reported under the latter categories. The reduction by one-fourth is therefore a necessary netting out to avoid double counting of these types of transfers. The figures for private grants are reported by calendar years.

Table 5.1 reveals the following patterns:

(*a*) All private sub-sector transfers increased in absolute amounts. Individual contributions (as reported in income tax returns) grew from $932 million in 1929 to $14.3 billion in 1970. Striking increases may be noted for this period also for corporate contributions (from $32 to $900 million), foundation contributions (from $91 to $1,275 million), and bequests (from $154 to $1,400 million).

(*b*) The total of these private grants increased from about $1.2 to about $17.9 billion in these 41 years (column 5).

(*c*) We note (from column (6)) only a slightly increasing trend in the *relative* magnitude of these private grants, that is, an increase from 1.17 to 1.84% of GNP only. Furthermore, there are pronounced fluctuations in the relative size of private grants. The major dip occurred during the Great Depression.[19]

(*d*) Individual contributions overshadow the role of other private transfers. While private grants increased about fourteen times during the 41 years, corporate contributions, though much smaller in absolute size, grew almost by a factor of thirty.

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[19] For an earlier discussion of these cycles see Martin Pfaff, with an Introduction by Kenneth E. Boulding, "The Grants Economy: Unilateral Transfers in the U.S. and Global Economies," East Lansing, Mich.: Computer Institute for Social Science Research, Michigan State University, (Research Report), March 1968.

TABLE 5.1.—SOME COMPONENTS OF THE PRIVATE GRANTS ECONOMY, 1929–70

[Current dollars, in millions]

Year	Individual contributions	Corporate contributions	Net foundation contributions	Bequests	Total (1)+(2)+(3)+(4) Amount	Percent of GNP
	(1)	(2)	(3)	(4)	(5)	(6)
1929	932	32	91	154	1,209	1.17
1930	833	35	91	223	1,182	1.30
1931	692	40	69	220	1,021	1.34
1932	646	31	61	191	929	1.60
1933	602	27	53	96	778	1.40
1934	679	27	45	146	897	1.38
1935	712	28	47	106	893	1.24
1936	847	30	49	128	1,054	1.28
1937	909	33	51	127	1,120	1.24
1938	860	27	48	200	1,135	1.34
1939	1,012	31	47	179	1,269	1.40
1940	1,078	38	44	143	1,303	1.31
1941	1,307	58	47	175	1,587	1.27
1942	1,672	98	49	155	1,974	1.25
1943	2,106	159	52	186	2,503	1.31
1944	2,208	234	54	202	2,698	1.28
1945	2,375	266	56	192	2,889	1.36
1946	2,656	214	56	186	3,112	1.49
1947	3,061	241	75	223	3,600	1.56
1948	3,352	239	98	296	3,985	1.55
1949	3,476	223	113	206	4,018	1.57
1950	3,865	252	113	274	4,504	1.58
1951	----------	343	----------	301	----------	----------
1952	4,772	399	----------	328	----------	----------
1953	5,191	495	93	355	6,134	1.68
1954	5,346	314	164	398	6,222	1.71
1955	5,775	415	212	466	6,868	1.73
1956	6,338	418	449	534	7,739	1.85
1957	----------	417	555	602	----------	----------
1958	7,221	395	336	669	8,621	1.93
1959	----------	482	358	600	----------	----------
1960	7,891	482	403	951	9,727	1.93
1961	8,134	512	478	914	10,038	1.93
1962	8,576	595	602	876	10,649	1.90
1963	8,927	657	679	1,100	11,363	1.93
1964	9,546	729	795	1,200	12,270	1.94
1965	9,983	785	915	1,309	12,992	1.90
1966	10,612	805	1,028	1,400	13,845	1.85
1967	10,953	829	1,140	1,500	14,422	1.82
1968	12,600	865	1,252	1,300	16,017	1.85
1969	13,600	900	1,200	1,500	17,200	1.85
1970	14,300	900	1,275	1,400	17,875	1.84

SOURCES OF TABLE 5.1

Col 1: Individual Contributions: 1929–1950, 1952–1956, 1958, 1960–1967. Estimated by Ralph Nelson, obtained in a personal communication. 1968–1970, "Giving U.S.A.," various years.

Col. 2: Corporate Contributions: 1929–1935, U.S. Department of Commerce, "U.S. Income and Output," Washington, 1958, pp. 134–45; 1936–1964, Ralph L. Nelson, "Economic Factors in Corporate Giving," 1970, Appendix, Table I, p. 92; 1965–1970: "Statistics of Income: Corporate Income Tax Returns;" 1968–1970, "Giving U.S.A.," various years.

Col. 3: Foundation Grants: 1929–195(, "The American Giver," 1954; 1953–1968, "Institutional Investor Study Report of the SEC," Supplemanary, Vol. I (NBER) Mar. 1(, 1971. Appendix III, Table A III–1, p. 364. (Estimated by Ralph Nelson); 1969–1970, "Giving U.S.A.," various years.

Col. 4: Bequests: 1929–1950, 1953, 1954, 1958, 196(, 1962, 1965: Internal Revenue Service: "Statistic of Income, Estate Tax Returns:" 1951, 1952, 1957, 1959, 1961, 1963, 1964, 1966, 1967. Interpreted and extrapolated; 1968–197(, "Giving U.S.A.," various years.

When we turn to Table 5.2 we observe the staggering role of public grants. Transfers, interest and subsidies increased from $1.8 billion to $92.4 billion (column (4)) or from 1.75 percent of GNP to 9.46 percent during the period 1929–1970 (column (5)).

TABLE 5.2.—SOME MAJOR GRANTS ECONOMY COMPONENTS 1929–70

[Current dollars, in billions]

Year	Contributions, foundation grants and bequests		Transfers, interest and subsidy		Government purchases of goods and services				Total	
							Total			
	Amount	Percent of GNP	Amount	Percent of GNP	Federal	State and local	Amount	Percent of GNP	Amount	Percent of GNP
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1929	1.2	1.17	1.8	1.75	1.3	7.2	8.5	8.24	11.5	11.16
1930	1.2	1.30	1.9	2.10	1.4	7.8	9.2	10.18	12.3	13.58
1931	1.0	1.34	3.1	4.09	1.5	7.7	9.2	12.14	13.3	17.57
1932	.9	1.60	2.6	4.48	1.5	6.6	8.1	13.97	11.6	20.05
1933	.8	1.40	2.7	4.86	2.0	6.8	8.0	14.39	11.5	20.64
1934	.9	1.38	3.1	4.76	3.0	6.8	9.8	15.05	13.8	21.20
1935	.9	1.24	3.4	4.71	2.9	7.1	10.0	13.85	14.3	19.80
1936	1.1	1.28	4.1	4.97	4.9	7.0	12.0	14.55	17.2	20.80
1937	1.1	1.24	3.2	3.54	4.7	7.2	11.9	13.16	16.2	17.94
1938	1.1	1.34	3.8	4.49	5.4	7.6	13.0	15.35	17.9	21.17
1939	1.3	1.40	4.2	4.64	5.1	8.2	13.3	14.70	18.8	20.74
1940	1.3	1.31	4.4	4.41	6.0	8.0	14.0	14.04	19.7	19.77
1941	1.6	1.27	4.0	3.21	16.9	7.9	24.8	19.92	30.4	24.40
1942	2.0	1.25	4.4	2.79	51.9	7.7	59.6	37.75	66.0	41.78
1943	2.5	1.31	4.7	2.45	81.1	7.4	88.6	46.24	95.8	50.01
1944	2.7	1.28	6.5	3.09	89.0	7.5	96.5	45.93	105.7	50.30
1945	2.9	1.36	10.4	4.91	74.2	8.1	82.3	38.48	95.6	45.11
1946	3.1	1.49	18.5	8.87	17.2	9.8	27.0	12.95	48.6	23.31
1947	3.6	1.56	17.3	7.48	12.5	12.6	25.1	10.85	46.0	19.89
1948	4.0	1.55	18.8	7.30	16.5	15.0	31.6	12.27	54.4	21.21
1949	4.0	1.57	21.3	8.30	20.1	17.7	37.8	14.74	63.1	24.61
1950	4.5	1.58	22.9	8.04	18.4	19.5	37.9	13.31	65.3	22.93
1951			19.9	6.06	37.7	21.5	59.1	18.00		
1952			19.0	5.50	51.8	22.9	74.7	21.62		
1953	6.1	1.68	19.5	5.35	57.0	24.6	81.6	22.38	107.2	29.41
1954	6.2	1.71	21.9	6.00	47.4	27.4	74.8	20.50	102.9	28.22
1955	6.9	1.73	23.4	5.88	44.1	30.1	74.2	18.64	104.5	26.25
1956	7.7	1.85	25.5	6.08	45.6	33.0	78.6	18.75	111.8	26.68
1957			28.7	6.51	49.5	36.6	86.1	19.52		
1958	8.6	1.93	33.0	7.38	53.6	40.6	94.2	21. 6	135.8	30.37
1959			34.0	7.03	53.7	43.3	97.0	20.05		
1960	9.7	1.93	36.5	7.25	53.5	46.1	99.6	19.77	145.8	28.95
1961	10.0	1.93	41.3	7.94	57.4	50.2	107.6	20.69	158.9	30.56
1962	10.6	1.90	42.8	7.64	63.4	53.7	117.1	20.90	170.5	30.44
1963	11.4	1.93	44.4	7.52	64.2	58.2	122.5	20.74	178.3	30.19
1964	12.3	1.94	46.7	7.38	65.2	63.5	128.7	20.35	187.7	29.68
1965	13.0	1.90	49.9	7.29	66.9	70.1	137.0	20.03	199.9	29.19
1966	13.8	1.85	55.5	7.40	77.8	79.0	156.8	21.10	226.1	30.16

1967	14.4	1.82	62.8	7.91	90.7	89.4	180.1	22.69	257.3	32.42
1968	16.0	1.85	70.5	8.15	99.5	100.7	200.2	23.17	286.7	33.14
1969	17.2	1.85	77.9	8.36	101.3	110.8	212.2	22.84	307.3	33.00
1970	17.9	1.84	92.4	9.46	99.7	120.8	220.5	22.64	330.8	33.87

Sources of table 5.2: Data in cols. (1) and (2) were taken from table 5.1. Data in cols. (4) and (6) to (8) for the years 1929–66 were obtained from the Economic Report of the President, transmitted to the Congress, February 1968, U.S. Government Printing Office, Washington, 1968; the data for the report were provided by the Office of Business Economics, U.S. Department of Commerce. Data in cols. (6) to (8) to (11) for the years 1967–68 are from U.S. Department of Commerce, Office of Business Economics, Survey of Current Business, vol. 49, No. 7, July 1969, pp. 29, 30, and 33.

Government purchases of goods and services are shown for federal, state and local, and total government expenditures in columns (6) to (9), respectively. Federal expenses increased from $1.3 billion to $99.7 billion, state and local expenses from $7.2 billion to $120.8 billion, and total government expenditures from $8.5 billion to $220.5 billion, or from 8.24 percent to 22.64 percent of GNP, during the period of review.[20] This staggering increase in government expenditures is well known and needs no further elaboration.

The total of these private and public grants increased from $11.5 billion to $330.8 billion during the period 1929–1970, or from 11.16 percent to 33.87 percent of GNP (columns (10) and (11), respectively). There is but little doubt that this absolute and relative increase represents the major structural change that took place in the U.S. economy. At the very least, it is as significant as the absolute and relative decline of the agricultural employment or the absolute and relative increase in service sector employment, which took place during the past four decades.

The trend patterns inherent in both groups of public grants are roughly similar, but the cyclical nature of these series differs: Due to the inclusion of the defense sector under Government purchases of goods and services, we note a marked increase of public grants for World War II and the Korean War years.

Time series data are available only for rather few grants flows. An attempt to illustrate the size of some additional components of the grants economy has to be confined therefore to individual years.

Intrafamily transfers to members of the primary family were estimated by Morgan and Baerwaldt at a staggering $313 billion for the year 1970.[21]

Intrafamily transfers (in-cash and in-kind) were estimated by Lampman; they amounted to $16 billion in the year 1967.[22]

No estimates on the intra- and interfirm flows for the total economy are available. Warner dealt, however, with the problem in a case study.[23]

The intergovernmental grant flow has been increasing steadily. The federal grants in aid to state and local governments alone have been increasing from $0.9 billion in 1929 to $14.8 billion in 1966.[24]

Of the vast network of implicit public grants only few have been investigated in any detail. An estimation of implicit private grants, for example, would at this point cause almost insurmountable problems.

Some of the major implicit public grants are conveyed by the income tax laws. During the year 1965, for example, an estimated $64 billion in implicit public grants was conveyed by the individual income tax laws alone.[25]

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[20] A source of inaccuracy is present in these figures since private grants data were collected on a calendar year basis while public grants data are reported by fiscal year ending during the respective calendar year. However, this bias is consistent; hence the totals are useful for comparisons.

[21] James Morgan and Nancy Baerwaldt, "Changing Patterns of Intra-Family Transfers", Paper presented at the joint session of the American Economic Association and the Association for the Study of the Grants Economy, New Orleans, La., December 1971.

[22] Robert Lampman, "Public and Private Transfers as Social Process", K. E. Boulding and M. Pfaff (eds.) *Redistribution to the Rich and the Poor, op. cit.*

[23] David Warner, "Grants Elements inside large Organizations: The Case of the New York City Hospital System", Paper presented at the joint session of the American Economic Association and the Association for the Study of the Grants Economy, New Orleans, L., December 1971.

[24] *Economic Report of the President, op. cit.*, p. 283.

[25] Martin Pfaff and Anita B. Pfaff, "How Equitable are Implicit Public Grants? The Case of the Individual Income Tax", in K. E. Boulding and M. Pfaff (eds.) *Redistribution to the Rich and the Poor op. cit.*

SOME DISTRIBUTIVE PATTERNS OF GRANTS

While we can attempt no more but to illustrate this vast field, some interesting patterns do emerge.

When we turn to an examination of the implicit public grants [26] conveyed by the individual income tax laws, we cannot fail but note the highly regressive nature of these implicit public grants. During the year 1965 a tax payer with an annual income between $2500 and $3000 received, on the average, implicit public grants in the amount of $263.58, while his wealthier fellow-taxpayer with an annual income of, say $15,000 to $20,000 benefited to the tune of $2329.68, on the average. The very rich, however, reaped the harvest: Millionaires received, on the average implicit public grants of $955,405.55. There is but little doubt that these are inequitably distributed. They represent a vehicle for favorable treatment of the wealthy (table 5.3).

TABLE 5.3.—DISTRIBUTION OF IMPLICIT PUBLIC GRANTS (IPG) CONVEYED BY ALL DEDUCTIONS, EXEMPTIONS, ETC., OF THE U.S. INDIVIDUAL INCOME TAX LAWS, BY CLASS OF TOTAL INCOME

Income class	IPG due to all deductions			
	Absolute (millions)	Percent	Cumulative percent	Per capita
—$999,999 to 0	−17,150	−0	−0	−40.22
0 to $600	46,497	.1	0.	13.30
$600 to $1,000	248,670	.4	0.4	87.95
$1,000 to $1,500	522,178	.8	1.3	139.81
$1,500 to $2,000	718,926	1.1	2.4	188.03
$2,000 to $2,500	707,188	.1	3.5	214.14
$2,500 to $3,000	815,839	1.3	4.8	263.58
$3,000 to $3,500	948,215	1.5	6.2	307.14
$3,500 to $4,000	942,967	1.5	7.7	341.03
$4,000 to $4,500	1,071,310	1.7	9.4	366.27
$4,500 to $5,000	1,170,479	1.8	11.2	433.44
$5,000 to $6,000	2,371,902	3.7	14.9	493.91
$6,000 to $7,000	2,956,082	4.6	19.4	599.51
$7,000 to $8,000	3,652,301	5.7	25.3	780.20
$8,000 to $9,000	4,015,041	6.3	31.5	898.72
$9,000 to $10,000	3,955,415	6.2	37.7	1,033.86
$10,000 to $11,000	3,904,306	6.1	43.8	1,162.71
$11,000 to $12,000	3,176,246	5.0	48.8	1,306.03
$12,000 to $13,000	2,798,354	4.4	53.2	1,477.46
$13,000 to $14,000	2,433,563	3.8	57.0	1,668.34
$14,000 to $15,000	2,240,936	3.5	60.5	1,792.06
$15,000 to $20,000	6,040,810	9.7	69.9	2,329.68
$20,000 to $25,000	2,947,014	4.6	74.5	3,474.78
$25,000 to $50,000	7,068,517	11.1	85.6	6,565.45
$50,000 to $100,000	3,879,380	6.1	91.6	14,868.82
$100,000 to $150,000	1,346,996	2.1	93.9	32,071.79
$150,000 to $200,000	624,728	1.0	94.7	47,185.46
$200,000 to $500,000	1,461,906	2.3	97.0	91,511.33
$500,000 to $1,000,000	674,068	1.1	98.1	248,458.63
$1,000,000	1,235,339	1.9	100.0	955,405.55

Source: Martin Pfaff and Anita B. Pfaff, "How Equitable Are Implicit Public Grants? The Case of the Individual Income Tax," op. cit.

Similarly one can find little justification for the fact that, for example, the true cost of $1 contribution is less than 40 cents to the wealthy with incomes of over $30,000 and over 93 cents to the poor.[27]

[26] Among the major provisions giving rise to these implicit public grants are charitable contributions, deductions for other taxes paid, interest deductions, dividend exclusion, ½ of realized long term capital gains, rent on owner-occupied property, tax exempt interest on state and local bonds, personal exemptions for taxpayers, their dependents, old age, and blindness, uses of tax schedules 2 and 3, alternative tax computation, and investment tax credit. For a detailed description see M. Pfaff and A. Pfaff, "How Equitable are are Implicit Public Grants? The Case of the Individual Income Tax", *op. cit.*

[27] M. Pfaff and A. B. Pfaff, "The Relationship Between the Grants and Exchange Sectors of the Economy," op cit.

There is little social justification in this, except perhaps to justify the continued existence of great incomes and wealth by the (highly subsidized) wealthy!

Similar questions can be raised with respect to other provisions favoring home ownership rather then rental, and so on.

The distributive pattern of Social Security, Public Assistance, Workmen's Compensation, Unemployment Benefits, and Veterans' Pensions (henceforth referred to as social welfare payments) do not show such a drastically regressive pattern; but even here we find that a sizeable share accrues to the not so very poor. In Table 5.4, the distribution of these social welfare payments by class of income before social welfare payments is shown for the year 1966. We observe a roughly bimodal distribution, reflecting the fact that the major share of Public Assistance is paid to the very poor, while the major share of Social Security and Veterans Pensions goes to families with an income of more than $3,000 per year. Column (5) shows the percentage of families (not individuals!) of recipients in a certain income class, while column (6) shows the percentage of all families (recipients and non-recipients of these social welfare payments). The average receipts do not differ very markedly between income classes. Certain low income groups, however, appear to be rather neglected by the social welfare system.[28]

TABLE 5.4.—THE DISTRIBUTION OF SOCIAL WELFARE PAYMENTS BY INCOME CLASS, 1966

Income class	Social welfare payments			Percent of families	
	Amount (millions)	Percent	Per family	Recipients	All
(1)	(2)	(3)	(4)	(5)	(6)
Negative income	$116.434	0.4	$1,372.73	0.4	0.3
Zero income	5,091.027	15.9	1,801.83	12.9	5.1
$1 to $599	4,905.953	15.3	1,734.11	12.9	5.6
$600 to $999	2,329.005	7.3	1,641.84	6.5	3.2
$1,000 to $1,499	2,670.816	8.3	1,750.43	7.0	3.7
$1,500 to $1,999	2,066.843	6.4	1,685.90	5.6	3.2
$2,000 to $2,499	1,552.474	4.8	1,647.07	4.3	3.0
$2,500 to $2,999	1,131.192	3.5	1,560.25	3.3	2.6
$3,000 to $4,999	3,559.646	11.1	1,384.58	11.8	12.7
$5,000 to $9,999	5,772.023	18.0	1,144.70	23.0	36.1
$10,000 to $24,999	2,686.560	8.4	1,059.99	11.6	23.0
Above $24,999	196.690	.6	1,277.65	.7	1.4
Total	32,078.648	100.0	1,466.19	100.0	100.0

Source: Estimated by the authors from the Survey of Economic Opportunity, Office of Economic Opportunity.

Table 5.5 conveys the pattern of increase of in-cash producers' subsidies granted by the government to private industries (farm, water transportation, air transportation, wholesale trade, and real estate) for the period 1947–1968. To this we may add the deficit of federal *public* enterprises subsidized from the public exchequer. (The magnitude of the surplus of state and local government enterprises is also shown.)

[28] For a more detailed treatment of this topic see Robert Lampman, "How much Does the American System of Transfers Benefit the Poor?", *Economic Progress and Social Welfare*, L. H. Goodman (ed.), New York, 1966; Benjamin Okner, "Transfer Payments: Their Distribution and Role in Reducing Poverty", *Redistribution to the Rich and the Poor, op. cit.* Anita B. Pfaff, "Transfer Payments to Large Metropolitan Poverty Areas: Their Distributive and Poverty Reducing Effects" *Transfers in an Urbanized Economy, op. cit.*

TABLE 5.5.—SUBSIDIES BY INDUSTRY, 1947–68 (IN MILLIONS)

Year	Farm [1]	Water transportation [1]	Air transportation [1]	Wholesale trade [1]	Real estate [1]	Federal Government enterprises [1]	State and local government enterprises
1947	277	52	0	16	38	218	767
1948	227	33	0	11	30	372	781
1949	161	32	0	10	25	526	860
1950	249	56	0	18	34	808	918
1951	250	17	0	6	35	983	1,051
1952	240	63	0	20	35	656	1,129
1953	186	113	17	16	27	472	1,220
1954	224	126	70	10	33	692	1,363
1955	200	120	43	12	29	1,098	1,565
1956	486	121	38	17	67	1,718	1,691
1957	891	121	37	12	125	1,448	1,771
1958	988	121	46	12	110	1,433	1,767
1959	619	141	53	15	75	1,231	2,034
1960	610	149	70	11	98	1,529	2,242
1961	1,370	176	81	8	137	2,039	2,333
1962	1,516	212	83	8	204	1,915	2,601
1963	1,517	191	83	4	165	1,630	2,838
1964	1,947	202	82	4	228	1,766	2,901
1965	2,211	195	79	4	248	1,568	3,015
1966	2,951	173	67	0	330	1,900	3,121
1967	2,782	199	60	0	340	1,279	3,274
1968	3,117	204	51	55	330	493	3,446

[1] A reduction in the industry's share in Gross National Product for private industries, a deficit for Government enterprises.

Source: Worksheet, Office of Business Economics, U.S. Department of Commerce.

This table neglects the very sizeable implicit public grants conveyed by tax exemptions or public regulation of market forces, as is the case, for example, in agriculture. Nonetheless, with the exception of wholesale trade, all private sectors obtained increasing amounts of subsidies. The same is generally true for the financing of the deficit of federal government enterprises.

VI. The Regulation of the Regulators: A Proposal for National Grants Information and Control Systems

The foregoing discussions has pointed to the role of grants in general and of a subset of grants, namely subsidies, in particular, as regulators of exchange or market processes. We noted that they are aimed or can be aimed at bringing about market offsets. In this sense then they are a crucial element in the making of economic and social policy. We noted, however, a wide discrepancy between their ideal function and their actual allocation in our present socio-economy. Ideally they serve to bring about market and general efficiency. But in fact they have led to *perverse* results: Far from remedying the inequities and distortions brought about by the market processes they have often exacerbated many of them. Whether subsidies and grants are good or bad depends, however, ultimately upon their ability to achieve the socially desired goals.

How should we "regulate these regulators"? What is called for is a system of management of this sprawling grants sector. Without these the grants economy is likely to proliferate and grow in manifold directions which are often in conflict with each other. What is needed is a set of controls that prevent the uncontrolled or cancerous growth of subsidies and, more generally, of the whole grants economy.

This new system of management would require several reforms.

First, the goals which are to be pursued by a particular transfer program must be explicitly stated. They should also be expressed in *operational terms*, that is in terms that lend themselves to measurement and reporting. This information should be compiled into an official catalog of national goals, which would work against program duplication and conflict, and would greatly assist the evaluation process.

Second, since most of the goals are likely to involve some degree of conflict, the need for explicit trade-offs is apparent. A system of weights for each priority is therefore necessary. Government policy, for example, should be concerned with a discussion of the priority that is to be given to market efficiency as compared to general efficiency norms, say, in the context of the subsidies for urban housing or transportation.

Third, careful analysis of the effects of grants must be made to determine if they achieve their intended goals or trade-offs. Such analysis is necessary to ensure that outmoded and wasteful grants are eliminated or redesigned.

Fourth, automatic information feed-back on the analyzed effects of grants does not exist. The present budgetary process does not stress the outputs of these grants as much as whether the funds have been properly allocated on the input side. This is an unsatisfactory procedure and must be corrected so that the Government may promptly change or renew resource commitments. In other words, we need real time grants information and control systems in the budgetary process.

Fifth, the re-evaluation of national priorities and goals should be carried out periodically to determine if the priorities still are relevant. The routinization of goal revision is a necessary prerequisite to reduce adjustment lags and policy revision. A change in national priorities and goals, by necessity, should entail a revision of public programs in the light of changing aims.

Sixth, and perhaps most importantly, it is essential to strengthen the quality of the institutions responsible for conducting the above steps and managing grant programs. In part, this can be achieved by strengthening the evaluation functions in both the Congress and the Executive branches. Given the special interest nature of many of these programs, however, it is necessary to create an independent agency concerned with the task of monitoring the performance of these programs with regard to national goals and priorities.

Such an elaborate information and management system is required because the grants sector of the economy does not possess such automatic regulators as the prices of the private market. Yet, we must recognize that grants play crucial and vital links in the present type of social economy. In his celebrated "General Theory," Keynes pointed to the pivotal role of investment and aggregate demand in influencing the level of aggregate activity. In our view, grants play an even more crucial role in the mixed grants-exchange economy that characterizes the last third of the Twentieth Century. They will be ever more dominant in the Twenty-First Century. They are of strategic importance, quite out of proportion to the seeming neglect if not disdain with which economists and public policy makers have generally treated this sprawling part of economic activity in national budgets and accounting systems. Grants policy in that sense is of greater importance than economic stabilization policy. After all, a

concern with the stabilization norm which led to Keynes' system of economic policy, may be viewed as a special case of a more general theory of economic and social policy.

Appendix Note

Earlier versions of part of this paper appeared as:

(1) Martin Pfaff, "Goals and Objectives of Income Maintenance Policy," National Agricultural Policy Conference, Pokagon State Park, Indiana, September 1970 (parts of sec. II).

(2) Martin Pfaff and Anita Pfaff, "The Relationship Between the Transfer and Exchange Sectors of the Economy," *1969 Proceedings of the Business and Economics Section of the American Statistical Association*, September 1969, pp. 532–570 (parts of sec. III).

(3) Martin Pfaff and Anita B. Pfaff, "Grants Economics; An Evaluation of Government Policies," *Public Finance*, 1971 (parts of sec. III).

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