Economic Growth and Market Processes

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I. Introduction

The aim of this essay is to provide an alternative view of economic growth in a market economy through what is known as a market-process perspective—so called because of its emphasis on disequilibrium, uncertainty, evolutionary change, and the paramount importance of the subjective perceptions of market participants. Since all economic phenomena are the result of the actions of individuals, the market-process economist traces the intended and unintended consequences of individual interaction in alternative institutional settings. Since success of any one individual's plans depends upon the actions of other market participants, the coordination of plans among economic actors is critically important for successful economic growth. The market-process economist views the market as an evolving institution that primarily serves to generate the information and the incentives to facilitate this necessary plan coordination. Market signals such as prices, profits, and interest rates are important coordinating phenomena that have spontaneously evolved in the market system. Since uncertainty and imperfect information pervade the world, these sensitive signals provide vital information to market participants and greatly facilitate the plan coordination of producers and consumers, complementary and competing firms, and the intertemporal activities of all economic actors. Given this view of the market as an institution that not only disseminates critical market-coordinating information, but also *generates* this information, the market-process economist is especially concerned with economic policies that unintentionally distort these market signals and therefore interfere with plan coordination.

Only with a coherent theory of economic growth can one understand the causes of the signficant productivity problems facing America and not be misled by the scores of plausible but ultimately erroneous explanations of prosperity and stagnation. Section II, Economic Growth—A Market-Process Perspective, offers the rudiments of such

a theory. Since this essay is intended to explain an alternative view of economic growth and not to explore the fine points of theory, the model is intentionally simplistic and therefore passes over many of the rich theoretical refinements and controversies surrounding some of its assumptions. Section II endeavors to establish the connection between individual decision making and economic growth, as well as the need to think beyond the concepts of aggregate savings and investment. Instead, I suggest focusing analysis on the way in which individuals' plans to save and invest must interlock with the plans of other economic actors to be successful. The functions of prices, profits, and interest rates in the overall process of market coordination are given special attention.

Section III, The Effects of Government Policies on Economic Growth, builds on the basic model presented in Section II and demonstrates how recent economic policies have disrupted the conditions necessary for sustained economic growth. These policies have not only reduced the level of savings and investment but have consistently frustrated market coordination. The key point in this section is not only that government policies reduce the available resources for investment activities, but that these policies unintentionally distort the market signals necessary for individuals to successfully carry out plans in the face of the uncertainties and complexities of an industrialized economy. One example, monetary disruptions of the coordinating function of the interest rate, is developed in some depth. Although any of a number of possible examples would serve to illustrate the importance of plan coordinaton in successful economic performance, the example of the interest rate was chosen because most economists, including supply-side advocates, either completely ignore or explicitly dispute this particular coordination problem.

Section IV, Keynesian, Neoclassical, Supply-Side and Market-Process Approaches, explains why the conventional Keynesian and neoclassical tools are ill-equipped to deal with some of the critical problems connected with economic growth in a dynamic economy. By contrast, a market-process framework readily enables one to see that a key to understanding many of our present day economic problems lies in the examination of economic policies affecting market coordination within and across industrial sectors, rather than just focusing on the aggregate size of these sectors. Coordination problems are lost in the level of aggregation employed in Keynesian macromodels and they are assumed away in neoclassical growth models. Supply-side economists in general ignore coordination problems for both of these reasons. Section IV also explains how supply-siders confuse the coordinating functions of various market signals when they analyze the impact of government policies.

Part V, Policy Recommendations, welcomes the attention on tax cuts by supply-side economists and the Reagan administration, but not

without serious reservations. While taxes are a significant factor affecting economic growth, they are neither the only factor nor necessarily the most important factor. Concerns about productivity must address the significant consequences of policies other than taxes that affect economic growth. The most important challenge to supply-side economists will be to address the problems of market coordination which are almost totally ignored in the current literature. Reindustrialization, industrial welfare, and varied depreciation schedule changes advocated by some supply-siders have significant implications for market coordination which are presently ignored and can result in severe disruptions to sustained economic growth. These disruptions can be readily appreciated in a market-process framework that examines the market mechanisms that tend to coordinate intrasector as well as intersector economic activity.

II. Economic Growth—A Market-Process Perspective

The amount of attention currently being given to taxation, productivity, and economic growth is largely due to the inability of the American economy to maintain a satisfactory track record. As a result we have seen many competing explanations of our economy's woes and even more recommendations of how to alleviate these problems. This section of my analysis will attempt to present a market-process theory of productivity and economic growth, which will provide the reader with at least one foil with which to evaluate current economic policies.

No final and all-encompassing definition of economic growth exists among economists. Economic growth has been associated with a number of different phenomena including technological progress, "lengthening" of the structure of production, and an increasing stock of capital. I prefer to view the quest for economic growth as simply an attempt to raise future living standards relative to present living standards.[1]

As a science, economics has nothing to say about the *desirability* of economic growth. As along as scarcity exists, men must choose between competing ends, and a choice of one of these ends implies the sacrifice of other ends. Like any end, economic growth has its opportunity costs, for it must compete with other goals such as more present consumption or more leisure. The advocate of an increase in economic growth rates is implicitly making the claim that future benefits from growth outweigh the current sacrifices necessary to achieve this growth. Which end is most important is a value judgment and such judgments are outside the realm of the value-free science of economics. However, what an economist can do is contrast the consequences of, and possibilities for, economic growth in various institutional settings.

One such institutional setting is an unhampered market economy. This proves to be an especially fruitful setting for examining productivity and economic growth because by initially factoring out existing government policies we can obtain a clearer picture of the cumulative consequences of these policies. We can then examine previous government policies which helped determine our present productivity as well as the proposed policy measures intended to improve our situation.

A variety of factors are relevant for determining how much an economy will grow and what sort of growth will be achieved. The most important of these factors are time preference (savings-consumption decisions), the ability of the price system to allocate resources to their most highly valued uses, intertemporal coordination of plans, and the degree to which new investment projects are successfully integrated into the existing capital structure.

To illustrate these points, assume that on one of your frequent trips to the French Riviera your plane crashed into the ocean and because of your superior swimming skills you become the sole survivor on a deserted island. After waking up from a deep sleep that allowed your body to recover from the trials of the crash and your struggle to reach the shore, you find that you have to search eight hours a day for food just to survive. Assume that you prefer fish (as opposed to coconuts or other culinary delights that the island has to offer)—so you fish eight hours a day and engage in leisure (rest) the remainder of the day. You soon become unhappy with your present standard of living and want to increase it in the future. Therefore, you decide to fish twelve hours a day and after two days you have accumulated enough fish to sustain you for a third day without fishing. Now you are facing at least two choices: one of consumption, e.g., sunbathing the third day, or investing—building a net to increase your future production possibilities. By saving or accumulating fish for two days and abstaining from the present consumption of leisure, i.e., sunbathing, you have been able, through the construction of the net, to realize economic growth, i.e., have raised your future living standards. Now you can catch your daily subsistence of fish in four hours instead of eight. Your act of savings allowed you to engage in economic growth. The foregoing of present consumption allowed you to produce a capital good (the net) and to develop a longer and more productive structure of production. This has traditionally been called "lengthening the structure of production" and is illustrated below by the additional step in the production process.

$$\text{Man} \xrightarrow{1} \quad \text{fish} \xrightarrow{2} \quad \text{consumption.}$$

$$\text{Man} \xrightarrow{1} \quad \underset{\text{(capital good)}}{\text{net}} \xrightarrow{2} \quad \text{fish} \xrightarrow{3} \quad \text{consumption.}$$

In this primitive society savings directly determined the level of investment, for the number of fish you caught directly determined how many days you could devote to investment (building the net). This direct relationship between savings and investment is altered in a complex monetary economy, as the existence of money creates an "intercession" between savings and investment. Acts of saving and investment will usually be performed by different groups of individuals (or individuals acting in different roles) who will most likely have different purposes. Such complexity poses serious problems involving the coordination of all these various plans—a problem of economic coordination that all economic systems must solve.

In a complex industrial society such as the United States, the price system is a critical mechanism for discovering and disseminating information about the thousands of economic resources and almost limitless possible combinations of these resources. Prices are the reflection of the value that the millions of individual actors within the economy place on specific economic goods. Information on consumers' valuation is of necessity scattered, vague, and incomplete. Market prices synthesize this value information and convert it to a usable form. Buyers, by bidding for goods, are attempting to establish the case that particular goods are most urgently demanded and most valuable to them because they are willing to bid the highest in order to purchase them. Suppliers, guided by the bids of demanders, are alerted to where scarce resources should be channeled to reach their most useful employment. This familiar tale of the interacton of suppliers and demanders illustrates the critical coordinating function of prices in allocating scarce resources to their most highly valued uses. Since prices are the direct result of bidding by economic actors, expressing the value of resources in their plans, and because they convey the most accurate and timely information, then external interference with market-generated prices will cause people to act on distorted information. And, an individual's economic plans based on distorted information disrupts not only his activities but the plans of others because of the extensive interdependence of economic activity in a complex economy.

Profits, on the other hand, provide the incentive for effectively utilitizing the information disseminated by prices. In addition to rewarding successful entrepreneurial behavior and penalizing entrepreneurial errors, profits act to redirect the command of scarce resources away from entrepreneurs who either are inept at reading price signals or have acted on incorrect information (and thus suffer losses) toward entrepreneurs with a demonstrated record of success (i.e., profit makers). Profits put money—and therefore the command of scarce resources—in the hands of entrepreneurs who have demonstrated good judgment. Thus, profits and losses play at least two key roles in a market economy: they provide incentives to produce the goods that

consumers must urgently want and direct resources into the hands of those most competent in bringing the goods to market.

The interest rate is another important market signal. It aids in redirecting resources *across time*, by reflecting individuals' preference for economic growth as well as their commitment to make the necessary sacrifice of present consumption to realize this growth. Interest rates are, therefore, a critical information-generating signal for allocating savings and investment and hence the prospects for realized economic growth. To the extent that the rate of interest tends toward its market clearing level, it will serve to coordinate *ex ante* the plans of savers and investors by disseminating information about the terms on which economic opportunities will be offered.

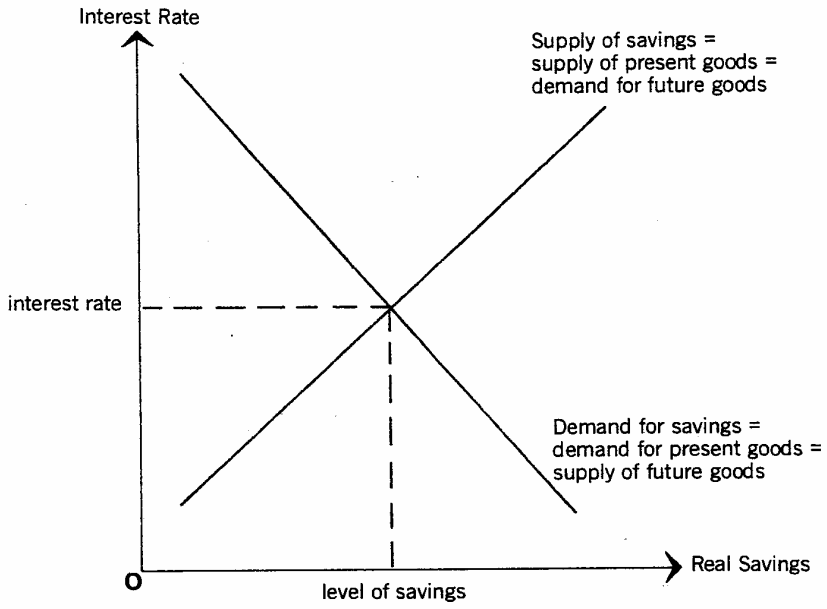
The very act of saving on the part of an individual implies that his demand for present consumer goods has gone down and that his demand for future consumer goods has increased. After all, few people save indefinitely for no reason—most people save to provide for enhanced future consumption in a few years, for their old age, or for their heirs. How much an individual saves depends on his time preference in conjunction with the constraints he faces in the market. Time preference is the subjective evaluation of future command in relation to present command over scarce resources. The decision to save $100 today in order to be able to purchase $110 worth of goods next year indicates a time preference reflected by the 10 percent return. You prefer $110 a year from today over spending the $100 today. If you prefer the $100 today you would have a higher time preference — something higher than $110, perhaps $120, would be required to induce you to save the $100 today for the opportunity to spend it a year from now.

As can be seen from this example, time preference is merely the trade-off we all have between present goods and future goods. We save today in the expectation of being able to exercise an increased ability to demand goods in the future (future goods). This is what the demand for economic growth is: the preference for a rise in future living standards at the expense of present living standards (consumption). To realize this increased preference for growth requires increased saving —the present sacrifice for future gain.

How does the market respond to this decline in present demand for consumption goods and the increase in future demand that results from the decision to increase savings? It responds in the same way that is does whenever the relative demand between any other two goods changes—it provides the incentive and the information for entrepreneurs to decrease the supply of present goods to match the decreased demand and to increase the supply of future goods to match the increased future demand. (See Figure 1.)

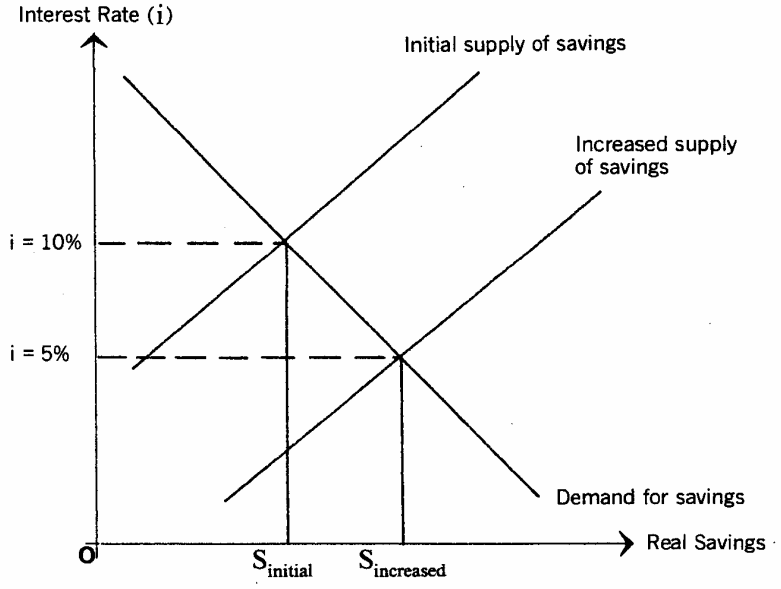
When people decrease their present demand for goods, the funds generated by this saving increases the amount of money in the loan

FIGURE 1
INTEREST RATE DETERMINATION



market which in turn decreases the interest rate (assuming that people don't put all of this "excess money" under their pillow). The lowered interest rate allows entrepreneurs to borrow these funds for new investment projects that will eventually bring an increased supply of goods to the market, just as the net in our desert island example increased the future supply of fish. (See Figure 2.)

FIGURE 2
DECREASE IN TIME PREFERENCE



The previous discussion should help clarify the importance of prices, profits, and the interest rate for the intertemporal plan coordination of economic actors in any discussion of economic growth. Intertemporal plan coordination is necessary for savings to be converted into the most highly valued investments, and the price mechanism is the primary means through which this process is accomplished.

Perhaps the least understood feature of economic growth is the necessity of creating new capital goods which will perform a complementary function with other capital goods. The importance of this particular sort of coordination is often forgotten in neoclassical models which treat capital as a homogenous aggregate rather than as a complex heterogeneous structure. Yet different sorts of new investments should not be treated as equivalents because each investment will effectively "interlock" with the existing capital structure in a different way and to a different degree. An example of this point is given by Western aid to underdeveloped nations. While agencies such as the World Bank may advance the capital which allows the lesser developed countries to purchase such technologically advanced ventures as steel mills, hydroelectric plants, and mechanized agriculture, these projects are rarely integrated into the structure of production of the underdeveloped nation. More often than not, these countries will have little or no support industry to produce spare parts, to train the necessary high-skilled labor, or even to use the products of the new industry. The amount of capital will have increased in the lesser developed countries if we view capital as a homogeneous aggregate. Therefore the addition of the steel mill to the capital stock will appear as equally valuable as any other investment of comparable magnitude. But if one views capital as a heterogeneous structure, the steel mill is a misallocation because it is not integrated into the existing capital structure.

The extent to which an economy manages to coordinate its capital structure is due primarily to the degree to which its key market signals —prices, profits, and interest rates—are not impeded in performing their coordinating functions.

III. The Effect of Government Economic Policies on Economic Growth

When the problems of economic growth and the effects of macroeconomic policy are examined within a microeconomic market-process framework, the implications are that government policies critically lower the level of savings as well as distort market activities that affect virtually every economic decision made in the economy: interest rates, the incentive to invest (profits), the relative profitability of investing in particular economic sectors (opportunity costs), and the coordination both of plans among entrepreneurs and with the consumption plans of consumers (prices). These implications are not adequately addressed in either aggregate demand models or aggregate supply models.

A. Savings

Using a market-process framework, some interesting questions arise concerning the level of savings and the low rate of economic growth in the United States during the past twenty years. What factors affected individuals' proclivity to save—to finance economic growth? One important factor is the income taxes people have to pay on the money they earn from productive activity. Much of what remains after their income tax is paid is used to purchase present consumption goods on which, more often than not, one must pay a sales tax. If a person owns property, he pays additional property taxes. If you wish to provide for your family when you die, you pay inheritance taxes. If an individual wants to provide for other people while they are living, they pay gift taxes. Whatever is left to save and generate interest income is also taxed. When all taxes, visible and hidden, are taken into account, nearly half of a person's income can go to taxes. After that, a major part of the remaining half will probably not be available for savings. No doubt the largest portion of the remaining income will usually be spent to provide subsistence in the present—housing, food, clothing, etc.—leaving very little for savings.

In addition to the burden imposed by taxes, the American consumer is able to extract far fewer products out of his remaining income because there are fewer goods available and the prices they command are higher as a result of thousands of government regulations and edicts. Controls raising prices, such as minimum wage laws, interest rate regulations, milk price supports, natural gas price regulations, rent controls, and subsidies ranging from Chrysler to tobacco growers to beekeepers all result in a drain on the consumer's pocketbook.

Exacerbating the strain on savers and further distorting the production structure is inflation, which has destroyed traditional avenues of saving and therefore pushed people to search for alternative places to sink their money needed to provide for the future. Precious metals, jewelry, and art objects have been favorite sinkholes. Regulations on the maximum interest rates that financial institutions can offer have also tended to discourage saving and rechannel savings into alternative institutions. Inflation has helped cause a dollar invested in tax avoidance and/or tax evasion bring a much larger return than a dollar devoted to saving as evidenced by the tremendous growth in the number of accountants and the underground economy. Lastly, what saving *is* encouraged is usually channeled into consumer durables, such as housing, because of tax laws, inflation, and subsidies. Any thorough treatment of economic growth since World War II needs to investigate these phenomena.

B. Production

The problem is twofold. The first difficulty is that government economic policies substantially diminish the stock of goods available

for future consumption. However, even more significant than the effect on total output is how government policies influence the structure of production, once the crimped pool of saving is invested. Prices that normally direct resources into those channels of industry that satisfy the most urgent demands of consumers are artificially altered. Marginal producers exit the industry and nonspecific factors of producton are shifted into other industries. Specific factors may lie idle instead of being utilized to produce the goods that consumers most readily demand. Resources shift out of overregulated and price-controlled sectors into less urgent uses, such as subsidized industries. Effort and expenditure, normally devoted to production, is diverted into avoiding the wealth losses from unfavorable regulations and clamoring for subsidies and favorable regulation. All of these distortions have serious consequences both for the quantity of savings and for the uses to which these savings are put. A more thorough study than is warranted here would examine further distortions to productivity caused by labor laws, tariffs, licensing laws, etc. which alter relative prices and therefore distort resource allocation devoted to the provision of such services as medical, legal, plumbing, electrical, carpentry and imported as well as domestically produced goods.

Government policy also affects economic growth through its impact on investment decisions made by the producers of the actual capital equipment, such as the steel mills, and the research and development necessary to supply the goods that will help generate a rising standard of living. A brief run-through of several pertinent facts is revealing. The corporate sector of the United States has been taxed at a nominal rate between 40 and 50 percent. However, after taking inflation into account, the real tax burden is sometimes over 100 percent. The impact of such a high rate of taxation on the profitability of investment is staggering. According to Martin Feldstein of Harvard University and the National Bureau of Economic Research, the average rate of return on investment is around 4 percent.[2] A 4 percent return on capital invested is generally not an adequate incentive for the risks and efforts of many entrepreneurs. Other reasons for this low return on capital invested include the hidden tax of regulation that has been estimated by various economists to cost from $20 billion to $200 billion a year.

Another factor harmful to economic growth is the tremendous consumption of our national resources by government itself, a process which drives up the prices of the remaining resources and distorts the relative prices of all resources. Government absorption of resources that would ordinarily go to fuel economic growth is nowhere so evident as in American land and labor markets. "The U.S. land area is 2,271,343,000 acres. The federal government owns, manages or controls slightly over one-third, approximately 760,532,000 acres. Most of the public domain is located in the West, with about 63 percent of all

the land in the thirteen western states owned by the federal government. Additional holdings by state and local governments bring the total government land ownership of the U.S. to about 40 percent."[3] Not only does government control of land raise the price of various land parcels but it also distorts the prices of privately owned land, strategic minerals, and various other natural resources. In terms of the supply of labor available for building a foundation of growth, employment of one out of every five workers is directly related to government. And an even greater number is indirectly diverted from production because of government-mandated paperwork studies, impact reports, etc. These two primary factors of production, land and labor, therefore require a greater expenditure to be utilized in many production processes than might occur in an economy with a smaller government sector. The market signals determining their allocation have been significantly altered by government policies.

Government bail-outs and subsidies to inefficient firms are another factor that not only wastes valuable resources but also impinges on the normal incentive structure of the unhampered market. Major industries such as automobiles, television, and steel are now clamoring for protection from foreign competition in order to lessen the market forces of competition that weed out inefficient producers. Corporate America, like the individual citizen, finds that it is extremely profitable to devote scarce resources not to produce but to discover ways to reduce their tax and regulatory burden. Firms find that a dollar spent lobbying in Washington for special favors brings a greater return than a dollar spent in production. Rather than outcompete a rival, it is cheaper to lobby for selective regulations to drive him out of business.

Unemployment insurance, minimum wages, immigration laws, affirmative action quotas, welfare, CETA, and government intrusions into the labor market tremendously raise certain costs of production as well as redirect resources away from their most highly valued uses. Union activity, normally part of the market mechanism, has been distorted by government interference which allows unions to prevent lower income people from bidding jobs away from higher paid workers in industries with union-induced wage scales. Strikes and the threat of strikes can cause a tremendous amount of resources, normally devoted to enhanced production, to be diverted to stockpiling inventories in order to allow a firm to survive a strike. These factors all affect economic growth and should be incorporated into any analysis.

Inflation is another factor that has received a tremendous amount of attention, but it has not been fully integrated into the microeconomics of economic growth. Most analyses of inflation ignore the fact that relative prices are distorted as new money is pumped into the economy. These distortions occur because the new money created by the government enters the economy in specific ways and therefore raises specific prices in a certain pattern. As these artificially induced

prices continue to rise, entrepreneurs respond as they do to all relative price changes—they redirect resources into the newly (seemingly) profitable areas. But this flow is exposed as a malinvestment when the government stops pumping new money into the economy (or more often, slows the rate of increase). So there is good reason to suspect that the boom induced by government policies affecting the money supply is causally related to recessions (where the malinvestments are revealed). The economist studying economic growth must address these business cycles where vast amounts of resources are wasted because, for some reason, *most* entrepreneurs in whole sectors of the economy are in error (when in normal times only some entrepreneurs make critical errors). Why do these highly skilled profesionals systematically err at one particular point in time and generate a recession? The creation of false price signals generated by government-induced monetary expansion provides some interesting clues.

While many analysts recognize the income redistribution effects of inflation, most are either unaware of or deny the serious redistribution of *resources* caused by inflation. The most important example of this redistribution of resources can be seen operating through the "time market." The critical link between economic growth, the quantity of savings, and the interest rate was explained earlier. We saw that when individuals lower their time preference (decreasing their present consumption and increasing their savings), they are effectively exercising an increased demand for economic growth. Suppliers react to these future demands when the increased saving lowers the interest rate and therefore makes investment less costly than before because interest outlay is a significant aspect in the investment decision. Not only are most investment projects stimulated, but they are stimulated to different degrees. The relative profitability of longer-run projects increases relative to shorter projects. A short example will illustrate the point:

Assume that you are faced with two investment projects that have the same net present value after you take into consideration outlays, expected income, and subjective preferences.

*Where N = number of years project lasts, i = the interest rate, and R = net anticipated revenues generated by the investment project.

$$NPV_1 = \frac{RN}{(1+i)} = \frac{1100}{1.1} = \$1{,}000$$

where N = 1 year
i = .10
R = $1100

$$NPV_2 = \frac{R}{N} = \frac{100}{.10} = \$1{,}000$$

where $N = \infty$
i = .10
R = $100

Investment project 1 returns $1,100 in income in one year and no revenue thereafter. Assuming the interest rate to be 10 percent, the net present value of this project is $1,000.

Investment project 2 returns $100 in revenue every year in perpetuity. Assuming that the interest rate is 10 percent, the net present value of this investment project is $1,000. Assuming that you have incorporated all your subjective preferences into the outlay and revenue figures, you should be indifferent between these two projects.

Let's suppose that the interest rate declines to 5 percent because of the increases in the supply of savings (see Figure 2). The net present values of these two projects will increase but to different degrees.

$$PV1 = \frac{R}{(1+i)} = \frac{1100}{1+.05} = \$1{,}050 =)\uparrow 5\%$$

$$PV2 = \frac{R}{i} = \frac{100}{.05} = \$2{,}000 =)\uparrow 100\%$$

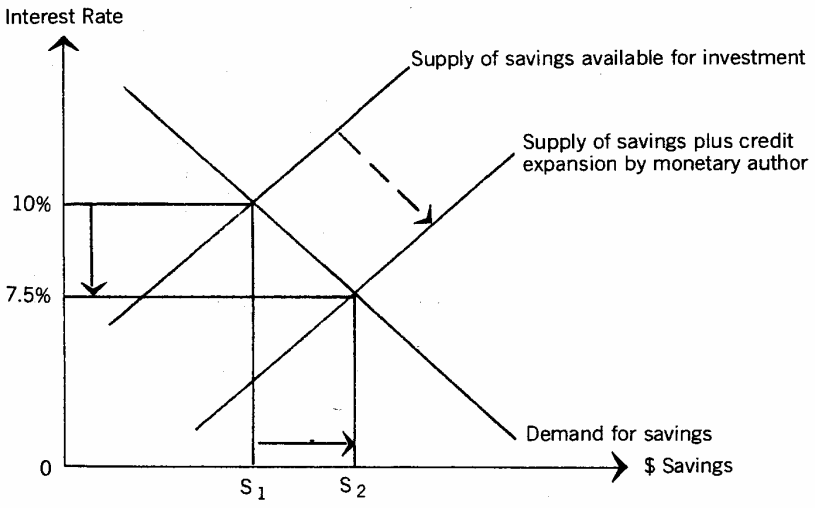
While the net present value of investment project 1 will increase 5 percent, the net present value of investment project 2 will increase 100 percent, making the longer-run project a much more attractive investment.

This example illustrates the crucial signaling role played by interest rates. Just as distorted prices cause a misallocation of resources in various markets, distorted interest rates cause a misallocation of resources over time. Past monetary policies have affected interest rates in a systematic fashion and therefore have had systematic effects in the capital goods markets. As government pumps money into the economy through the commerical banking system, the banks find that they have more money to lend out. In order to lend out this increased quantity of money, they lower the interest rate—generating an increased quantity demanded of funds and, as shown above, altering the relative attractiveness of various investment projects, by making longer run projects relatively more profitable. To the extent that entrepreneurs base their plans on the lower interest rate, they are responding as if consumers demanded more economic growth when in fact they do not. In this way monetary policy generates false signals inducing entrepreneurs to supply an increased quantity of future goods to consumers who have not expressed this preference. If the government doesn't continue pumping money into the economy at an increasing rate, firms will find themselves short of funds available to complete their investment projects. But in the meantime, capital resources are being misallocated on long-term business ventures throughout the economy.

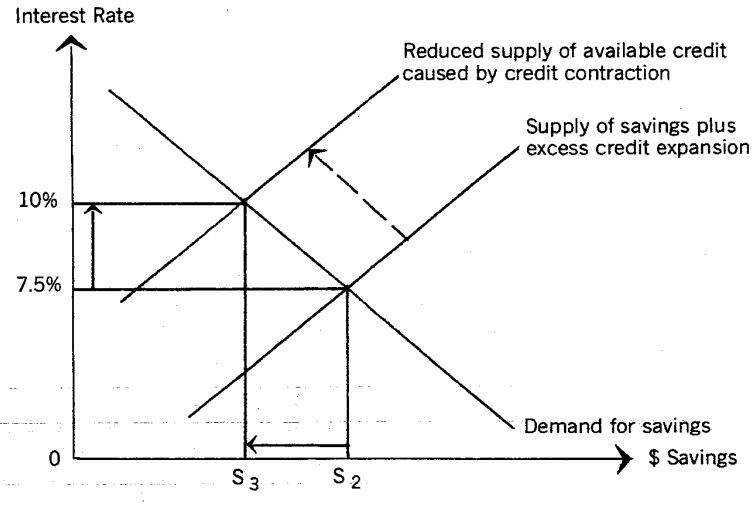
Neither have the consequences of credit expansion by a monetary authority been widely recognized. Nor have some of the secondary consequences of the monetary authorities' decision to slow down, stop, or actually decrease the money supply been fully appreciated by economic analysts.

A decrease in the money supply (or a decrease in the rate of increase of the money supply) will cause interest rates to rise. (See Figure 3.) The unexpected shortage of funds will lead people to scramble for money and credit in order to minimize the disruption of their ongoing plans. The shortage of money will send producers to the loanable funds markets to bid for the reduced supply of bank credit and this will result in higher interest rates. What has been surprising to many analysts during periods where the monetary authority reverses its expansionist policy is not the fact that interest rates rise but the degree to which they rise and the length of time they stay "high" before they approach "normal" levels.

FIGURE 3
INTEREST RATE LOWERED BY CREDIT EXPANSION



INTEREST RATE RAISED BY CREDIT CONTRACTION



Inflationary expectations are often the catchall used to explain high interest rates during such periods, despite the fact that one would expect a decreasing rate of price inflation. However, there is another possible explanation that helps to explain the interest rate pattern associated with the retraction of an expansionist monetary policy.

An example is perhaps the simplest method of illustrating the point. Let us assume that a firm starts a long-term investment project that is expected to take ten years to complete. The project is thought to be profitable if the outlays, including financing costs, are constant or will increase at a moderate rate. Assume that the project is expected to generate $10 million in revenue when it is completed ten years later, and that the expected profitability is based on interest rates of around 7.5 percent (either that interest rates are currently 7.5 percent and will continue to be so or that they are lower and are expected to rise to a maximum of 7.5 percent). But five years later there is a significant decrease in the amount of bank credit available because of contractionist monetary policy. The firm had little reason to expect this dramatic turnaround in the availability of funding to finance the continuation of this project. This firm, and others in similar situations, will either abandon the project before completion or attempt to complete the project by bidding for the remaining available funds. If firms abandon ongoing projects they will lay off workers and decrease or stop orders for raw materials and capital goods used in the projects. Some firms may go bankrupt causing complementary firms that depended on these firms to suffer. Unemployment of all types of resources will result from the primary and secondary consequences generated by the revelations of these malinvestments.

Firms which successfully receive a portion of the existing credit will have paid a much higher rate of interest. Suppose that our firm is able to acquire the existing funds to complete the investment project, but it must pay an interest rate of 15 percent. The 15 percent interest rate is much higher than what was originally considered to be a profitable range (which was any rate up to 7.5 percent). Will the firm abandon the project or continue to completion? One important factor in determining the profitability of completion is how much of the project remains to be done and how much is already done. If the firm abandons the project, it will not realize any of the anticipated $10 million in revenue. All it can hope to recoup is either scrap value or resale value of its resources which is often far below the expenditures that were necessary to produce the goods.

Assume that one-half of the project is completed. The completed portion of the project represents a sunk cost (net of resale and scrap value which we assume is zero for the sake of simplicity). Now it is quite possible that an interest rate of 15 or 20 percent is worth incurring given that half of the project is a sunk cost and therefore no longer enters the decision. The question that this firm and others with

ongoing projects face is: given the substantial wealth loss they have incurred because of the jump in the interest rate, given the fact they would never have started the project if they could undo their decision, will the $10 million of revenue warrant paying a 15 percent interest rate for the next five years? Even though the project represents a substantial loss from the perspective of the start of the project, it may still be worth completing. Bygone costs are of course bygone; all that needs to be determined is whether or not the additional costs required to complete the project, including 15 percent financing costs, are less than the expected $10 million in revenue.

Ceteris paribus, the closer the project is to completion, the lower the interest elasticity of the demand for funds. The further the project is from completion, the higher the interest elasticity of demand for funds. The demand for credit depends not so much on the demand to finance new investment projects, which represent only a small portion of investment activity, but on the credit needed to finance the completion of existing projects that were started at various points in the past. Only new investment projects will immediately be abandoned because of the much higher elasticity of demand for credit in these projects.[4]

The example presented above assumes away many complications as any example must, but the introduction of such complications as the effect of interest rates on replacement costs, of inflationary expectations raising the costs of completing the project, and of the degree of specificity in the component parts of the project, would alter the numbers and the empirical applications, yet the basic point would not change. Moreover anything which leads entrepreneurs to expect that there will be more funds available and therefore a lower interest rate than actually occurs will eventually generate higher interest rates.

During the period of unusually high interest in 1981, some economic analysts argued that investment activity was healthy despite the fact that the interest rate had risen to over 20 percent. One of the reasons given in support of this view was that producers were borrowing at such high rates and that therefore they must feel that the investment projects will generate a greater than 20 percent return. Thus, profitable investment activity had not dried up, and entrepreneurs must be very optimistic because of their strong demand for funds. Of course, what is true in this argument is that only people who anticipate that the benefits outweigh the opportunity costs will borrow funds at 20 percent. One doubts, however, whether the borrower of funds at a 20 percent interest rate, who expected to be able to borrow funds at 10 percent and has lost millions of dollars because of the higher interest rates, will view the investment climate as healthy. Surely he will prefer to borrow than not, given his desperate straits—but with such a notion of health one can only wonder what ill-health would be like.

The real question that must be examined is why there have been so many errors in anticipating the profitability of investment projects and the level of interest rates. Why, during the normal course of affairs, do we see some people making errors, but most making correct decisions with little disruption to economic growth? Why, at other times, do we observe that the majority of entrepreneurs are induced into making poor investment decisions?

The success of entrepreneurs is almost wholly dependent on their ability to deal with the uncertainty of the future. The signals that entrepreneurs rely upon (prices and interest rates, et al.) are geared to capture information about future events. An explanation of business cycles must examine the reasons why these entrepreneurial tools fail at certain periods of time. One candidate involves the methods used to administer monetary policy. Expansionary monetary policy that increases the availability of funds for investment through open-market operations initially lowers the interest rate below what it would have otherwise been. The expansionist monetary policy causes price inflation, which after a time induces the monetary authorities to reverse the policy. Because the monetary authorities have a history of trying to affect peoples' expectations by pronouncements, one can rarely base his plans on what the monetary authorities say they will do. But the reversal of the inflationary policies is inevitable—usually before the inflation causes the destruction of so much of the industrial structure, as in Germany in the early 1920s. After having induced lower interest rates by increasing the money supply, the monetary authorities induce higher interest rates by reversing this policy.

The major point being stressed here is that at least one key market signal for allocating resources over time—the interest rate—is distorted by government monetary policy and therefore generates serious coordination problems. Changing incentives by altering tax policy will not remove these distortions to the capital structure any more than it will address the problems of distortions to market prices caused by regulatory policies. Stimulating the aggregate or macroeconomic levels of savings and investment will not solve the uncoordination generated by monetary policy which channels these funds into malinvestments.

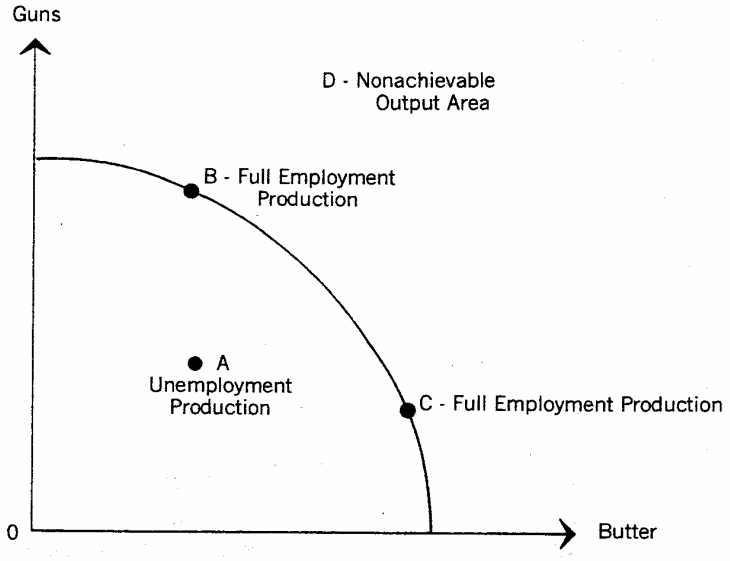
IV. Keynesian, Neoclassical, Supply-Side, and Market-Process Approaches

An interesting way to illustrate some of the critical differences among Keynesian, neoclassical, supply-side, and market-process views of economic growth is provided by an analytical tool called "the production possibilities frontier," which portrays the locus of all technologically efficient, full-employment opportunities that the economy can reach. (See Figure 4.) Areas to the right of the curve represent nonachievable output because the technical apparatus of the country is

not sufficient to produce such high levels of output even when the economy is fully coordinated and operating at "full capacity." Areas within the curve denote production possibilities that are associated with higher than technically efficient unemployment levels—unemployment of all factors of production including land, capital goods, and labor. Although, in reality, one would want to consider all goods and the nearly infinite number of possible combinations among these goods, for expository purposes we will let the graph demonstrate the production of only two goods. This simple graph examines the traditional split among neoclassical, Keynesian, supply-side, and the market-process approaches.

Standard neoclassical microeconomic theory adopts assumptions and models that are basically concerned with the desirability of point B relative to point C from the perspective of the consumer. If one adopts the neoclassical view of the world and follows its basic assumptions, one will reach the conclusion that the economy will always tend to a full employment situation and that the economy will automatically jump from point B to C or from point C to B as consumers desire. The Keynesian challenge to neoclassical economics addressed points such as A where it appeared that the economy had stagnated at a state of high levels of unemployment and showed little tendency to move to a full employment situation, such as B or C, as neoclassical economics would lead one to believe. Economists were essentially left with two contrary theories to explain one world. One postulated an automatic market mechanism able to bring the economy to full employment, and the other postulated a market mechanism more likely to stagnate at intolerable levels of unemployment.

FIGURE 4



In an attempt to reconcile these two theories, Paul Samuelson developed what has been called the "neoclassical synthesis," which essentially maintained that aggregate demand policies were necessary to push the economy toward the production possibility frontier—but once the economy reached any point on the frontier the neoclassical notion of market adjustment took over and shifted resources to areas where consumers most readily demanded them. The idea was that government is needed to assure that the economy hovered around the production possibilities frontier. If the economy deviated significantly from the frontier, unemployment, low national product, and low national income generated negative expectations which rippled through the economy (i.e., the multiplier) and resulted in an inadequate level of aggregate demand. However, once government monetary and fiscal policies assured a reasonable level of aggregate demand then the market could perform reasonably well.[5]

Market-process economists point out that construing the jump from A (recession or a depression) to B or C (full employment) in terms of aggregates ignores a number of important considerations, for the economy is not a piece of clay easily molded by aggregate policies. Whether the economy moves along a path of A→B or A→C is critically important. Machinery, trained laborers, resource requirements, etc., geared to produce B cannot be switched to produce C without a disruption to the economy. If government monetary and fiscal policies distort prices, profits, and the interest rate and therefore push the economy toward B while voluntary exchange and consumer preference would have led to market signals that geared the economy toward C, then retooling of the economy from A to C will lead to significant economic problems. The boom caused by government policy employing resources in the direction of B will generate the bust or recession when the productive equipment, laborers, etc., are inevitably retooled to be coordinated with consumer preferences at point C. The reason the economy was in the range of point A to begin with is precisely because of past monetary and fiscal policies channeling resources into malinvestments that later had to be liquidated and retooled.

The value of these insights is exemplified by the fact that market-process economists warned of the coming depression of the 1930s while the economy was booming in the 1920s. They were able to determine that market signals—prices, profits, and interest rates—were being distorted by government policy and that the scarce resources were being mischanneled and malinvestments were being created because distorted prices and profits were misdirecting entrepreneurs into sending resources into the wrong sectors of the economy.

What is critical for economic growth in a market-process economist's view is not so much the overall level of activity in the economy, nor merely how many resources are being devoted to investment and consumption, nor some aggregate measure of productivity or percent-

age increase of GNP. Rather, it is whether or not the plans of entrepreneurs who are allocating particular new materials, capital goods, labor, and consumer goods are coordinated with the plans of other members of the economy. The problem of coordination, far from being minimized by current monetary and fiscal policy, has been greatly aggravated by it in the market-process view. Merely stimulating aggregate demand or aggregate supply doesn't address the real requirements for sustained economic growth. The critical aspects missed by Keynesian and neoclassical economists when dealing with growth are the need for coordinated economic activity, the effects of institutional changes on individual action, and the effects of government economic policies on market coordinating information generated by such market signals as prices, profits, and the constellation of interest rates.

Supply-side economists on the other hand confuse the roles played by different market signals. They especially misconstrue the nature of *prices*. For example, these economists have discussed the need to change the relative prices of consumption and savings and of leisure and work in order to encourage investment and enhance productivity.[6] However, no such "prices" exist because "consumption," "leisure," and the like are summary categories of particular types of behavior and not economic goods. Prices, as generated by the market, express the exchange value of *specific* goods and services—not general classifications of human activity. Prices are the result of a valuation process that attempts to capture the interplay between the utility that a good offers to consumers and the opportunity costs of the producers who supply the good. Prices aid market participants in making the benefit-opportunity cost comparisons that are necessary to channel resources into the production of goods most urgently demanded by consumers.

Nor is the distinction between relative prices and profitability only a theoretical refinement. For if supply-siders feel that in addressing incentives, they are also addressing the coordination problems inherent in pricing, their policies will end up being woefully short-sighted. In their conceptual confusion, they run the risk of overlooking coordination problems altogether. If relative price information is distorted, then the most urgently demanded goods are not produced.

Accurate price information helps ensure that the "right" things will be produced. Profitability, on the other hand, does not provide the information of what specific goods and services to produce. Rather it provides the incentive for producers to use price information effectively. The decision to produce and the choice of what to consume are made at different times. The producer or entrepreneur is always dueling with uncertainty as he tries to guess consumer demands, and prices are an important calculating tool. But distorted prices will tend to generate distorted plans which result in market coordination problems, regardless of either incentives or profitability.

Thus supply-side economics does address the market role of incen-

tives, but it has not addressed the informational problems associated with economic coordination. Supply-siders have correctly focused on the disincentives toward harder and longer work when marginal tax rates are high. However, even if supply-side tax policies are instituted and the level of savings and investment increases dramatically, the informational problems associated with distorted prices and interest rates that guide the channeling of this investment remain. For example, tax cuts do not address the problem of determining which specific capital goods should be bought, where should new plant and equipment be located, how capital-intensive should any given production process be, and how do these investment plans dovetail with the plans of other producers and with consumers. These problems can be solved only by removing the distorting influences on prices and other market signals. Despite their claims to the contrary, supply-siders are still dealing in the realm of macroeconomics in much the same way as aggregate demand theorists. By confusing relative profitability with relative prices, supply-side economics has missed the crucial issue of microeconomic coordination.

Assuming away critical informational problems has a well-established tradition in economics. It is not widely known that Karl Marx had a keen awareness of the coordination problems that must be solved in a market economy. However, Marx ignored the key informational problems inherent in a centrally planned economy.[7] As soon as Marx discovered a possible market coordination problem, he immediately assumes that a centrally planned economy would have no such problems. Neoclassical economists, many of whom insightfully focused on the informational problems associated with resource allocation in a socialist or centrally planned economy, assumed away crucial information problems when they drew their isoquants and their indifference curves. The neoclassical notions of perfect competition and monopoly are further evidence of the lack of understanding of the market's function of generating, as well as disseminating, information. Somehow, some way, all the critical information is assumed to be known. Consumer preferences and consumer demand, technical transformations and marginal cost curves are all obvious to everyone, and coordination is automatically achieved simply by following neoclassical optimality rules. Who would need a market if we had all of this information—all we would really need is a very large computer.

Now the supply-side economists assume away another set of informational problems. One can only guess at the reason that market coordination problems have not been addressed. One possible reason is the use of conventional neoclassical tools which assume that the information needed to solve coordination problems is readily available and therefore coordination is automatically achieved if neoclassical optimality rules are followed. In this view, the market economy becomes a giant "computer" (perfect or flawed depending upon the

economist) that assures the efficient allocation of resources and maximizes output.

The market-process economist sees the market in a fundamentally different role. In his view, the value of the market lies in its institutional role for discovering and disseminating information, information that is not available in other institutional settings and that is then effectively distributed to economic agents who can utilize it to coordinate their plans with the plans of others.

An alternative explanation is that supply-side economists believe that an unhampered market tends to solve the problems of economic coordination. If this is true, then an unhampered market also effectively deals with the problems of incentives. While supply-side economists have recognized the distortions to the market-incentive system they have simply overlooked the fact that these same economic policies also distort market information. This puts supply-side economists in a somewhat ironic position. If they continue to focus exclusively on incentives, then the supply-side approach is inadequate. If they expand their theoretical and policy horizons to deal with problems of information and plan coordination, there will be little to distinguish supply-side from market-process economists who, for decades, have recognized and analyzed the incentive problems caused by taxation as well as the distortions of market information caused by monetary and regulatory policies.

V. Policy Recommendations

If one were to accept the goal that government policy should be primarily concerned with increasing productivity and stimulating economic growth, then the market-process perspective would suggest that the government should systematically eliminate policies that distort market signals—particularly relative prices, profits, and the interest rates. One would first attempt to eliminate those policies that cause the most distortion. This is hardly an easy task, but certainly monetary policies would have to be considered as critical as the realigning of incentives through tax policy. Supply-side tax policies designed to alter incentives to increase the level of savings and investment are of questionable value if this encouragement results in the production of malinvestments. Supply-side tax policy must be accompanied by an equally important focus on coordination problems caused by other distorting economic policies in so far as the ultimate aim is economic growth.

While it would be best to repeal first those policies that have the most distortive effects on the economy, if political reality dictates beginning with a program of marginal tax-rate cuts, critics of supply-side policies would be wrong to oppose such a move. But insofar as these critics are alerting supply-siders to unaddressed or underemphasized problems associated with other government policies that

may thwart supply-side goals, their advice is invaluable. Supply-siders must understand that the lack of incentives is only part of the productivity problem and that there must be a systematic effort to repeal distorting economic policies. The level of savings and investment is important, but problems of market coordination may be even more significant.

On the other hand, government interventions on the supply-side—"reindustrialization," new taxes on consumption instead of investment, business subsidies, and the like—would damage long-run prospects for economic growth in the same way that past demand-management policies did. Like the earlier policies, they would distort market signals and misallocate resources.

Notes

1. Therefore, an individual's "economic growth" decision involves the attempt to create a future circumstance where he or she will be able to command more scarce resources in the future than he or she would otherwise be able to do.
2. Martin Feldstein, "Inflation, Taxes, and the Rate of Savings" (Lecture delivered at a conference on "Inflation: The Consequences for the Economy," sponsored by the Institute of Humane Studies and the Austrian Economics Program, Rutgers University, Newark, N.J., April 28-29, 1979).
3. Robert J. Smith, "Preserving the Earth—The Property Rights Approach," *Policy Report* 4 (Washington, D.C.: Cato Institute, February 1982): 1.
4. F. A. Hayek, "Investment that Raises the Demand for Capital," in idem, *Profits, Interest, and Investment* (Clifton, N.J.: Augustus M. Kelley, 1975), pp. 74-76.
5. William H. Branson, *Macroeconomic Theory and Policy* (New York: Harper and Row, 1972), pp. 3-4.
6. The confusion over the role of relative prices and relative profitability is evident in even the most prominent supply-side economists. For example, see Paul Craig Roberts, "The Breakdown of the Keynesian Model," *The Public Interest*, no. 52, (Summer 1978); and Norman Turé, "The Economic Effects of Tax Changes: A Neoclassical Analysis," in U.S. Congress, Joint Economic Committee, *Special Study on Economic Change* 4, *Stagflation: The Causes, Effects and Solutions* (December 17, 1980): 316.
7. David Lavoie, "Rivalry and Central Planning: A Reexamination of the Debate over Economic Calculation under Socialism" (Ph.D. diss., New York University, 1981), pp. 165-169.