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# Economic Knowledge and Government Responsibility

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I welcome the opportunity to spend an hour in an academic atmosphere where it is fitting and proper to engage in abstraction and to turn the world upside down without regard for what comes unstuck. It is not often that I have an opportunity to shed mere practical affairs and to speculate. And, of course, I assume that what I will have to say will be understood as speculation prompted by the ancient and generous spirit of academia and not as a program of immediate action.

You have invited my observations on "Economic Knowledge and Government Responsibility." I must immediately confess my inability to present you with a thoroughly articulated and carefully reasoned statement--a statement which would at once give unassailable content to these concepts, and which would spell out their linkage. The older among you will, perhaps, be inclined to forgiveness: from the younger among you who expect (as you should) on-target performance, I ask indulgence.

Let me indicate to you the way in which I have organized my observations. My intention is <u>first</u> to discuss the most controversial component of the theme--Government Responsibility. I have taken this to mean Government responsibility in the economic sphere. I will discuss this component of the theme under what seems to me to be three convenient headings. I will <u>then</u> turn to some notes on Economic Knowledge and attempt, as far as I am able, to treat what relevance economic knowledge could, or should, have to Government responsibility.

I

The issue of "Government Responsibility" in the economic sphere belongs to a very durable debate; durable both in terms of the toughness of the issues and in terms of the length of time over which it has taken place. The contestants in this debate are currently the Liberals and the liberals. I do not intend this as a puzzle. I am just not able to speak out the fact, since I do not share Victor Borge's talents for vocal punctuation, that I mean one liberal to be capitalized and the other not. To introduce vocal notation, I will speak of the "new liberal" and the "old liberal." This is a matter of notation only and is not an assessment of their relative content: the terms "old" and "new" are not intended to convey my feelings about the relative freshness or mustiness of these positions.

The arguments of the "new liberal" on Government Responsibility in the economic sphere are topical. Essentially, they deplore what they see as a great disparity between publicly and privately rendered services. That is, they deplore "Conventional Wisdom's" seeming inability to be distressed about the public preference for orchid Cadillacs rather than public schools. They propose a "Redressing of Balance" between the public and private sectors through an increase in governmental activity. I think I can be fair (and safe) in having you think of these arguments as being summarized in Professor/Ambassador Galbraith's book, The Affluent Society.

The arguments of the "old liberal" are less topical; at least less topical in their traditional form. (It is rather amusing to note here, parenthetically, that Classical Marxism is not the only politico-economic statement to suffer "revision"). It will be worth a few moments of our time to recall the "old liberal" position on Government Responsibility in the economic sphere. The best source of this position seems to me to be contained in Adam Smith.

Many interpreters of Smith equate his argument for laissez faire with his theory of "the invisible hand," that the individual ".... intends only his own gain, and he is in this.... led by an invisible hand to promote an end which was no part of his intention." But Smith's argument for laissez faire and a "social harmony" resulting from the guidance of the invisible hand of self-interest was an exercise in "conjectural history." That is, it was an exercise in what would have been in the context of ideal institutions. Smith's practical plea for laissez faire--if you will, the operational content of his plea--was quite simple. It was dictated by his extreme skepticism of the beneficence of strong government. Under laissez faire there would be an absence of conditions under which the Government could impose, under the auspices of powerful special interest groups, "mean and malignant expedients" on the community in the guise of the public good. Laissez faire, in short, would make the power of government unavailable as a means to buttress monopoly.

Smith's reading of "actual history," his look at the prevailing economic organization of England and the Continent under the "mean and malignant expedients" of government-supported mercantilistic policy, convinced him that bending the power of government for human good, and reforming it to this end, was a very poor bet. The best course was to limit its scope.

If governmental systems of preference and constraint were removed, Smith argued in one of the finest passages in the Wealth of Nations, then

> The obvious and simple system of natural liberty establishes itself of its own accord. Every man, as long as he does not violate the laws of justice, is left perfectly free to pursue his own interest his own way, and to bring both his industry and capital into competition with those of any other man, or order of men. The sovereign is completely discharged from a duty, in the attempting to perform which he must always be exposed to innumerable delusions, and for the proper performance of which no human wisdom or knowledge could ever be sufficient; the duty of superintending the industry of private people, and of directing it towards the employments most suitable to the interest of the society.

Adam Smith's "obvious and simple system of natural liberty" can hardly be described as being in effect in any modern-day country. People are not perfectly free to pursue their own interests and the sovereign has certainly not been discharged from the duty of "superintending the industry of private people." So, we are currently in the position of being rebuked by both sets of liberals--by the "old liberal" for going too far and by the "new liberal" for not going far enough. It is a case of being twice damned.

There is little prospect for repentance from either the "old" or the "new liberal" and only a very small chance that we could convince either that they are indulging in grievous error. I suggest, then, that instead of resolving the points of difference between these two, we examine the role government has evolved--devolved may be a better term--in the economy of the modern state.

We can think of government's economic role as it exists in our country as being, roughly, a tripartite one: Government enters the market place as a "demander" of goods and services; Government acts as an "equilibrator" of the system of markets which make up the economy; Government acts as a "regulator" of markets. These functions are, of course, not distinct since Government purchases can act to equilibrate or disequilibrate a system of markets. But with a mental footnote to the effect that these functions are linked up, let us examine them as if they were distinct.

1. Government is a "demander" of goods and services because we as citizens exhibit both public and private wants. As textbooks of economic principles are given to putting it, we are entitled to think of private and "social" consumption. Private wants and private consumption can be satisfied in the framework of the market. The consumer's bid for a good or service is an index of its value to him,

and a clue to the producer who would undertake to assume the costs of producing the good or service. Public wants and social consumption cannot be so attended to.

There is, for example, no way of privately producing and selling units of national defense, nor is there a way of marketing law-making and enforcing services, to name two Government functions no one would suggest as appropriate for private enterprise. (The fact that our Government passes defense work on to the private economy in the form of contracts does not change the fact that the scope and character of defense expenditure does not grow out of the private market system).

In the case of health, welfare, and education, on the other hand, it is technically possible, using insurance schemes and family units, to have the market determine how much we shall consume, individually and in the aggregate. But social feasibility is another matter. Partly on the grounds that the benefits from these services spread beyond immediate users and partly on a purely humanitarian basis, government participation reshapes the scope and, in some degree, the character of health, education and welfare services. This is done by using tax revenue to cover transfer payments to recipients of such programs and to produce free or heavily subsidized health and education facilities. By and large it is the difficulty of financing that draws government deeply and importantly into such functions.

There are still other government services where fees, tolls, or quasi-prices are or can be used to simulate the effects of a market system. The charge made is intended to be roughly proportional to the amount and character of the service provided. Streets and highways, water and waste disposal are huge items in over-all government spending that fit into this category.

Government responsibility can be said, therefore, to extend to functions for which the market system (1) cannot define an appropriate scope or character, or (2) does not have the distributional characteristics that appease our social conscience, or (3) can be replaced with a simulated market system based on fees and public charges.

The problem, of course, is to determine just where to draw the line and to decide in precisely which areas the market mechanism fails to reflect preferences accurately and should be dispossessed. We have gone well beyond providing only those goods and services through government whose justification on grounds of the incapacity of private markets is indisputable. There is no way, at least until one of you delivers us a "General Theory of Economic Welfare," to isolate individuals' true preferences for social consumption. Until then, there is no way to determine how much of our scarce resources should be diverted to production of social goods except by the voting mechanism. Aside from problems on the theoretical level--what voting process is best in some sense--the voting process has the undesirable property of forcing the outcome of majority rule on all. This means that you and I may be forced to accept certain goods and services in quantities and at taxes which may not be satisfactory to us. The market, on the other hand, fractionalizes issues of this sort. The market enables each of us to choose or to refrain from choosing as pleases us.

These questions are very large, and I am sure involve inter-disciplinary exercise in definition, much less in groping for something passable as answers. Here I plead guilty to the charge of only raising commonplace questions in an area in which there appears to be a community of confusion and historical accident. There is some reason for good cheer, however, in faint rumblings of a joint effort on the part of political and economic scientists to arrive at some theory of optimal voting procedures.

Before I go on, let me add a footnote and a conclusion. First the footnote. If it is necessary to point out that we are a good way off from providing only those goods and services through government which the market is incapable of providing, it is also necessary to point out that we are also a good way off from socialism as it has been traditionally understood. Socialism is government ownership of the means of production. Provision for public wants in our country is not typically undertaken by government acquisition of the means of producing them. Rather it is done by an exercise of effective demand in the market place. Goods and services which have come to be defined as public wants are, for the most part, produced by the private sector.

It is sometimes inferred that government demand for goods and services is "socialistic." This is a difficult definition to defend. A definition of "socialism" as government demand for goods and services requires the person making it have in mind how much the government must buy from private producers in order to make the purchase "socialistic." The person using this definition must also have in mind how large a government subsidy to a private undertaking makes that undertaking "socialistic." We sometimes hear a cry of "socialism" raised when the government taxes and transfers the receipts to a welfare recipient who spends the money for private goods and services; we rarely hear the cry of "socialism" raised when the government levies taxes and uses the receipts to purchase, say, 100 per cent of the output of a defense supplier.

Now let me conclude our discussion of government as a demander of goods and services. Markets allocate our scarce resources among competing uses through the intermediation of the price system. Relative prices are indices of relative scarcities and act to coordinate a multitude of decisions to produce and consume. Firms contemplating undertaking the production of a good or service will be guided by the selling price of the good or service it expects to prevail and the prices of the factor services necessary to produce the good or service. Persons attempting to satisfy their needs will be guided through the maze of competing goods and services by selling prices.

Markets may fail to perform their function in the case of social consumption where decisions to produce and consume have more than private impact. Just where the market fails in this sense is arguable, as I have pointed out, and constitutes part of the debate between the "old" and "new liberals."

The fact that questions of how much or how often the government should displace the market are extraordinarily difficult questions should not disguise the fact that once the level of government activity is given, the activity it undertakes is most often through the market place. The government in taxing you and me and transferring part of our income to a widow, does not tell the widow what to buy. The government does not give the widow stamps redeemable only at a government store; it gives her a check to spend as she chooses for goods and services produced privately. The government in providing a new defense facility or a grain storage depot contracts the services of private firms who decide how to mix the services of labor and the services of drill presses. In short, government provision of social goods does not circumvent and weaken the enterprise system but rather utilizes and strengthens it.

2. We shall now turn to the rationale of government as "equilibrator." Government's role as equilibrator of the economy may be separated into two main branches: one is a fiscal branch, and the other is a monetary branch. Let us discuss each branch in turn.

We have already observed that government supplies services to us as citizens by purchasing and using the output of private firms and by directly employing private individuals so as to make their services available to the public. Government levies taxes in order to finance the purchase of these goods and services. Or, to put it differently, we, the public, pay for services supplied by government through the tax system, while we pay for privately supplied goods and services through the price system.

In the process of spending and taxing, government inevitably has direct effects on private economic activity. These effects flow along several channels. Government purchases of defense equipment, which are privately produced as we have noted, create employment and incomes in defense industries. And as those who earn their livelihood in these industries spend their incomes, still others feel the impact of government purchases. So it is with all direct government purchase of goods and services. Government also affects private incomes through what we call transfer payments--welfare benefits, unemployment compensation, social security.

On the other hand, Government extracts income from the private economy in the form of taxes. Purchasing power which we would have exercised directly or indirectly is absorbed by government and used either to finance <u>its</u> purchases of goods and services or to transfer purchasing power to others.

There are times when government tax collections do not precisely match outlays. In other words, there may be a deficit in the budget. And as the government borrows to finance that portion of expenditures not covered by tax receipts, it has effects on money and capital markets. These effects, in turn, have an impact on the ability of private borrowers to finance their projects. At other times--less frequent in recent history--the budget is in surplus and the manner in which the government disposes of the excess of tax receipts over expenditures also affects private capital markets.

In these ways, which I have sketched very roughly, government budgets have an impact on economic activity--that is, on total demand, on output, on incomes, and, at times, on prices. It is also true, incidentally, that changes in economic activity have an impact on the budget. Because tax revenues are linked so closely to incomes, anything that causes a change in private incomes automatically affects tax receipts. Thus, there is a reciprocal relationship between the budget and private economic activity.

It has come to be generally accepted in almost all countries that government should shape and time its budgetary activities and tax policies in a way that encourages the economy to perform at its best; that is, to perform so as to provide employment for a growing labor force, and to produce a steadily expanding volume of goods and services at relatively stable prices. In the United States, passage of the Employment Act of 1946 symbolized acceptance of these responsibilities by the government--not only in the case of fiscal policy but also monetary and other policies that affect economic activity.

The fiscal branch of government's role as an "equilibrator," then, is concerned with the interaction of government budgets and private incomes and expenditures. The monetary branch of government's role as an equilibrator, on the other hand, is concerned with the terms upon which economic activity is financed. It is concerned with the cost and availability of credit. The government could, of course, organize its budget and monetary affairs without regard to their impact on the economy. Although this would certainly qualify as a monetary and fiscal policy, it is not one we would be prepared to live with. What is usually meant is that the government organize and implement its budget and monetary affairs in such a way as to stimulate an optimum performance of the private economy.

We have discussed some of the mechanics of fiscal policy in the last few minutes. The mechanics of monetary policy are quite complex and deserve much more in the way of detail than we have time for, but let me see if I can suggest their operation.

To illustrate, the Federal Reserve can implement an expansionary monetary policy by purchasing government securities on the open market. This purchase will drive up the prices of these securities and drive their yields down. Lenders who had not been contemplating making loans to businesses or consumers will be encouraged to do so instead of holding government securities. Many lenders will be able to sell their securities at a profit. The enlarged competition of lenders means that some applicants for loans will now find credit less expensive and will activate decisions to borrow and to spend. This is the cost of credit component of monetary policy. Furthermore, commercial banks, having gained reserves from open market operations, now have more to lend or invest. Or looking at it differently, the Federal Reserve has created new money to pay for the Government securities it purchased. All lenders are now aware that the total resources for meeting loan and investment demands have been enlarged so measures to bring resources and demands together are put into effect. Lenders are less selective, terms are eased, and interest rates fall. In the process some who would otherwise have been unable to get financing come into the market.

It is often said that monetary easing is like pushing on a string unless eager borrowers are in evidence. What is forgotten is that there are always eager borrowers if the price is right and the terms are favorable. What is often overlooked is that monetary action by imposing an investment decision on the most sensitive and versatile financial nerve--the money market bank--is certain of initiating a succession of investment actions that will ultimately lead to spending.

In fulfilling its responsibilities to encourage economic growth and stability through the use of fiscal and monetary policies, government is, as I have said, attempting to act as an equilibrator. This means that it has recognized the fact that private economic activity proceeds unevenly in a free market economy. We have "good auto years and "poor" auto years. We have years in which many businesses decide that prospects justify large additions to their productive capacity and to their inventories and years in which these prospects are less bullish.

In addition to the inherent tendencies toward fluctuation--the business cycle is as old as the free market system--there is another consideration that invites governmental policies to equilibrate the economy. Not only is the economy subject to fluctuations, but also there is no reason to believe that the economy has a normal and natural tendency to gravitate toward full employment. Deviations from this ideal condition should not be interpreted as indicating that the economy is suffering pathologically from some malady, which, if we could only identify and eliminate it, would permit a return to prosperity and stability. Rather, in an economy in which decisions to invest and save are taken by millions of individual units, it is a remarkable coincidence if these decisions result in just the correct amount of aggregate demand to utilize fully, but not excessively, the economy's productive capacity. For this reason, too, a degree of guidance from fiscal and monetary policy is necessary and desirable.

By emphasizing fiscal and monetary policies I would not want to create the impression that these tools are sufficient to cope with structural unemployment, the balance of payment deficit, the agricultural surplus, or any one of many aggravations to our economy. A broken leg is not cured with a good diet nor will a ruptured balloon soar in a gale. It is just as evident that if we obscure the necessity for specific remedies with a general euphoria the specific problems will be with us for a long time.

I want to emphasize that the use by government of fiscal, monetary, and other economic policies can and should be consistent with the maintenance of economic freedom. Government spends, taxes, and carries out central banking operations, and these actions affect the environment in which individual consumers and businesses make their own decisions to spend, to save, to invest, to lend, and to borrow. But these individual decisions remain within the discretion and authority of individual economic units.

As I have said, government will in any case be influencing the private economy by its budgetary and money-creating activities. What fiscal and monetary policies attempt to do is to time and direct these governmental activities so as to provide an environment conducive to optimum performance by the economy.

3. The rationale of government as a "regulator" in the economic sphere is largely a matter of protecting citizens from abusive exercise of economic power. The concentration of economic power which makes such abuse a matter of public concern may come about because the profit motive incites profane as well as acceptable conduct. It can also come about for technical reasons. The technical conditions surrounding the production of a good or service may be such as to lead to the survival of only one producer; in other words, to what has been called a "natural monopoly." Decisions of consumers and businessmen are restrained when they are made in monopolistic markets. The only exercise of consumer sovereignty available to them is to decide whether or not to do without. This is a significant reduction in economic freedom which should be redressed.

Attack on monopoly may occur through government acquisition or purchase of its means. Buying out the monopolist in this manner is in effect a directly socialistic expedient. Regulation of the price and output decision of the monopolist is another expedient. The intervention of government through the expedients of socialization and regulation are aimed at circumventing or amending the "non-optimal" price and output decisions a private monopolist would make.

There is a third expedient we should mention. This expedient consists simply of allowing the private monopolist enough rope to hang himself. The theory here is that the monopolist cannot exist in a dynamic environment. If it is possible to ignore him--i.e., if he does not possess title to some vital facility--he will, in time, through the deficiencies induced by his own noncompetitive behavior, overlook the forces that will undercut him. In time, new techniques and new products will enable consumers to substitute against him and break his grip.

Will the ultimate distress of a broken-down monopolist be compensation to a long exploited consumer? Some "old liberals" think so because there are no monopolists in the long run. But the consumer who has been waiting for a streetcar all the years it took to develop the family car and the air-conditioned bus would likely object to this timeless interpretation of his welfare.

It is unlikely that the long run over which the monopolist can have his way will become so short that there would not be time enough to establish and staff a government regulatory body to superintend his actions. There is, however, a lesson for regulation in the thought that a manufacturer of a peanut-sized electron tube may find his product replaced in five years by one the size of a pea. I will want to speculate some more about this in a different context in a moment or two. But for now, I think that any proposal by "old liberals" to simply forget whole areas of extant regulation--if indeed such would be offered seriously--is utopian. It is an exercise of "conjectural history." Government is very much in the business of "superintending the industry of private people." Our concern would seem to me to be to make this government superintendence as enlightened as it is possible to make it; as free from "meanness and malignancy" as it is possible to make it.

The instances in which the government acts as a regulator are very numerous. They range from very detailed regulation of public utilities to the simple regulation involved in licensing a restaurant and inspecting its kitchen. Although these acts of regulation share some common properties and are (or should be) based on some common principles, each is essentially sui generis.

The fact that individual instances of regulation are stories in themselves is what makes the study of regulation interesting and provocative. I cannot, of course, duplicate the efforts of those who have written treatises on the subject of regulation. It would take the remainder of my time to outline the issues raised in a representative set of chapters of these treatises on the problem of "fair value" and "fair return" in public utility regulation alone. So, if you will indulge me, I would like to narrow the scope of our discussion of government as regulator by examining a part of a regulation in which I have more than a lay interest. That is, I would like to examine the special case of government as a regulator of banks. But, first, let me spend a few moments in setting the stage for the discussion.

The banking system has a critical role to play in the attainment of our general economic goals. We should want a banking system that is most likely to offer the array of assets and yields to savers and the level of charges to investors conducive to the high level of savings and investment necessary for our employment and growth goals. We should want a banking system which is most likely to channel savings to most productive uses.

These performance criteria might be approached in the framework of collectivist planning, or at a less bureaucratic level, in the framework of deep-going regulation. As a society, we have found both alternatives repugnant. We have chosen rather to restrict ourselves, wherever it is feasible, to indirect means to the attainment of these criteria. That is, we have chosen to restrict ourselves to the maintenance of market forces as regulators. This in the economic theory that these forces are sufficient to obtain good performance. This in the political theory that reliance on the market maximizes the individual's opportunity to dissent.

In the absence of indisputable grounds for establishment of a public utility, the nature of government's "superintending the industry of private people" would seem clear--enforcing a policy of competition. Whether there are claims of equal importance on government's superintendence of industry--e.g., preventing an economy of shopkeepers from being transformed into an economy of clerks, or placing upper limits on a firm's size per se--are, for the most part, policy imponderables. I do, however, feel that it is reasonable to assume that an ably implemented policy of competition will do more toward meeting the economic and political ends of our society if we will permit it to assume more of the burden.

The high rate of bank merger activity in the past few years undoubtedly reflects important changes that have occurred in banking's economic environment. Outstanding among these changes is the marked trend toward population concentration and the growth of nonbank financial institutions. These changes were bound to produce adaptive response by the banking system. Since the inherent flexibility in the bank's lending activity is unmatched by a freedom to change location in response to deposit opportunities, it is inevitable that banks should consider, along with other measures, purchasing other banks as a means to achieve adaption.

Adaptation to changed economic circumstance in banking, especially as it is manifested in a high rate of merger activity, seems to me to demand careful scrutiny of regulatory policy. Merger within an industry having administered barriers to entry is potentially hostile to the public interest. It is potentially hostile to the public interest because it could foster monopoly by allowing existing banks to join together while established policy forestalled the creation of new banks.

It is in this environment of barriers to entry and of high merger activity that proposals have been made (and in some cases enacted into law) that would limit the efforts to expand services by existing banks to the purchase of established locations. That is, banks can only expand into new areas by buying banks already in the area. This curious inversion of the public interest, a kind of "Fair Trade Law" for bank growth, not only fails to recognize the direction of economic development but also denies expanding banks the opportunity to make their own judgment about the best way to enter an area. This is a policy differing only in minor details from those attacked by Adam Smith a century and three-quarters ago.

Banking is an industry where public authority supervises entry. This means that economic power can be dispensed by those delegated the responsibility of regulation. The only reason for the ability to confer such power resides in the fact that a strict procompetitive policy has not been considered appropriate in banking. The primary reasons for this are two: (1) banks are strategic in the creation of our country's credit; and (2) banks are caretakers of "other peoples' money." An inescapable consequence of competition is that only the nimble survive. Banks, it is argued, are too important in their dual role as creators of credit and as caretakers of money to be exposed to the threat of failure. The experience of the 1930's is said to provide the lesson to those who desire a procompetitive banking regulatory policy.

It is not axiomatic that even in the strongest competitive atmosphere we would experience widespread bank failure; that competition would spell catastrophe for our credit mechanism. The late 1920's and early 1930's were a complicated bit of political and economic history. Environment conditions other than the pattern of banking organization were determining. It seems clear, at least to me, that "undue" competition was not at the root of bank failures in that period.

Both bank stockholders and bank depositors have a claim on the public interest. But it is not an equal claim. The stockholder of the bank does not in logic acquire, with his certificates, claim to extraordinary public protection from loss. He has not given up the major decisions over the direction of the use of his capital that his colleague owning public utility stocks has. The bank stockholder is a "risker of capital" in the same sense as is the stockholder of the local manufacturing corporation. As such he deserves no special public attention.

The bank depositor does deserve protection, and in most instances gets it through a combination of deposit insurance, the cushion of bank capital, and regulatory rules and supervision of investment and management. Providing safety for the depositor is not inconsistent with competitive behavior of banks.

Some moments ago I mentioned a lesson for regulation inherent in the fact that ours is a rapidly changing economy. I have also mentioned that present bank regulation administers entry of banks, the creation of new banks, in the attempt to prevent what has been called "overbanking." These barriers to entry are erected to "keep competition within safe levels." The effectiveness of limiting competition by limiting entry of banks is, however, waning. The reason for this lies in the rapid growth of nonbank competition. Savings and loan associations, finance companies, credit unions and the like compete vigorously with banks for savings or in the provision of certain types of loans. Broadening capital and money markets are beginning to impinge on traditional bank "preserves." Banking authorities do not control these institutions and, hence, cannot control the force of their competition with banks.

The only banking activities where entry restriction may still limit competition effectively is in the area of services to depositors and loans to the small business borrower. Large, well-known businesses can appeal to highly developed and very competitive markets, and to a variety of financial institutions for their borrowing needs. Consumer and mortgage credit needs are serviced by several nonbanking financial agencies. But small business borrowers of modest means and modest reputations, unless fully indentured by trade credit, are likely to be limited to bank credit, and to banks in their own locale. "Keeping competition within safe levels" can mean limiting the alternatives of such borrowers. It can mean that the borrower of modest circumstance unsatisfied with the terms his bank offers has only the option of doing without.

There are grounds for a more procompetitive policy in bank regulation, especially in the form of some relaxation of entry restrictions. The adoption of more in the way of procompetitive policy would do much to reduce the number of occasions for the banking authority to decide on what is "adequate" for a community or on what a community "needs." Competition has a way of determining needs and providing for adequate facilities. It is a much better way than that offered by bureaucratic decisions.

II

Perhaps a moment spent on a summary of our very wide-ranging discussion would be worthwhile. I have attempted to indicate to you my understanding of Government Responsibility in the economic sphere by speaking of government's role as a "demander" of goods and services, as an "equilibrator" of the economy, and as a "regulator" of certain aspects of market behavior. I have discussed in general, though hopefully not too vaguely, the rationale for each of these artificially separated roles. At various points in the discussion we have touched upon political constraints within which government action takes place.

I imagine it is rather common to leave discussions of this nature with feelings of dissatisfaction for having raised rather standard questions and having invoked the standard plea for "more research" and for "better understanding." But I have promised some observations on the relevance of Economic Knowledge to Government Responsibility.

It would certainly be trite to remain on the most general of levels in meeting my responsibility for such a discussion. For then we would end our hour together by concluding that it would be a good thing if government action were not carried out in total ignorance. Let me see if I can avoid being that banal in attempting to discuss the link between Economic Knowledge and Government Responsibility.

We might attempt to give setting to our discussion of this link by touching on one of the most difficult problems of our time. Growth in the economy is crucial to the workings of our capitalist engine. Without expansion, the economy cannot provide the jobs an increasing population needs. Further, this expansion must be more or less regular and even. We must avoid the inflationary flare-ups which depreciate peoples' past efforts stored in the form of their savings. At the same time, we must avoid the protracted slumps which waste human resources and frustrate our potential. We should not convey the impression to the world that our freedom is, in the main, the freedom to be unemployed.

We can begin thinking about the problem of more even and sustained growth in terms of a set of goals which are to be implemented. This set of goals is a "policy" and is drawn up in terms of levels or changes in levels of certain "economic variables." We can give concreteness to these definitions for our growth problem by assuming that the "policy" is the Employment Act of 1946, and that the "economic variables" are the levels and movements in prices, total product, and employment. In addition, the executive and legislative branch of the government may delegate, and in some instances may retain, control over what we might call "policy instruments" or tools. In the case of the Federal Reserve, the "policy instruments" are the discount rate at which banks may borrow, member bank reserves, and open market purchases and sales of Government securities. Fiscal "policy instruments" are taxing and spending decisions of government both as to the budget level and change in that level as well as to kinds of taxes and programs of expenditure.

How might Economic Knowledge enter here? It would enter as knowledge of the relationships that exist among the "economic variables" our growth problem specifies--prices, employment, and total product--and knowledge of the relationship that exists between the "economic variables" and the "policy instruments"--monetary and fiscal tools. These relationships are studied in general economic analysis under the title "Income Theory." Income theory suggests that total product, the consumption behavior of our population in the aggregate, the investment behavior of business, and the monetary and fiscal decisions of the Government are related in a particular way. Income theory, in its most sophisticated dress, appears as a growth model. (Really as a set of growth models, since competition is a virtue economists regard as healthy for themselves as well as others.) Income theory as a growth model is suggestive of the way in which the movement in time of total product, prices, and employment are related. Income theory as a growth model is also suggestive of the way in which these time paths of total product, prices, and employment are affected by a change in taxes, government expenditures, or the monetary climate.

I say suggestive because these growth models of Income Theory do not yield these relationships as a quantitative result: They do not specify a numerical change in the level of employment resulting from $X billion of new government expenditures, but only the direction of the change in employment. The task of estimating numerical changes in employment for, say, a cut in taxes of $X billion, or a rise in government expenditures of $Y billion is left to a rather exotic branch of economics called econometrics.

Just as the practicing astronaut came into being with new scientific knowledge in the form of a space vehicle so the practicing econometrician came into practical existence with the electronic computer. This is the instrument which affords him the opportunity to attempt to predict the future course, of say, employment by his knowledge of how employment, consumption, investment, and government expenditures were related in the past.

We need not, of course, restrict our hypothetical econometrician to advising government in its role as "equilibrator." To illustrate, let us recall our discussion of government as a "regulator." Suppose we narrow this further by imagining that the problem is implementing the Banking Acts conveying Congress' intent on mergers and consolidations of banks. Economic Knowledge would consist of the relationships economic theory suggests would exist between the number of banks doing business in a particular market--the structure of the market--and the level of interest rates on loans--the performance of the market. Our econometrician would then egage himself in framing and carrying out tests of the relation between the structure of banking markets and their performance.

This kind of Economic Knowledge--scientific economic knowledge, if you please--is an ideal. We see lots of theories but woefully little in the way of econometric application of these theories. This is because making econometric applications of theory is a very difficult job. Unlike his counterpart in the physical sciences, the econometrician must be content with changes in his laboratory conditions which often occur in a most vexing way.

In the absence of a large body of scientific economic knowledge, the decision maker is forced to resort to "artistic economics." "Artistic economics" might be thought of as proceeding from what the economist derives from his long acquaintance with a particular problem. He is often unable either to state the theory upon which he bases his decisions in a systematic form or to attach numbers to the relationships into which he feels he has considerable insight.

It does not necessarily follow that economic decisions which are based upon the "art" or the "feel" of economists are wrong or even suspect. It does follow, however, that the accumulation of scientific information in a form readily available to the decision maker cannot fail to be of assistance to him in the decision-making process.

It is difficult to say, in general, what portion of economic decision making may be described as "art" and what part may be described as "scientific." Private businesses have made progress in recent years in scientific decision making, or "management science." But in the case of government, with more complex goals and a larger number of behavioral units and institutions to take into account, the problem is much more difficult. In any event, it must not be supposed that the complete substitution of scientific for artistic decision making is possible or even desirable. At best, a rigorous economic theory, a set of mathematical equations, and an electronic computer will aid, not replace, the economic decision maker, who, it is hoped, will always have a bit of the artist in him.