

A Multiple Theory of Budget Determination

by
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This paper is concerned with certain basic problems which arise in formulating a normative theory of the public household¹. Such a theory must include the revenue as well as the expenditure side of the household plan, and both must be determined as integral parts of the same system. The requirement is obvious, but it is not easily met. For one thing, the nature of budget policy is too heterogeneous to permit a unitary explanation. Various functions must be distinguished and dealt with separately, even though they are part of an interdependent system. For another, certain aspects of the problem lead us into the thin air of welfare economics, where as yet the oxygen has been prone to give out before the peak was scaled.

In approaching the design of a multiple budget theory I propose to distinguish between *three major budget functions*. These include (1) the function of *providing for the satisfaction of public wants*; (2) the function of *providing for adjustments in the distribution of income*; and (3) the function of *contributing to stabilization*. While further functions could be added, these will do for present purposes. I shall assume that the fiscal department of our imaginary government is divided into three branches, dealing with these functions respectively, and begin with a look at the nature of each branch. Next I will show how the sub-budgets of the various branches are determined as parts of an interdependent system and how a consolidated budget is derived by a clearing process. Finally, I shall consider some of the advantages and difficulties of the model.

A. The Functions of the Three Branches

I begin with the major problems encountered by the three branches.

1. Service Branch

The Service Branch poses the classical and most intriguing problem of public finance. Its function is to decide just what public wants should be satisfied, how much of such want satisfaction should be provided for, and

¹ The term "normative" is used in contrast to "predictive" i. e., a sociology of fiscal politics.

who should bear the cost. In approaching his problem, the manager of the Service Branch will assume that a “proper” state of distribution and full employment prevail, or, more precisely, that these objectives will be met by the operation of the other two branches. The problem, then, is to provide for the satisfaction of public wants free of direct charge, and paid for out of general tax revenue¹.

What then do we mean by *public as distinct from private wants*? Before noting the difference between the two, let me emphasize an *essential similarity*. As I see it, *both are part of one and the same subjective preference systems of individuals*; in other words, both are *individual wants*. Recognition of this similarity is basic to our entire approach². Beyond this, there is a *fundamental difference*. Goods and services supplied in the satisfaction of *private wants can be purchased by individuals in varying amounts*. Goods and services supplied in the satisfaction of *public wants must be consumed in equal amount by all*. This has two implications.

First, there is a difference in the competitive solution of market price, assuming that such a solution could be obtained in both cases. In deriving a market demand schedule for goods and services supplied in the satisfaction of private wants, individual demand schedules are added horizontally to obtain market demand. Competitive equilibrium is determined at a uniform price where this market demand schedule intersects the supply schedule. Depending upon their particular preferences, individuals will consume varying amounts at the same price. In deriving a market demand schedule for goods and services supplied in the satisfaction of public wants, individual demand schedules (as first noted by *Bowen*) must be added vertically³. The competitive solution now shows that while all individuals must consume the same amount, they will pay different prices. Or, putting the matter in the earlier terms of *Lindahl*, A’s demand schedule for such services (relating amount supplied to the percent of total cost which he offers to assume) may be considered the supply schedule from B’s point of view and vice versa; the equilibrium amount and cost allocation will then be determined at the intersection of these schedules where individual contributions total to 100 per cent⁴.

Secondly, and more important is the fact that this analogy between price determination in the two cases breaks down once it is viewed as an operational solution. Whereas demand schedules for the satisfaction of private wants are revealed in the auction process of the market, such is not the case for the satisfaction of public wants. Since the same amount will be consumed by all, individuals know that they cannot be excluded from the resulting benefits. This being the case, they are not forced to reveal their preferences

1 The question whether the government purchases such goods in the market or produces them itself is irrelevant in this context.

2 While we reject the notion that there are group wants as such, we do not deny in any way that individual preferences are affected significantly by social forces.

3 See *H. R. Bowen*, *Towards Social Economy*, New York, 1948, Ch. 18.

4 See *E. Lindahl*, *Gerechtigkeit in der Besteuerung*, p. 89.

through bidding in the market. The “exclusion principle”, which is essential to exchange, cannot be applied; and the market mechanism does not work.

Wicksell recognized this clearly in his early discussion of the problem and noted that a *political process of decision* making must be substituted and enforced¹. Since decision by voting will hardly be unanimous, the result will not be optimal. However, the voting mechanism must be designed so as to approximate a true statement of preferences, and hence come as close as possible to that solution which would be obtained if the exclusion principle and the forces of the market could be applied. As Professor *Samuelson* put it, there is a solution, but the question is how to find it².

The search for the best detecting technique, i. e., the best method of voting, offers interesting problems, related to *Arrow's* recent work in welfare economics. Without pursuing them here, let me note that I see little reason why majority vote should be given preference. The case for majority vote follows from *Arrow's* third condition that the result must not be influenced by the dropping out of “irrelevant” alternatives. If this condition is adopted, the plurality vote is disqualified. On the contrary, it seems to me that all alternative budget arrangements should be considered as relevant, so that the results of plurality or even point voting may well be superior (at least in the absence of strategy) to those of majority rule.

Such, in briefest possible terms, is the problem of the Service Branch. Its budget, by the very nature of the Service Branch, must be balanced³; and *the function of taxation* in this first context is *to place the cost of public want satisfaction with those whose wants are being satisfied*.

How does this approach relate to some of the earlier views on fiscal theory? There is a direct lineage to the benefit approach, or more specifically to its basic proposition that public services should be related to the people's wants for such services. Similarly, our view borrows from *Lindahl's* formulation provided that we interpret it as an optimal result and not as an operational solution. Viewed in operational terms, *Lindahl's* theory becomes a voluntary payment approach and overlooks the crucial fact that public wants, by their very nature, are not subject to the exclusion principle. Hence such wants are not revealed on a voluntary basis and the proper solution cannot be found through the market. It can be approximated only through a political process and *compulsion* in applying the decision reached by vote.

The ability-to-pay principle has the initial advantage of viewing the problem as outside the market, but beyond this it is seriously defective and bears little relation to our approach. Ability-to-pay principle, including such outstanding thinkers as *Mill*, *Edgeworth* and *Pigou*, have concerned them-

1 See *K. Wicksell*, *Finanztheoretische Untersuchungen und das Steuerwesen Schwedens*, Jena, 1896.

2 See *Paul A. Samuelson*, *The Pure Theory of Public Expenditures*, *The Review of Economics and Statistics*, Vol. XXXV, 1954, No. 4, pp. 387-390.

3 The budget must be balanced in the sense that private expenditures must be reduced so as to release resources for public use. Ordinarily this will mean tax finance. However, under special circumstances, loan finance may serve as a means of establishing inter-generation equity in the financing of public outlays on durable goods.

selves with the tax side of the problem only. In other words, they have disregarded the problem of the Service Branch altogether. Least total sacrifice as the basic criterion of tax policy is a principle in distribution rather than in selecting public services and allocating their cost. If it is to be accepted as *the* principle by which the cost of public services should be allocated, then the same reasoning points to a general rearrangement of the distribution of income, beyond the arbitrary limit set by the size of the Service budget. In other words, the ability-to-pay approach (quite apart from its intrinsic difficulties of utility measurement and comparison) deals with matters pertaining to the Distribution rather than the Service Branch. Multiple pricing in the context of the Service Branch reflects differences in effective demands for the satisfaction of public wants, based on a given distribution of income. As such, it is not to be confused with distributional adjustments undertaken by the Distribution Branch. A case for progression at the level of the Service Branch follows if the income elasticity of demand for public wants typically exceeds unity. It has nothing to do with the slope of income utility schedules, traditionally considered the determinant of the proper degree of progression.

2. *Distribution Branch*

I now turn to the operation of this branch. The manager is instructed again to pursue his task on the assumption that the other branches will meet their objectives, i. e., that public wants are provided for and that full employment is maintained. To the extent that society wishes to undertake distributional adjustments, the tax-transfer mechanism of the public budget furnishes an efficient tool by which to accomplish them¹, and one that provides least interference with the market. This, however, leaves open the difficult question of how to determine just what adjustments are to be made.

The least total sacrifice or maximum welfare approach of the "old" welfare economics offered a simple solution to this problem, mitigated only by the need for considering the effects of equalization upon the level of output at full employment. However, the assumptions of equal and comparable utility schedules, underlying the *Edgeworth-Pigou* type of analysis, are too dubious to permit objective conclusions, even if the goal of maximum total welfare is accepted; and similar, though perhaps less strenuous, objections still apply to *Lerner's* approach to the problem. The "proper" state of distribution, therefore, cannot be derived as a simple exercise in maximization from a given set of utility schedules. It must be thought of as *a problem social choice*.

This, in the last resort, merely shifts the burden from determining the proper distribution of *income* to determining the proper distribution of *votes*; and presently we are returned to the fascinating (but not very conclusive) debate of the philosophers of natural law over the rules by which the social contract should be voted upon to begin with. Whatever is done, a value judgement of some sort lies at the bottom of any solution to the distribution problem.

1 Other approaches are provision for maximum economic mobility and equal educational opportunity.

Be this as it may, let us assume for present purposes that the “proper” state of distribution is to be determined by social choice, based on an equal distribution of votes and with due allowance for its effects upon economic efficiency and social structure. Distributional readjustments thus decided upon will then be implemented through a tax transfer plan. The Distribution Branch budget by its very nature is again balanced, ordinarily in the tax sense, and the function of taxes or transfers in this second context is to provide for the desired distributional corrections.

3. Stabilization Branch

The problem of the Stabilization Branch is familiar and may be dealt with very briefly. It is the function of this branch (in conjunction with other means of stabilization, such as monetary and debt policy) to *maintain an appropriate level of aggregate demand*. Following the earlier pattern, the Stabilization Branch is asked to solve its task in view of a given Service Branch budget and a given “proper” state of distribution.

Reduced to its very simplest terms, the task of the Stabilization Branch is to determine the inflationary or deflationary gap in the absence of stabilizing action and to decide what level of taxes or transfers is required to close it. Beyond this, many complications enter into the conduct of stabilization policy, but they need not be considered here. By its very nature, the budget of the Stabilization Branch consists of either transfers or taxes. *The function of taxes and transfers* in this third case is *to check inflation or deflation*. The budget of this branch is always unbalanced except for the very special case (applicable in the classical system or at one particular point of the cycle) where a zero level of taxes and transfers is called for. Also, note that taxes or transfers will be distributed in line with the “proper” distribution established by the Distribution Branch, i. e., they will be proportional to income after adjustment by the Distribution Branch but before taxes of the Service Branch.

4. Simultaneous Determination of Sub-Budgets

Our brief description of the three sub-budgets shows how each branch pursues *its* objectives on the assumption that the others accomplish *theirs*. In other words, the three sub-budgets are determined as parts of a simultaneous system.

The underlying system may be defined in a set of equations, but its general structure will be evident from what has gone before. In the budget of the *Service Branch* we determine (or attempt to do so) the satisfaction of public wants and their cost allocation on the basis of individual preferences. In other words, we have demand functions for such wants based on preferences, relative prices of goods supplied in the satisfaction of various (public and private) wants, and a given state of distribution¹. The Service Branch

1 The state of distribution given for this purpose will include earnings plus Distribution and Stabilization Branch transfers, minus Distribution and Stabilization Branch taxes.

budget, as noted before, will be usually balanced. In the budget of the *Distribution Branch* we determine the distribution of earnings at full employment and decide what adjustments should be made to obtain the “proper” state of distribution. The resulting tax-transfer system again leaves us with a balanced budget. In the budget of the *Stabilization Branch* we determine total earnings at full employment and current prices. We then determine what total demand will be in the absence of stabilization and find the inflationary or deflationary gap that need be closed¹. Given the marginal propensity to consume with the “proper” state of distribution, the necessary level of taxes or transfers is determined and distributed accordingly. As noted before, the Stabilization Branch budget, if operative at all, will consist of taxes or transfers only and hence has either a deficit or a surplus.

5. Consolidation of Sub-Budgets

After the three sub-budgets have been determined in this fashion, each might be put into effect by itself, but this would be a clumsy administrative procedure. While the goods and service expenditures of the Service Branch budget must be carried out as such, the taxes or transfers of the Service, Distribution and Stabilization Branches might be cleared against each other, so that each individual will make one tax payment or will receive one transfer check only. The consolidated or administered budget will show a net deficit or surplus equal to that of the budget of the Stabilization Branch.

The consolidation of the sub-budgets into a net plan facilitates administrative procedures, but we must not overlook the fact that the consolidated budget thus determined is merely a product of clearing, and that it hides the more important underlying policy objectives which are brought out only in the determination of the sub-budgets. For instance, taxes of the Service Branch might be allocated in a more or less proportional fashion, such as would be the case *if* the income elasticity of individual demands for public wants was typically unity; and the tax-transfer scheme of the Distribution Branch might transfer income from high to low brackets if it was held desirable to achieve a certain degree of equalization. The tax structure of the consolidated budget would then still be progressive but less so than for the Distribution Branch alone; or it might express a quite different set of subplans.

B. The Division of Functions Reconsidered

I now turn to the second part of my paper, dealing with the advantages of, and objections to, the suggested division of functions.

1 Total demand includes (1) outlays on consumption for private wants with the given “proper” distribution of income, (2) outlays on private investment, and (3) outlays on the satisfaction of public wants or, if you wish, goods and service expenditures by the Service Branch. A complication which arises from the distinction between current and capital expenditures (the latter one accounted for on a use basis in the budget of the Service Branch, but on an expense basis in the budget of the Stabilization Branch) may be overlooked here.

1. Separation of Service and Stabilization Branches

Let us begin with the separation of functions between the Service and the Stabilization Branches. The assumption of full employment for purposes of planning the budget of the Service Branch implies that the allocation of resources must be viewed within the context of a given total resource use. Since the optimum level of resource use can be established by the Stabilization Branch without interference in the allocation of resources between private and public uses, it stands to reason that this allocation should be determined on the basis of a full employment income.

In more practical terms, our separation of functions has the advantage that it rules out ditch digging to check a depression, as well as curtailing teachers salaries or essential public works to check a boom. Also, it has the advantage of permitting Mr. O, whose preferences for public wants are low, to support fiscal measures against depression; and of permitting Mr. Y, whose preferences for public wants are high, to support fiscal measures to check a boom. In other words, the indicated separation helps to eliminate distortions in the politics of fiscal policy.

This, everyone will agree, is all to the good, but various objections have been raised to such a separation. A first group of objections is of a pragmatic sort and may be accepted readily without denying the essential principle. If the longer run program of public capital formation can be determined in advance, it may then be timed to compensate for cyclical variation. No serious inefficiency will arise since the adjustment will introduce difference in short term timing only. If a serious depression is permitted to arise, public works rather than transfers will be needed for reasons of social morale. If the problem is one of meeting regional rather than general distress, public works rather than transfers may be called for. These and other exceptions must be granted and require qualification of our principle. But they do not invalidate the basic proposition that resource use for the satisfaction of public wants should be planned in a full employment context unless such special circumstances intervene.

Professor *Samuelson*, however, has raised certain objections which, if correct, would invalidate this basic proposition. Put in somewhat exaggerated terms, the argument is that the very occurrence of a depression is evidence of the fact that there results a shift in individual preferences from private to public wants. Since the want pattern must be related to the allocation of resources at full employment, any decline in expenditures for the satisfaction of private wants must be taken to reflect an increase in the demand for the satisfaction of public wants¹. This being the case, a counter cyclical movement in public goods and service expenditures (i. e., in the size of the Service Branch budget) is called for.

Let us apply the argument first to a classical system where *Say's* law holds sway. Also, let us suppose that the Service Branch problem is solved

1 See *Paul A. Samuelson*, "Principles and Rules in Fiscal Policy: A Neo-Classical Formulation", in *Money, Trade and Economic Growth, Essays in Honour of John H. Williams*, Macmillan, New York, 1951, p. 160.

nicely so as to reflect rather fully the individual preferences for public wants. In such a system, changes in the structure of demand might occur, resulting in a vote for an increased Service Branch budget on the one side, and in a decrease in private expenditures on consumption or investment on the other. In such a system, a decline in the need for certain public wants (such as defense) will be reflected in increased outlays on other public as well as private wants. Allocation is clear-cut, but there would be no problem of stabilization policy.

Now consider a system plagued by changing liquidity preference and rigidities, in short a system where depressions and inflations may occur. Here stabilization policy will be called for, and here a decline or increase in expenditures on the satisfaction of private wants must be interpreted quite differently. A decline in this demand now does not signify a structural change in preferences from private to public wants within the context of a full employment income. Rather, it reflects a change in effective demand due to an unintended (in the micro sense) shrinkage of disposable income. There is no reason to expect in this case that a decline in expenditures on the satisfaction of private wants would (in the case of perfect public want determination) result in a vote for an increased Service Branch budget out of a full employment income; and hence there is no *a priori* reason for increasing the size of the Service Branch budget. As we have seen, the stabilization function may be met by operation of the Stabilization Branch.

Professor *Samuelson*, in presenting his "neo-classical synthesis", has emphasized that the problem of unemployment and inflation may be handled more or less readily, in principle at least if not in practice, so that we may again devote our attention to the more traditional problems of efficiency in resource use. This is correct, but I submit that the problem of efficiency is not as simple in the neo-classical system as it was in the classical case: The system, as it were, has lost its innocence, even though the problem of unemployment and inflation can be solved. The very need for stabilization policy (and the choice among alternative approaches thereto) means that the division of the product between consumption and capital formation (the rate of growth) becomes a matter of public policy decision, whereas in the classical system, it was determined by the market¹.

2. Separation of Service and Distribution Branches

I now turn to the separation of functions between the Service and the Distribution Branches. This procedure, shared by *Wicksell* and *Lindahl*, follows from our view of the Service Branch as providing for public wants in response to individual preferences. It is analogous to the assumption of given distribution made usually in discussing the efficiency of resource use in the private sector. Conclusions regarding the efficiency of allocation are necessarily

1 In response to this it might be argued that an equality between planned saving and investment might always be secured through monetary policy. This however, is to carry the assumptions of the neo-classical synthesis too far. Moreover, it would limit fiscal policy to balanced budget changes in the level of expenditures in response to changes in the *structure* of demand rather than in *aggregate* demand, the latter being eliminated by monetary policy in the first place.

based on the assumption of given effective demands and given states of distribution. Similarly, efficiency in the determination of public wants can be judged only on the basis of a given distribution of income and hence a given state of “true” effective demand for the satisfaction of such wants.

Viewed on the more practical level of fiscal politics, this division of functions has the advantage of permitting Mr. Y, who rates public wants high, to vote for a large Service Branch budget even though he does not favour income re-distribution and vice versa for someone who favors distributional adjustments but opposes a large budget in the Service Branch. If the two functions are distinguished properly, the two tax plans are free to follow different patterns, and more efficient budget determination becomes possible.

Again, there are certain objections which may be raised against this separation of functions. A first objection points to the fact that goods and service expenditures of government frequently involve programs which are not distributionally neutral, but whose very purpose it is to favor particular groups. To typify this situation, let us consider the case of free hospitals for the poor or public subsidies to low cost housing. Such programs may be interpreted as composed of (1) a transfer payment to low income people and (2) a requirement that the proceeds are used to purchase certain services, i. e., medical facilities or housing. As far as (1) is concerned, we have merely the re-distribution function which ought to be taken care of in the budget of the Distribution Branch. But (2) introduces a new feature for which so far there is no place in our theoretical framework.

You will recall that we have defined public wants as wants which are not subject to the exclusion principle; but that the problem of the Service Branch nevertheless remained one of satisfying these wants in line with individual preferences and consumer sovereignty. The idea of a subsidy in kind – and this is what is involved in (2) – is a quite different matter. Here as in the case of sumptuary taxes public policy aims at interference with individual preferences; and frequently, such interference carries redistributive implications. I do not wish to say that interference of this sort is always bad, and that it may not at times result in an improved allocation of resources. The apparent willingness of the public to provide for a second car and a third icebox prior to assuring adequate education for their children is a case in point. However, this seems to me a special problem which should be distinguished from the more general theory of public wants. Where interference with individual preferences *is* desired, our schema must be expanded. Such wants – which for lack of a better name I refer to as merit wants – may be thought of as provided for in a separate branch. Here a strict separation from the Distribution problem does, indeed, become untenable.

A second objection to the separation of Service and Distribution Branch is more serious and comes closer to endangering the essential content of our scheme. We have noted that any concept of efficiency in resource allocation

in response to given preference patterns must relate to a given state of distribution, If distribution is arbitrary, there is little point in adapting resource allocation to effective demands. In line with *Wicksell* and *Lindahl* we have therefore based our formulation of the Service Branch on the assumption that there exists a “proper” state of distribution. Now, it might be argued that this is an artificial distinction. In dealing with the satisfaction of private wants, a political process is required to establish the “proper” state of distribution, but from there on in the job will be done by the market. In dealing with the satisfaction of public wants a political process is needed not only in establishing the “proper” state of distribution, but also in translating individual preferences into the Service Branch budget. Since a political process is needed at both stages, it might be concluded that there is no point in distinguishing between them.

There is considerable force to this argument, and I cannot brush it aside. Still, it is my judgement that a distinction between the two problems – between the two political processes, if you wish – remains useful. This I believe to be the case because the problem of the Service Branch, seen on the basis of a given distribution of income, may be handled by analogy to the market process. Individual preferences for alternative uses of one’s resources include public as well as private wants. The difficulty is essentially one of getting people to *reveal* their preferences. Once these preferences are revealed, or an approximation thereto, a solution analogous to that of market does exist. The problem of determining a “proper” state of distribution, on the other hand, defies the tools of economic analysis altogether. Preferences with regard to the state of distribution are a more complex matter. The problem cannot be solved by analogy to the market, and little can be said about how the fiscal system should provide for it. *Samuelson’s* conclusion that a solution exists but the problem is how to find it can be applied more readily to the case of the Service Branch than to that of the Distribution Branch.

3. Separation of Stabilization and Distribution Branches

It remains to consider the separation of functions between the Stabilization and the Distribution Branches. Again, there is an obvious advantage if the appropriate use of fiscal policy as a stabilization device is not interfered with by fears or hopes that such changes will carry the by-product of distributional adjustments. Similarly, there is an obvious advantage if distributional objectives can be formulated without having to allow for the possibility that one or another state of distribution may (in the absence of appropriate adjustments by the Stabilization Branch) result in a higher or lower level of demand. Thus, the case for or against a progressive tax structure may be decided on its own merits and independent of economic conditions. This is to be contrasted with a position which argues as a matter of stabilization policy, that taxes ought to be progressive in the slump and regressive in the boom.

Again, some qualifications must be allowed for, but there appear to be no basic objections in this case. Possible effects of distributional changes upon

the level of output at full employment are a different matter and must, of course, be taken into account.

In concluding, let me add that I do not recommend translation of this multiple budget plan into immediate legislative and administrative practice. While some practical applications may be possible, my primary concern here is with the components of a normative theory of the public household. The construction of such a theory, I believe, remains the heart of what is hopefully referred to as the Science of Public Finance; and it need be straightened out before we can go very far in being helpful on the practical level.