

INTRODUCTION

This book offers a survey of the developments of inflation theory during the two decades 1960–80, developments that reflect the economic history of this period. The process of inflation began in the early 1960s in a moderate way, accelerated at the end of the decade, and reached a peak just before the world recession in 1973–74. Since then the inflation process seems to have lost its dynamics in most of the industrial countries; that is, inflation rates show a tendency to decrease. These events have stimulated economic theorizing and model building designed to shed some light on the inflation process as experienced by the Western countries in these two decades.

The beginning of the new debate in inflation theory can be characterized by the attempt to explain the inflation process as “causal”: Does inflation originate in the labor market or can it be explained by the rate of growth of the money supply? Later, with the acceleration of inflation, the emphasis shifted to explaining inflationary expectations. The treatment of expectations distinguishes the new inflation models from the traditional theory.

Since the end of the 1960s the widely accepted view based on the “neoclassical synthesis” (P. Samuelson) has been increasingly challenged. The consensus has disappeared. Two schools have emerged and they both emphasize the difference between their approaches: neo-Keynesian macroeconomics versus the

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monetarist approach. Neither school is homogeneous; both encompass a spectrum of views. Monetarism as discussed in Chapter 4 is defined by the following four propositions:

1. Stability of the private sector
2. Long-run neutrality of money
3. Acceptance of the short-run Phillips curve
4. Dislike of activist economic policy

Acceptance of all four propositions makes one a monetarist “Mark I” along with Milton Friedman. If one rejects proposition 3 and replaces it with the proposition of the short-run neutrality of money, one espouses monetarism “Mark II” as do the proponents of the rational expectations school.

What, then, constitutes neo-Keynesianism? Acceptance of the following propositions:

1. Instability of the private sector or slow adjustment processes to return to equilibrium
2. Long-run neutrality of money
3. Existence of a trade-off between inflation and unemployment
4. Preference for a countercyclical policy

For a long time the Keynesian inflation theory was identified with the Phillips–Lipsey model of inflation, implying a stable trade-off between inflation and unemployment. Recently J. Tobin (1980), a proponent of neo-Keynesian theory, has accepted the view of a short-run and a long-run Phillips curve, according to which a trade-off between inflation and unemployment is only temporary. With this twist the neo-Keynesian theory and monetarism Mark I approach each other. Neo-Keynesian macroeconomics can be interpreted as disequilibrium economics in which the emphasis is on price and wage “stickiness” rather than on instantaneous market clearing.

The book begins with some problems of definition. As the student soon discovers, the problem of inflation starts with the attempt to define it. Although there is no lack of definitions of inflation, a generally accepted definition does not, in fact, exist. Therefore we shall use a pragmatic definition: “Inflation is a process of continuously rising prices, or continuously falling value of money” (Laidler and Parkin, 1975).

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The following problem might also surprise the student. Although the whole world speaks about inflation, measuring inflation is not a simple exercise. One is immediately confronted with the problem of calculating a price index. No single approach to index construction yields the “optimal” index. Chapter 1 therefore describes the construction and characteristics of the two most important price indexes: the Laspeyres Index and the Paasche Index.

As mentioned, the development of a theory of inflationary expectations can be considered the essential difference between the new theory of inflation, explained in Chapters 3 and 4, and the traditional theory, described in Chapter 7. In Chapter 2 the two central concepts of expectation formation are introduced and interpreted: (1) adaptive expectations and (2) rational expectations.

According to the model of adaptive expectations, the forecast for the next period is a weighted average of past inflation rates. Expectations are corrected by some fraction of the past period’s expectations error. The adaptive expectations mechanism emphasizes the “learning behavior” of the agents. This approach was challenged by the rational expectations school, which argues that agents are aware of the structure of the economic system; the rational way for them to form their expectations is to base them on the predictions of the economic model. An implication of this approach is that agents use their information efficiently (i.e., do not waste information) and do not make systematic forecast errors. At this point the discussion of the model of expectation formation in Chapter 2 ends. The far-reaching implications of the two different models of expectations appear in the discussion of the Phillips curve (Chapter 3) and in the discussion of the monetarist inflation theory (Chapter 4).

Despite all the criticism of the Phillips curve model, it can be considered one of the central models of the new inflation theory (Chapter 3). The Phillips curve was first interpreted by R. Lipsey as the neo-Keynesian inflation theory. It identified the labor market as the source of inflation and led to the notion of a stable trade-off between inflation and unemployment. This concept dominated the discussions on inflation in the 1960s. However, at

the end of the 1960s M. Friedman and E. Phelps differentiated between the short-run and long-run Phillips curves. This theory became known as the “natural rate of unemployment hypothesis.” This hypothesis, which has been generally accepted almost everywhere, says that the rate of unemployment can deviate from its equilibrium in the short run but will return to its natural rate level in the long run after an adjustment for inflationary expectations. The natural rate hypothesis was challenged by the rational expectations school, which argues that economic agents use their information efficiently and do not make systematic forecast errors, as implied in the adaptive expectations model (see Chapter 2). Rational expectations together with the further assumption that markets always clear lead to the result that not even a short-run Phillips curve exists. The criticism from the school of rational expectations has livened the discussion, but the power of this theory’s logic is greater than its value as a description of the real world.

The Phillips curve model is thus compatible with various interpretations: with the neo-Keynesian interpretation (Phillips–Lipsey) and with the neoclassical–monetarist interpretation (Friedman–Phelps). In the school of rational expectations, however, and only in this school, the Phillips curve disappears as a systematic connection between the rates of inflation and unemployment.

The chapter on the Phillips curve also contains an analysis of the forms of unemployment rates, in which the results of the New Microeconomics (Phelps et al., 1971) are compared with the Keynesian concept of “involuntary unemployment.” This section clarifies several concepts as well as criticizes the tendency of the New Microeconomics to reduce the total rate of unemployment to frictional or search unemployment.

In the new standard textbooks of macroeconomics, such as R. Dornbusch and St. Fischer (1978) or R. Gordon (1978), the Phillips curve is introduced into the IS-LM system and is interpreted as a supply curve. An analysis of this expanded IS-LM model ends the chapter on the Phillips curve. It is followed in Chapter 4 by a detailed discussion of the inflation theory of monetarism. M.

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Friedman's dictum "Inflation is a monetary phenomenon" is the motto of this theory.

What is monetarism? It is first of all the summation of various theoreticians who were united in their criticism of the Keynesian orthodoxy that ruled at the end of the 1960s. It is furthermore the attempt to create a new paradigm to stand against Keynesian macroeconomics. Although various authors have made important contributions, the central role of Friedman in the formulation of monetarist theory or, more precisely, of monetarism Mark I is unchallenged. Section 4.3, "From the Quantity Theory to the Monetary Theory of Nominal Income," is therefore devoted to a more detailed discussion of the Friedman version of monetarism. Afterward a standard model of monetarism is developed, which rests on three bases: (1) the quantity theory, (2) the "expectations-augmented" Phillips curve, and (3) Okun's law. In this model, changes in the rate of growth of the money supply generate real effects (i.e., they influence the rate of real growth and the rate of unemployment); in the long run, after the expectations adjustment process has terminated, the real effects disappear and only a permanent increase in the trend rate of inflation remains. This type of model, which combines monetarism with an expectations-augmented Phillips curve, was labeled monetarism Mark I earlier in the discussion.

The transition from monetarism Mark I to monetarism Mark II can be made easily in the context of the monetarist model. One has only to replace the adaptive expectations mechanism with rational expectations. In the new model the role of monetary policy is different. Changes in the rate of growth of the money supply – if they are anticipated by the agents – influence only inflation and not real output or employment. A generalization of this result is the policy ineffectiveness postulate, which states that a systematic economic policy changes only the rate of inflation and does not exert any influence on the real part of the economy. The difference between monetarism I and monetarism II is, in brief, the neutrality of money. According to monetarism I, money is neutral only in the long run; according to monetarism

II, money is neutral even in the short run. A short summary of the debate about the policy ineffectiveness postulate and a critique of the least plausible assumptions of monetarism Mark II close this section.

The last part of Chapter 4 is concerned with the monetarism of the open economy. H.G. Johnson (1976) argued that a small, open economy in the face of excess demand does not have an inflation problem but rather a problem of balance of payments. In contrast to the theory of the closed economy, an increase in the money supply does not increase the rate of inflation (since prices are determined by the “world market”) but leads to a deterioration in the balance of payments. Another group of models of the monetary approach sketches a theory of world inflation in which the world price level depends on the world money supply.

In Chapter 5 the view is entirely different. The Phillips curve model and the monetarist inflation theory consider inflation a problem of short-run stabilization policy. Inflation reflects excess demand in the goods and labor markets or excess supply in the money market. The hypothesis of structural inflation attempts to link the long-run tendency toward inflation in the industrialized economies to structural factors. A variant that has become very popular in European discussion is called the Scandinavian model. According to this model the economy is divided into two parts: an “exposed” sector producing “traded goods” and a “sheltered” sector producing “nontraded goods.” Both sectors grow at different rates of labor productivity. A wage spillover effect results in the money wages in the sheltered sector growing at approximately the same rate as the money wages in the exposed sector. The model relies on the small-country assumption, which implies that the country is a price taker in the world market. Given fixed exchange rates, the model leads to the so-called Aukrust equation with the simple message that the domestic rate of inflation is explained by the world rate of inflation and a component that depends on the difference in productivity growth between the exposed and the sheltered sectors. This model was explicitly (or implicitly) used by a number of smaller European economies

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(such as Austria, Norway, Sweden, Finland, and the Netherlands) to explain their inflation problem and to serve as a model for antiinflationary policy (especially incomes policy).

Chapter 6 discusses stagflation – a state of the economy that is as inconvenient as the word itself is inelegant. It is a condition in which inflation is combined with substantial unemployment. Two types of stagflation are distinguished: (1) stagflation as an adjustment process following a previous demand inflation, and (2) stagflation resulting from an autonomous shift in the supply function (supply inflation).

One specific type of supply inflation, the “oil shock,” is discussed in detail. Given the assumptions of the model, the supply curve becomes a vertical line on the horizontal axis. The oil shock moves the supply curve to the left in the direction of the origin. Stagflation phenomena result from this shift in the supply curve. Finally it is shown that in the situation in which the output is determined by supply, demand policy influences only the price level and has no effect on output and employment.

The final Chapter 7 provides a survey of the traditional concepts of inflation. We begin with the quantity theory of money but in the context of the neoclassical model. In this model the relative prices and the quantities demanded and supplied are determined in the real sector of the economy, whereas the general price level is determined in the monetary sector. Doubling the money supply doubles all nominal prices but leaves the relative prices and the volume of transactions constant. The quantity theory in the context of the neoclassical model explains inflation causally: The quantity of money determines the level of prices and the rate of change in the money supply determines the rate of inflation.

In 1939 J.M. Keynes wrote two long articles in the British daily newspaper *The Times*, which became the basis for his famous essay *How to Pay for the War*. Keynes investigated the relationship among inflation, taxation, and the distribution of income that results from an unanticipated increase in nonconsumption expenditures. The government’s need to finance the war manifests itself in excess demand in the goods market – the “inflation

gap.” The inflation process described in *How to Pay for the War* is basically a redistribution process in which income from wage earners with a low propensity to save and a low marginal tax rate is transferred to the entrepreneurial sector with a higher propensity to save and a higher marginal tax rate. Recently Keynes’s inflation gap model has received renewed attention by S. Maital (1972) and J.A. Trevithick (1975).

B. Hansen’s model of the double inflation gap is a straightforward extension of the Keynes model. Hansen differentiates between a goods gap (excess demand in the goods market) and a factor gap (excess demand in the labor market).

A central topic in the discussion of inflation in the 1960s was the classification of inflation into demand-pull and cost-push. Using the aggregate demand curve and the aggregate supply curve, we try to distinguish the two concepts. Although this distinction has its place in the literature of inflation, it has lost most of its significance in contemporary models of inflation.

By comparing the new theories of inflation as set out in Chapters 3, 4, and 5 with the traditional theory, we can easily see the difference: The traditional theory explains changes in the price level, whereas the new models focus on the inflationary process per se. The traditional inflation literature manages to do without inflationary expectations, whereas the new inflation models consider inflationary expectations the core of the inflationary process.

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Inflation: definition and measurement

This book describes the most influential concepts of traditional and recent theories of inflation. In the discussions of the various models, the reader will probably notice that the concept of inflation is used without further explanation. The problems associated with inflation do not begin with the explanation of it, however; they start with the attempt to define it. In fact, there is no generally acceptable or satisfactory definition. In the literature, a pragmatic definition has the widest acceptance. Although it lacks precision, the following definition has an advantage in that it corresponds to common usage: “Inflation is a process of continuously rising prices, or equivalently, of continuously falling value of money” (Laidler and Parkin, 1975, p. 741). It refers to the symptoms of inflation but tells nothing about the causes and effects of inflation.

Some comments may make the definition of inflation more precise.

- a. The definition states what inflation is not; that is, it is not a one-time or short-run increase in the general price level. Similarly, one cannot label as inflation price increases during the recovery phase of the business cycle that are rescinded through price reductions during the recession. Only when price increases are irreversible can one speak of inflation without qualification.

- b. One must emphasize that inflation does not concern increases in the prices of individual commodities; it refers to an increase in the general price level, the weighted average of all prices.
- c. One should hesitate to label as inflation increases in the general price level at a rate of less than 1 percent per year. The rate of increase in the general price level that merits the title “inflation” depends on the sensitivity of economic agents to inflation. This is necessarily a subjective criterion.

In addition to the symptom-based definition of inflation, one finds in the literature more specialized definitions that take into account either the causes or the effects of inflation or refer to some particular characteristic of the inflation process. M. Bronfenbrenner and F.D. Holzmann distinguish four types of definitions of inflation:

- 1. Inflation is a condition of generalized excess demand, in which “too much money chases too few goods.”
- 2. Inflation is a rise of the money stock or money income, either total or per capita.
 [Bronfenbrenner and Holzmann, 1963, p. 599]

Both these definitions are causal. In the first case inflation is traced to demand in the goods market; in the second inflation is explained as the result of a change in the money supply. In recent discussions M. Friedman has popularized the monetarist causal definition: “Inflation is always and everywhere a monetary phenomenon . . . and can be produced only by a more rapid increase in the quantity of money than in output” (Friedman, 1970b, p. 24).

- 3. Inflation is a rise in price levels with additional characteristics or conditions: It is incompletely anticipated; it leads (via cost increases) to further rises; it does not increase employment and real output; it is faster than some “safe” rate; it arises “from the side of money”; it is measured by prices net of indirect taxes and subsidies; and/or it is irreversible.
 [Bronfenbrenner and Holzmann, 1963, p. 599]

This is an extended version of the symptom-based definition of inflation that requires the increase in the general price level to have certain characteristics.