PUBLIC EXPENDITURE AND ECONOMIC GROWTH: SOME THEORETICAL REFLECTIONS

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Introduction :

Students of the subject say that the theory of public expenditure is still in its infancy. I take this to mean, among other things, that the science of public finance has not yet established useful generalizations about the size and character of public expenditure in various countries at various times. If this is so, it should be no surprise that the theory is still an infant. Public expenditure is intimately connected with the size and role of government in society, and any theory or theories that we might develope must consider the interaction between government, the economy, and social and political institutions. Because of this, and because of the inevitable differences between the historical experiences of different countries, we should never expect to develop anything more than broad generalizations which, together with the detailed institutional and historical knowledge of different countries, permit us to "take a view" of the phenomenon of public expenditure. I do not foresee the time when we will have a theory which gives us actual predictive power for the future course of public outlay in any country.

Nevertheless, there does seem to be a phenomenon to be explained. In Western countries and in other industrialized societies there has been a persistent growth in the public sector. In many countries public expenditure has grown faster than has the expenditure on and production of private goods and services. This widespread tendency, noted in 1890 by Adolph Wagner, has been accompained by an increase in the variety as well as the size of public outlay. In most Western societies, government is a major producer in the fields of transportation, education, health, communications, sanitation, social welfare, credit, banking, and insurance,

not to mention the more ordinary functions of law enforcement and administration.

Now, does the economist has anything to say about these phenomena? Do we have anything to say in addition to what might be said by the political scientist, the sociologist, or the historian? If one examines the history of attempts to explain the growth of public expenditures, one soon finds that the explanations developed make little use of the special apparatus of economic theory. Most writers rely upon rather general and vaguely expressed economic propositions, or upon empirical generalizations.

Thus it is, for example, that we have Adolph Wagner asserting a "law of increasing state activity", based upon hardly more than a number of empirical observations of countries in which he found public expenditures growing more rapidly than private activity. To be sure, Wagner gave some reasons for the operation of such a law. He felt that the increasing complexity of life accompanying industrialization and urbanization necessitates large increases in government activity in the areas of administration and law enforcement. He also argued that technical developments favor the growth of monopoly and require the development of public rather than private provision of goods and services in those area where monopoly poses a threat. In addition, in areas where the social benefits of production are large, but not susceptible of economic evaluation, one might find the state rapidly expanding its activities. Examples of this latter type of activity are education, sanitation, and public health[1]

There is much merit in Wagner's arguments. Nevertheless, one is left with the feeling that his arguments do not explain the increase in state activity. For one thing, even though the complexity of economic life increases in the process of industrialization and urbanization, there is no reason to believe that administration and law enforcement should necessarily be subject to diseconomies of scale. In fact, urbanization and the concentration of population may even allow for more efficient administration and policing. Some of the technical innovations which accompany industrialization and which allow great increases in output per per head in the economy are also innovations which might be used to

1) A Summary of Wagners arguments may be found in A. Peacock and J. Wiseman, **The Growth of Public Expenditure in the United Kingdom,** Princeton, 1961, pp. 16-20.

enhance the technical efficiency of government. An example of this is the use of electronic computers by many levels of government in the United States for the processing of records. Another example is the use of modern communications equipment by urban police forces.

Wagner's other arguments are equally unconvincing. Even though technical developments may favor large scale productive units, they do not necessarily favor or foster the growth of *public* monopolies. It is true that many countries provide electric power, water, communications, and transportation services with public enterprises; but other countries (the United States for example) often allow private monopolies to do the job, subject to public supervision and control. Finally, even where activities create values which cannot be fully captured in the market, such as in education, health, and sanitation, we still find private economic activity. A close examination of many countries would find, I am sure, public and private entities operating side by side in many of these fields.

So, the question remains. Why the seemingly persistent growth in public expenditure either in proportion or more than in proportion to private activity? Modern writers, I believe, have not improved greatly upon Wagner. Most of what they have said boils down to a list of more or less plausible reasons. Industrialization and urbanization create problems which simple societies do not have: housing, crime, pollution, traffic, etc. In addition, economic instability creates the need for public programs of employment and income stabilization. The alienation of the individual from the farm and from the family creates a need for public programs of welfare and pensions. The rise in per capita income increases the demand for services of all sorts, including some of which are provided by government. (John Kenneth Galbraith, recall, has a "theory of social balance", which asserts a complementarity between the consumption of public and private goods.) The physical and biological sciences have given us discoveries which have been exploited by the state. The social sciences, with their orderly methods of investigation, have uncovered many social problems and have revealed the magnitude of others. These discoveries have stimulated public solutions to social problems.

The above list of causes can be extended, but I am not of a mind to do so here. I am not even disposed to argue that they are wrong. Indeed, I think that most of them have some merit. What bothers me about them, and about Wagner's work, is that they do not go much

beyond a listing of causes. There appears to be a lack of an orderly theory, based upon a general framework rather than upon a simple listing of causes.

As I intimated above, an orderly theory may not be possible. Nevertheless, it seems to me that we ought to try. Economists have a special box of tools —to use a phrase favored by English economists— and we ought to find out if it is possible to apply these tools to the problem of public expenditure growth. The tools, of course, will never be enough. I don't see, for example, how they can bu used to explain the fact that in the area of broadcasting and rail transportation some countries have chosen the path of public monopoly while in others private enterprise has been used. These kinds of choices can only be explained by reference to political and sociological forces. Nevertheless, concepts near and dear to the economist, such as "supply" and "demand", are very broad, and permit an orderly classification of causes which can be applied in many areas of social analysis. For the problem at hand, these concepts are especially useful. As we shall see, they not only permit us to better understand the dynamics of growth in the public sector, but they also help to pinpoint to role of social and political forces. We therefore begin our analysis with a discussion of the factors affecting the demand for public goods.

The Demand For Public Goods :

Although it may be an exaggeration for public activities such as national defense and the administration of justice, I think it fair to say that there exist demand functions for most goods provided by government. By "demand function" I mean what economists always mean: the relation between the quantity of a good demanded, its own price, the prices of substitutes and complements, income, population, tastes and preferences, and perhaps the level of technology in the community. Most governments goods resemble private goods in the sense that they either directly satisfy wants through consumption or that they combine with other goods in the production process to satifsy wants indirectly.

In respects to demand, I can see no essential distinction between goods and services provided by government and goods and services provided privately. We are accustomed to making such a distinction because certain goods, such as police protection, schooling, sanitation, public health, etc. are usually supplied to users by government at a zero

or near zero price. It is also true that many public goods cannot be supplied privately because there is no way of making a market for them. That is, there is no way of isolating a transaction between a buyer and a seller, since selling the good to one buyer necessarily involves selling the good to the whole public. A prime example of this sort of problem is the lighthouse. Once the light beam is provided, there is no way of confining it to particular ships. All may use it regardless of who might be willing to pay for it. A moments reflection, however, will reveal that this consideration in no way contradicts the assertion that, at least in principle, it is possible to conceive of an ordinary demand curve for most public goods. If it were possible to market these, goods, we would note that their demand curves would slope negatively with respect to their own prices, that the curves would shift to the right with increases in the prices of substitutes, and that an increase in income would shift the curves to the right or to the left depending upon whether or not the goods are ordinary or inferior goods. The demand for these goods would also be affected by changes in population, tastes and preferences, and technology, just as with goods sold through private markets.

Why do I wish to emphasize the similarities between public and private goods rather than the differences, as is usually the case in discussions of the public sector? I do so because I think such an emphasis gives us some perspective regarding the evolution of public expenditure. Economic growth entails an increase in demand for all sorts of goods. This increase in demand, growing out of increasing per capita income, changes in population, changes in technology, and changes in tastes and preferences as societies become richer, affects the quantity, quality, and variety of goods produced by both the public and the private sector. Indeed, if it were not for the special problem of marketing some goods, we might find that much of what we have come to call the public sector would, in fact, be included in the private sector. Thus, communications, public health, transportation, police, fire protection, etc. might be provided by private rather than public entities. The important point is that most of these services in one form or another, would be provided. Wagner's law of increasing state activity is therefore, at least partly, no more than a reflection of the inability of markets to supply certain goods through the private sector.

As noted above, Wagner himself recognized this fact. But, I believe that there are additional insights which can be gained from viewing the demand for public goods as essentially similar to the demand for privately

produced goods. Not all goods produced by the government, after all, suffer from the marketing problem mentioned above. In fact, we find that many of the goods provided by government are also provided by private entities. One only has to think of education, health services, police protection, and garbage collection. In these areas we often find private and public enterprise existing side by side.

Nevertheless, there does exist a special bias in favor of public enterprise. This bias flows from the simple fact that public goods are ordinarily offered to to consumers at a price well below cost, Indeed most public goods are offered at a zero or near zero price. This simple fact has, I believe, several important implications. The first is that private suppliers of identical goods are always at a disadvantage. Unless they distinguish their goods with respect to quality or better availability, they will find themselves unable to fill more than the residual market left over from the inability of the government to supply all the goods demanded by the public at the low price fixed for these goods.

Another important implication of zero or near zero prices for goods relates to the impact of inflation on the relative size of the public and private sectors. A proportionate increase in the money prices of all goods and services should, according to the postulates of economic theory, leave the composition of demand for those goods and services unchanged. But, if government produced goods and services are included in the consumption plans of the public, then an increase in the price level of privately produced goods and services should promote a relative increase in the demand for the output of the government sector. As a concrete example, consider the private automobile. The total cost of using the automobile is made up of two parts. One part is the capital and running costs of the services provided by public streets and roads. Now, assume a general rise in the price level, affecting not only the capital and running costs of automobiles, but also the price of competing forms of transportation such as railroads, airlines, etc. Because the full cost of automobile travel is not absorbed by automobile owners, the relative price of automobile travel will fall. The demand for travel with private cars and, of course, the demand for streets and roads will increase. As a result, we should find the public sector under pressure to expand relative to the private sector.

A similar argument can be made respecting many other government functions. Inflation encourages the substitution of public for private police services, education, recreation, health services, fire protection, sanitation,

garbage collection, and many other items. It does so because the prices charged by government to the users of these services are fixed at zero, or at least substantially below cost. As a result, the relative price of government goods falls during periods of general inflation, and the demand for government goods, quite naturally, increases relative to the demand for privately produced goods.

Now consider a related point. As we know, economic progress entails an increase in productivity — output per worker. Most economists believe than productivity grows most rapidly in the goods producing sector of the economy. If this is true, and if productivity growth is not accompained by a proportionate fall in the prices of goods, then we should find money wages in the goods producing sector increasing in order to provide the increase in real wages implied by the increase in labor productivity. Now, the service sector competes with the goods producing sector for factors of production, particularly labor. This being the case, the service sector must also increase money wages in order to hold labor or to attract additional labor. The problem is particularly urgent for the service sector if economic growth is accompained by a shift in the composition of demand towards services and away from goods, as seems to be the case in most advanced countries. In any event, because of the relatively slow growth in productivity in the service sector, the increase in wages should put upward pressure upon the prices of services. Of course, it is precisely in the area of services that the public and private production are most likely to compete. The upward pressure on service prices in the private sector is therefore likely to have the same effect as general inflation, that of shifting the demand curve for public services to the right at the expense of the demand for services from the private sector.

The Supply of Public Goods :

The above argument was designed to show that a simple application of the law of demand is capable of explaining some of the pressure that exists for expansion of the public sector in the economy. Let us now look briefly at the supply side of the problem. By and large, the supply of public goods and services at any moment of time is determined by government revenues, the number of productive factors the government can buy with its revenues, and the productivity or efficiency of those factors under public management. It does not seem possible to draw an

ordinary supply curve for government output, since government agencies rarely produce for a profit and seldom depend upon sales for their revenues. It follows that the supply of government goods is not responsive to the own prices of those goods. Hence, if it is at all permissible to draw a supply curve, we must give it a vertical slope. For most government goods, however, observable price quantity combinations on the supply curve approximate a zero price.

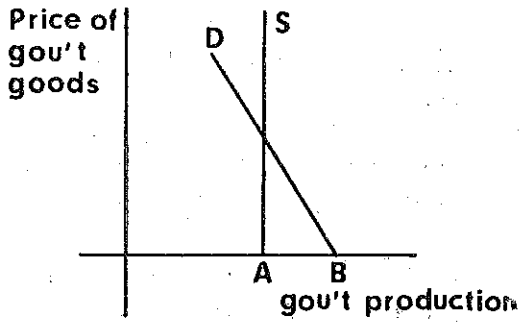
What are the influences which affect the position of this supply curve? The ability of government to impose taxes and issue debt, or new money, is one obvious set of factors. Depending upon how taxes are collected, an increase in national income will have the effect of shifting the supply function to the right - more rapidly, of course, if the country uses a progressive income tax. If part of the tax revenues are used to pay off debt or reduce the money supply, the supply curve will shift less rapidly. If government depends heavily upon property taxes, which are relatively inelastic to income, the rightward shift or the supply function will be further retarded. An increase in tax *rates*, of course, accelerates the rightward shift, provided that the increase in revenue is not used to pay off debt or to reduce the money supply.

Generally speaking, then, we should expect the taxes generated by economic growth to shift the supply functions of government goods and services to the right. Nevertheless, this shift will be retarded by one of the other factors associated with economic growth - the rise in labor productivity. If, as we have argued, productivity growth in the private sector is accompanied by an increase in real wages, and if the increase in real wages is accomplished through an increase in money wages, then wages everywhere in the economy will be affected. Since government competes for labor with the private sector, it too must pay higher money wages in order to attract and retain workers. If the productivity of labor in government agencies lags behind that of the private economy, as it is reputed to do, then the cost of government output will rise. For a given level of revenue, this rise in costs will mean a leftward shift of the supply curves of government oupput. This leftward shift can be prevented only by an increase in tax rates, or an increase in government debt (including money issue).

Dynamics of the Law of Increasing State Activity :

We are now in a position to say something about the dynamics of the growth of government expenditure. Let the pressure for growth in

government goods and services be l function of the *excess demand* for those goods and services. We can define this excess demand as the difference between demand and supply at the going price of government production to the users of that production. For convenience, let us assume that this price is zero. In the figure, excess demand is measured by the distance AB on the abscissa.



It is possible for the supply curve to cut the abscissa of the figure to the right of the demand curve. I would take this to be an unusual case, for it implies that government is supplying the public with an excess of goods and services. More normally, I would expect the supply curve to cut the abscissa to the left of the demand curve forces which produce a rightward shift of the demand curve are stronger than the forces which produce a rightward shift of the supply curve.

Consider the arguments given above. Economic growth involves an increase in demand for all goods and services, except those which are inferior with respect to income. On the average, aggregate demand will rise in proportion to the increase in per capita income and population. It is not readily apparent that the demand for goods produced by government should rise more rapidly than the demand for goods produced in the private sector. The reason this appears to happen is that public goods are marketed under different conditions than are private goods. As we have noted, certain social goods - the lighthouse example - cannot be sold through private markets. Hence, if they are to be produced and sold at all, it must be done through the gevernment. To this class of effects, we can add those arising out of the fact that the prices of government goods and services are usually fixed at or near zero. This

means that the increase in labor productivity and wages in the private economy will drive up the prices of private services relative to the prices of services provided by government, causing the demand for services from the government to increase at an accelerated pace. Indeed, private producers of similar services may be driven out of business, in which case demand will shift over to the output of the public sector, giving it an extra stimulus. Finally, if economic growth is accompanied by inflation, the relative price of government output to the users of that output will again fall, further shifting demand in favor of government.

In general, then, we should expect the demand for public output to grow more rapidly than the demand for private goods and services. By the same token, it should also grow more rapidly than income and production in the community. What about supply? This is much more difficult to speculate about. If economic growth is accomponied by only minor changes in tax rates, it is probable that the supply of government goods will grow less rapidly than the demand for those goods. Not all taxes are progressive with respect to income, and the amount of debt and new money a government can issue is ordinarily limited by community attitudes. In addition, the rise in wages paid by the government as a result of increasing productivity in the private sector tends to retard the rightward shift of the supply function. Therefore, except for periodic large increases in tax rates and changes in the community's attititudes toward government debt, we should expect a relatively slow shift in supply.

The above argument boils down to the following expectations. First, economic growth should stimulate the demand for government services more than it stimulates the supply. As a result, the *excess demand* for government services should increase as a consequence of economic growth. Since government does not ordinarily sell its output to users, this excess demand cannot be eliminated by an increase in the own prices of government goods and services. Instead, pressure will be brought to bear upon the agencies and organs of government to relieve the pressure through an increase in supply. To some extent, we should expect this pressure to be relieved by increases in tax rates, new government debt, and new money. But these increases will afford only temporary relief, since the forces of economic growth will continue to grind away, again opening up the gap between demand and supply. Indeed, to some extent these measures are self defeating. An increase in taxes may reduce the supply of private effort, thereby shifting the demand for private

goods over to the public sector. In addition, an increase in debt also leads to an increase in the need to service debt. Hence, part of the increase in taxation will go to pay interest costs, not the factors of production needed to produce government goods and services. Finally, to the extent that debt and new money lead to inflation, we may find a further acceleration of the demand for public output, in line with mechanism discussed above.

It is evident that democratic and representative political institutions favor the continued response of government to the excess demand for its services. It is also evident, however, that legislatures and government must pay attention to public attitudes on debt and taxes. There may therefore be periods in which government expenditures respond only slowly to the pressures exerted by excess demand gap. In other periods, we may see sudden spurts of public expenditure, as the barriers to increased taxes and debt suddenly come tumbling down. Such spurts are likely to to happen during national crises, such as war[2]. In any event, whether national crises occur or not, one should expect government expenditure to continue to grow. Whether or not this growth is in proportion to general growth in income and production, or more than in proportion, obviously cannot be predicted by the theory outlined here. The theory only outlines the economic mechanism giving rise to the stimulus for increased government spending. It does not give us information regarding the factors affecting the political response to the stimulus. That is a problem which can be attacked only with the methods of the other social sciences.

Concluding Comments :

There are obvious deficiencies to the theory outlined above. As indicated earlier, it does not really grapple with the question of why certain goods and services are marketed by government when, in fact, private enterprise can also do the job. To answer this question, we would probably have to rely upon *ad hoc* explanations. Another deficiency is that the theory says nothing about the probable timing of the response of government to an excess demand for its services. Again, I think that *ad hoc* explanations are probably necessary. These explanations must take in-

2) See Peacock and Wiseman on this point. These writers call the sudden increase in revenues and expenditure the "displacement effect." Op. Cit., Chapters 2-4.

to account special political, social, and historical circumstances in each country.

Nevertheless, I still believe that I have said something. Using the apparatus of economic theory, I have shown how market pressures build during the process of economic growth and how the special conditions under which government output is marketed lead to extra large pressures upon government to expand its expenditures, particularly in those areas where government has already established itself as a producer. My theory is broadly consistent with the behavior of public expenditure in several countries. Indeed, one might argue that it is little more than a restatement, in analytical terms, of an explanation given by Peacock and Wiseman of the growth of public expenditure in the United Kingdom (footnote 2). Nevertheless, as must be painfully evident, much work would be required to spell out the theory in more detail and to verify it with empirical methods.