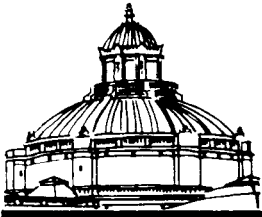


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A SUMMARY OF PREVAILING VIEWS ON THE SOURCES OF INFLATION

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ABSTRACT

It is the purpose of this paper to present the range of viewpoints concerning the causes of inflation. Inflation is defined and distinguished from changes in relative prices. The Monetarist, Post-Keynesian, and neo-Keynesian positions are discussed to illustrate the variety of perceptions as to the sources of sustained increases in the general price level.

A SUMMARY OF PREVAILING VIEWS ON THE SOURCES OF INFLATION

Inflation is defined as a continual rise in the general price level. It is a weighted average of the money prices of goods and services being traded in the market place. Inflation can also be viewed as a decline in the purchasing power of money in that a rising price level means increasingly greater amounts of money are required to purchase the same quantity of goods and services. As opposed to the general price level, which determines the rate at which money is exchanged for all goods and services, relative prices are the rate at which goods and services can be exchanged for one another. Relative prices are expressed in terms of goods and services rather than in dollars. For example, one apple might be worth two bananas whereas one banana would be worth one-half of an apple.

It is interesting to note that in a barter economy, in the absence of money, when goods and services are exchanged, only relative prices can change and inflation would be inconceivable. If, for example, consumer preferences changed in favor of apples then the relative price of an apple might rise to three bananas. At the same time the relative price of a banana would fall to one-third of an apple.

Supply-induced Price Effects

It is important to distinguish between inflation on the one hand and price increases which occur in specific sectors of the economy on the other. Price

increases which begin in one sector due to weather-induced shortages or OPEC actions may affect prices throughout the economy, particularly in those sectors which incorporate food or energy products as factor inputs. Such price increases are primarily changes in relative prices and, it is generally agreed, once these high prices have been absorbed there will be no further upward pressure on the general price level as a result of the initial increase.

When OPEC raises the price of oil, or when food prices rise due to smaller harvests the result is a change in relative prices. For example, oil's price in terms of coal has risen while coal's price in terms of oil has fallen. As the result of such a shift in relative prices there may be changes in the allocations of resources (e.g. there will be greater use of coal, and less of oil) but there will not necessarily be a sustained increase in the rate of inflation.

There is general agreement on the point that inflation cannot continue as the result of a supply shock such as an OPEC price hike without an accommodative increase in the money supply. Because of the pervasive effects of a supply shock such as a petroleum price increase, the Federal Reserve can act to diminish any possible resulting slowdown in economic activity by temporarily accelerating growth of the money supply. Inflation is not likely to continue as the result of such a supply shock without this accommodative increase in the money supply. These isolated supply side shocks are not capable of supporting sustained increases in the general price level.

There are lags in the process by which the higher prices for factor inputs are incorporated into consumer or producer prices but once the transmission is complete there is no further upward pressure on the general price level as the result of the original increase. Michael Bazdarich writing in the Economic Review of the Federal

Reserve Bank of San Francisco addresses this point:

Consequently, evidence on monetary accommodation is crucially important in identifying inflation's causes. Again, an increasing money supply is the absolutely necessary symptom, the sine qua non, of any inflation. Holding milk prices frozen, or clothing prices, or even oil or auto prices, while allowing other inflationary phenomena to continue, would not materially change the nature of the inflation process. However, holding the money supply fixed, though letting other factors continue to rise would soon bring any inflation to a sudden halt. Therefore, identifying some factor as a systematic cause of monetary expansion is the one reliable way to mark that factor as a cause of the inflation. 1/

These supply shocks may contribute to increases in the general price level, but on their own would not be capable of generating the sustained, high rates of inflation which we have recently experienced. As economist Robert Gordon writes:

Supply shocks can cause the U.S. inflation rate to jump about erratically, but in the absence of supply shocks the U.S. inflation process is dominated by inertia that is both the blessing and the curse of policymakers. Inertia can be a blessing when it prevents an energy price shock from becoming fully and instantly incorporated into wages and non-energy prices. But inertia can be a curse when it interferes with the desire of policymakers to cause a deceleration in the inflation process. 2/

Demand-induced Price Effects

A stimulus from the demand side of the economy may also be responsible for an increase in the price level. Factors affecting the aggregate demand curve include Government spending, tax policy, and monetary policy. All of these may have varied effects on prices in the short run and the magnitude of these effects depends, in part, on the stage of the business cycle. Some of these

1/ Bazdarich, Michael. Money, Inflation and Causality in the United States, 1959-1979. Federal Reserve Bank of San Francisco, Economic Review. Spring 1980. p. 52.

2/ Gordon, Robert J. Monetary Policy and the 1979 Supply Shock. National Bureau of Economic Research. Working Paper No. 418. December 1979. p. 17.

factors affect the price level with a considerable lag, which complicates the problem of short-run analysis. This analysis focuses on the long-term effects of a number of factors that influence aggregate demand.

Figure 1
SHIFT IN AGGREGATE DEMAND

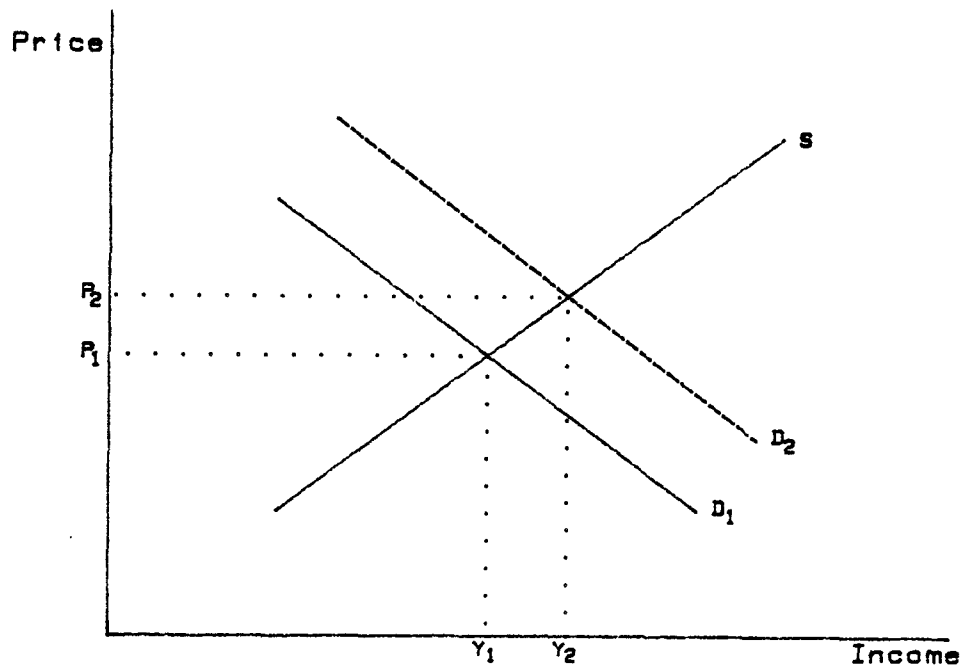


Figure 1 illustrates an increase in aggregate demand. In this representation the vertical axis measures the price level and the horizontal axis measures output (Gross National Product). All of the points along the demand curve (D_1) represent combinations of price and output that satisfy consumers. As the price (P) increases the output (Y) demanded in the economy decreases. The upward sloping supply (S) curve traces out price and output combinations at which the labor market clears. Meaning that, with given capital stocks, technology, and supplies of raw materials, demand for labor equals supply of labor. It is the intersection of these two curves which represents the equilibrium point for the economy as a

whole. It can be seen that when aggregate demand increases (shown here as a shift from D1 to D2), say, due to a decrease in consumers' desire to save that leads to increased consumption, the price level rises (from P1 to P2). There is also a gain in income (from Y1 to Y2).

The Monetarists

While there are variations, the main thrust of the monetarist argument centers on the growth rate of the money supply. Monetarists argue that an excess supply of money is the source of a rising price level. They claim that growth of long-run real output is unaffected by movements in the money supply but is determined rather by such factors as technology, the labor market, availability of natural resources and the size and growth of the capital stock. Money growth rates can, in their view, have effects on the real level of output but these are considered to be temporary (several quarters) with their magnitude determined in large part, by the extent of inflationary expectations.

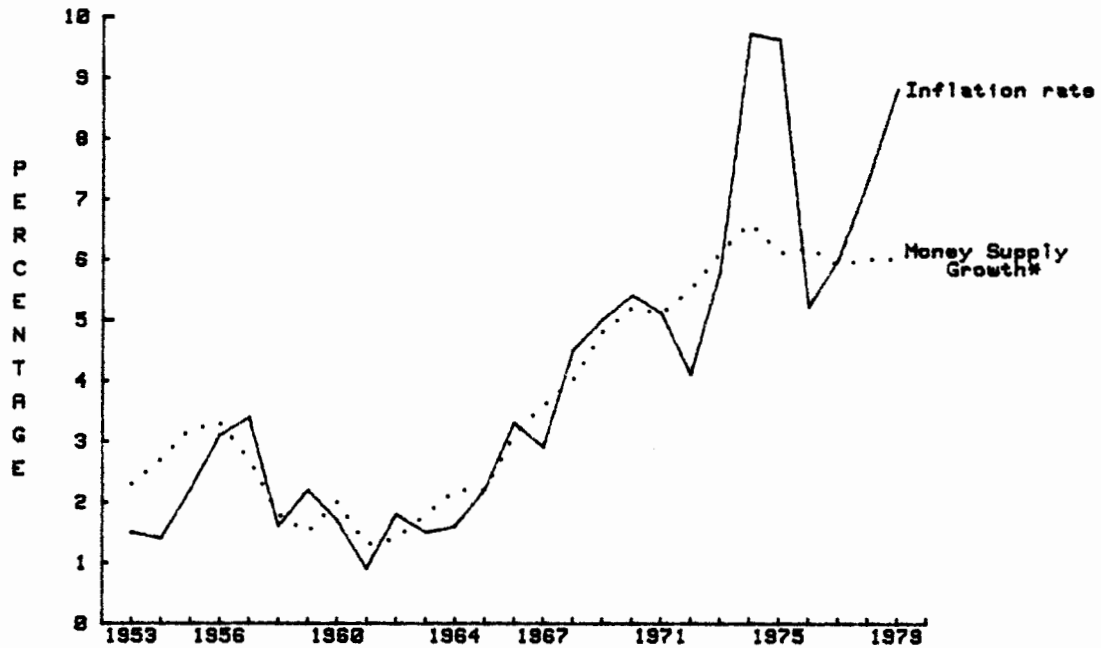
The more accurate the expectations of inflation, monetarists say, the less significant will be any changes in the growth of real output due to a change in the rate of growth of the money supply. In the short-run any attempt to slow or stop an inflation by slowing the rate of growth of the money supply may have redistributive effects and could cause recession, diminished production, unemployment, and excess capacity. Eventually, however as the new state of affairs comes to be embedded in expectations and business decisions, the real effects will disappear. 1/

1/ Solow, Robert M., "The Intelligent Citizen's Guide to Inflation", The Public Interest, Winter 1975, No. 38. p. 53.

Monetarists maintain that economic decisions are based on relative prices rather than absolute prices, and as a result, in the long run, real values (i.e. inflation adjusted GNP) will be little changed due to variation in money supply growth rates. They argue that in the long run decision-makers adapt well to an inflationary environment and as a result there is little reallocation of resources, therefore the course of the business cycle cannot be altered significantly through monetary policy. In the long run, monetarists argue all of the effects of money supply growth in excess of demand will be on the price level.

It is not known precisely how long it takes for changes in the money supply to affect the general price level. The length of time, or lag, between cause and effect has been said to vary from several months to many years. This is a point that is emphasized by the monetarists in the defense of a pegged growth rate for the money supply. They maintain that the economic information available to the policy-maker is not sufficient to justify using the money supply as a level in economic policy. Figure 2 shows the historical relationship between the general price level and the money supply. Monetarists claim that these parallel trends clearly demonstrate the effects of changes in the growth of the money supply upon the price level. Plotted together are year-to-year changes in the implicit price deflator for Gross National Product (a broad measure of the price level) and money (M1) growth rates averaged over a five year period ending with the year plotted.

Figure 1
MONEY SUPPLY GROWTH AND INFLATION
1953 TO 1979



* Money Growth figures represent average growth rates for previous five years
Sources: Board of Governors, Federal Reserve System
Bureau of Economic Analysis, Department of Commerce

At the heart of the monetarist view is the quantity theory of money which is a theory of the demand for money. Though it appears in different forms, it permits a distinction between the nominal quantity of money and the real quantity of money. The nominal quantity is defined in units such as dollars or marks and includes any inflation. The real quantity of money is measured in terms of the goods and services for which it can be exchanged and discounts inflation. Proponents of the quantity theory maintain that the demand for money is a function of the costs and returns of alternative forms of wealth and that this relationship is relatively stable over time, therefore the demand for money is relatively stable over time.

One way of looking at the real quantity of money held by a household is to compare it to the period of time that household can maintain an average expenditure level using a given money balance. If nominal balances do not

change when the price level rises that time period is shortened and the real quantity of money held by that household falls. Households, monetarists argue, determine what money balances they will hold based upon the real rather than the nominal balance. If the money stock grows too rapidly relative to the quantity of goods and services, households will end up holding greater real money balances than they demand. Increased spending that is aimed at reducing money balances to some desired level has the effect of increasing the general price level and, in turn, reduces real balances. 2/

The Keynesians

Proponents of this point of view can be subdivided into two groups, the neo-Keynesians and the Post-Keynesians. Both serve in opposition to the monetarist tenet that money supply growth alone determines the rate of change of the price level.

The neo-Keynesians argue that there exists an inherent bias in the economy for an upward moving price level. They say that because prices tend to be rigid downwards it follows that the general price level, on average, will rise. If prices are inflexible in the downward direction frequent changes in relative prices will probably result in a rise in the overall price level. Since the Second World War there have been seven contractions in the business cycle during which upward pressure on prices might have been expected to recede, yet only during the first downturn did wholesale prices fall.

2/ Burger, Albert. Federal Reserve Bank of St. Louis Review, December 1978. p. 8-9

Neo-Keynesians also argue that expectations play an important role in sustaining the rate of inflation. For example, workers, in part, base their wage demands upon past changes in the price level so that inflation is carried over from consumer prices to producer costs. These expectations form the basis of what Otto Eckstein of Data Resources refers to as the core inflation rate. These expectations, which underlie trends in labor and capital costs, have been built up over such a long time period that it will be a long slow process to bring them down again. Otto Eckstein remarked in his study prepared for the Joint Economic Committee that "the total improvement in core inflation which can be achieved over 10 years, assuming the combined tax incentive policies and the tougher demand management policies is 1.3%." 3/

On the other hand the Post-Keynesians argue that inflation is "symptomatic of a struggle between organized groups, each trying to obtain a larger share of the available national or world income for themselves." 4/ It is argued that this conflict is irreconcilable and that the only method for resolving it would be a form of "social contract" involving income policies. In the words of Alfred Eichner:

In return for not exercising the market power which enables them to obtain higher than called-for increases in nominal income thereby contributing to the wage-price inflationary spiral, the important interest groups--the nation's largest corporations and trade unions among them--would be given a more direct voice in determining the growth of real

3/ U.S. Congress. Joint Economic Committee. Tax Policy and Core Inflation. April 10, 1980. p. 41.

4/ Davidson, Paul. "Post Keynesian Economics". The Public Interest. Special Issue 1980. p. 163.

income. This would be the result of the influence which those interest groups were able to exert, through the social and economic council and its planning secretariat, on the rate and composition of public spending. Once that set of decisions had been reached, the rest--the rate and composition of private investment, the level of prices and the growth of real household income--would fall into place. 5/

The consequence of these competing views is that there tends to be confusion and pessimism over the issue of how to control inflation. There are substantial disagreements over certain policies, particularly price controls. Monetarists argue that they are useless and even damaging, while some neo-Keynesians say that they are helpful in lowering inflationary expectations. There is more agreement on the subject of reducing Federal deficits, insofar as increased Federal borrowing puts upward pressure on interest rates, leading the Federal Reserve to create more money in an attempt to moderate interest rates. To the extent that an increased money supply growth rate raises the inflation rate, however, interest rates eventually rise as well.

There has, nevertheless, been increasing agreement on one aspect of the inflationary problem and that concerns its costs. It is clearly recognized today that one of the serious consequences of long periods of inflation is that the role of currency as a store of value is diminished and thus the incentive to save is reduced as are the funds available for capital investment. Another is the effect on the tax system; while effective individual tax rates are rising

5/ Eichner, Alfred. Challenge. Post-Keynesian Theory: A Look Ahead. Challenge. May-June 1979. p. 53.

due to increases in income, purchasing power is declining. The volatility of inflation creates business uncertainty, makes capital investment decisions riskier, and diverts resources into speculative activity aimed at beating the inflation. Inflation also has the effect of reducing the information content of market prices, rendering the price system less efficient as a determinant of economic activity. Thus as the costs of sustained inflation are recognized the potential costs of reducing the inflation rate become less of an obstacle.

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