

APPENDIX

The first chart in the package provides some perspective on the association between money and prices. As can be seen from the bars on the left-hand side, on average over the past three decades the money stock and prices have tended to move together. This relationship--often referred to as the long-run neutrality of money--implies that over long periods changes in money only influence the price level and do not permanently affect real variables in the economy. The usual intuition is that if everyone's cash balances were doubled by dropping money from helicopters, the real economy would eventually end up about the same except that prices would be doubled.

But that is eventually. From the point of view of macroeconomic policy, however, the question is how long does it in fact take for the effects of a change in money to be entirely reflected in prices. There is no consensus on the answer to this question. Indeed, assumptions concerning the nature and speed of adjustment are important features differentiating the various theories of inflation. Many rational expectations theorists believe the adjustment is nearly instantaneous; monetarists believe that the adjustment is relatively prompt--perhaps as short as two or three years, while those who use a Phillips curve approach feel that it takes appreciably longer.

The next exhibit summarizes the key features of the view of inflation commonly associated with monetarists. This approach places primary emphasis on the response of inflation to growth of money. Essentially the theory holds that changes in the money stock will lead to stable and predictable short-run movements in nominal spending. Initially an increase

in nominal spending will be reflected in higher output, but over a short period of time increased demand pressures will lead to a bidding up of prices and a return of real output to its long-run growth path. Although some monetarist models--such as that developed several years ago at the St. Louis Bank--spell out this process, the more widely used monetarist approach reduces these relationships to a single equation relating prices to current and past levels of the money stock--with the full impact of money on prices typically being felt within two or three years. Such equations allow little if any role for the state of the business cycle in price determination. The remainder of our briefing will use this so-called "reduced form" money-price relationship in discussing the monetarist analysis of inflation.

The chart in the lower panel shows the relationship between money and prices in the short run. Although the lag between money and prices varies considerably among monetarist equations, a lag of two years is representative of the spirit of these equations. The chart indicates that while money and prices have many times shown a tendency to move together, there often can be substantial short-run differences between inflation and the growth of money. As you can see, the difference has been especially notable since mid-1982.

An alternative approach to analyzing the inflation process involves attempting to trace the structure of linkages in the economy and describe how aggregate demand affects pricing decisions in labor and product markets. As shown in the next diagram, a key analytical feature of most structural views of inflation is the so-called natural rate hypothesis. Essentially, this hypothesis says that there is some

degree of unemployment--determined by the structural characteristics of the economy--that in the long run is associated with stable inflation. Note that the hypothesis refers to a stable rate of inflation, not stable prices. We will address the issue of what factors affect the level of the natural rate of unemployment later in the briefing. Corresponding to this natural rate of unemployment is a level of output--labelled Y_n in the diagram--that will hold unemployment at its natural rate. Attempts to push the economy to levels of output greater than Y_n through expansionary aggregate demand policies lead eventually to accelerating rates of inflation; conversely, holding the economy below Y_n leads to declining inflation.

The process is illustrated in the diagram. The downward sloping lines are aggregate demand schedules and represent the amount of output demanded for a given inflation rate, all other things equal. The upward sloping lines are aggregate supply curves and reflect the amount of labor and capital supplied to the economy at each inflation rate, all other things--particularly expectations--equal. Starting at point A, an increase in aggregate demand, from D_1 to D_2 , will temporarily raise the level of inflation and output, and lower the unemployment rate, producing a short-run tradeoff between inflation and unemployment--point B. But as workers perceive that inflation has increased, their notion of expected inflation will adjust upward. Accordingly, they will demand larger nominal wage increases and the aggregate supply schedule (S_2) will tend to shift up until aggregate supply and demand are equal at the natural level of output, but with a higher inflation rate--point C. The rate of inflation where this process ultimately settles will be determined by the factors influencing the long-run positions of the

aggregate supply and demand schedules, with one of the most important factors being the rate of growth of money.

The natural rate hypothesis is consistent with a Phillips curve view of inflation that includes a role for price expectations and is outlined in the upper panel of the next chart. This view, which generally is used by the staff, holds that wage increases are related to the unemployment rate and inflation expectations; and price inflation is a markup on the growth of unit costs, with the markup related to demand in product markets. Labor costs--that is, wage inflation adjusted by the trend growth of productivity--carry the heaviest weight in overall costs. As shown in the upper-left portion of the flow chart, wage inflation depends on labor market conditions (usually summarized by an unemployment rate), expected price inflation, and exogenous shocks such as changes in minimum wages and social security taxes. By combining the determinants of labor costs and the markup, this approach says that price inflation is related to expected inflation, productivity trends and the degree of tightness in both labor and product markets. In addition, factors such as food and energy shocks or large changes in the prices of imported goods can temporarily affect the aggregate inflation rate.

As shown in the lower panel, the implication of the Phillips curve view is that in the short run there is a "tradeoff" between inflation and unemployment, with the position of the short-run Phillips curve depending in part on price expectations. The higher the rate of expected inflation, the higher the position of the short-run Phillips curve--P one, two, and three in the diagram. In other words, for a given rate of unemployment, higher price expectations will be associated with higher

wage increases and therefore higher actual inflation. According to the natural rate hypothesis, however, over time the economy will tend toward output levels consistent with the natural rate of unemployment-- U_n in the diagram--with inflation primarily determined by the rate of growth of money. In terms of the diagram, in the long-run the Phillips curve becomes vertical at U_n .

As summarized on the next chart, expectations are a key element in describing the inflation process. Most empirical Phillips curves assume that expectations are formed by looking at past price performance. In contrast, the theory of rational expectations assumes that, rather than extrapolating past inflation into the future, individuals use all the currently available information, together with their knowledge of the structure of the economy and the systematic reactions of policy makers, to form "forward-looking" expectations of inflation.

The spirit of rationally-formed expectations is now accepted by most economists: in forming their expectations of inflation, individuals probably do more than mechanically extrapolate past trends. But it is our view that individuals probably are not as sophisticated in forming their expectations as the rational expectations theory assumes. However, because expectations can not be observed directly, it is important to keep in mind the sensitivity of price forecasts to the factors affecting expectations. This is a point we will be returning to later in the briefing.

The next chart summarizes the major features of the Phillips curve view of the inflation process, which forms the analytical basis of the remainder of our presentation. This approach provides a description

of the dynamics of the inflation process that allows a tracing out of the effects of policy actions on the rate of inflation. In particular, because the Phillips curve framework points to particular channels of influence, we are able to identify factors that may mitigate or amplify the impact of policy actions on inflation.

The Phillips curve view does have a role for short-run effects of money growth on inflation. But the transmission mechanism involves intermediate channels operating through interest rate effects on real economic activity. Moreover, factors other than money growth can play an important short-run role in the inflation process. Finally, the Phillips curve view takes into consideration the fact that contracts and other institutional rigidities--including government actions--can limit the flexibility of wages and prices, and as a result lead to inertia in the disinflation process.

Ms. Zickler will now continue our presentation.

One of the most important, and perhaps most controversial, of the issues involved in the Phillips curve approach to inflation is the measurement of the natural rate of unemployment--that is, the rate of unemployment associated with stable inflation. As shown in the top panel of your next chart, the staff believes that, at present, the natural rate of unemployment is in the 6 to 7 percent range. This benchmark represents the threshold of labor market tightness--other things equal--above which slack demand puts downward pressure on the rate of wage increase and below which demand would outpace supply, and wages and prices would continuously accelerate. Other ongoing developments, such as disruptions to food and energy supplies, rising import prices, or increases in payroll taxes can temporarily lead to an acceleration of inflation even though the prevailing unemployment rate is above the natural rate. These shocks shift up the short-run Phillips curve in the same manner as a rise in inflation expectations.

The natural rate of unemployment has not been stationary over time. As the chart shows, each bout of accelerating inflation--from 1964 to 1969, then from 1972 to 1974, and finally from 1976 to 1980--has been associated with a higher unemployment rate. Although price shocks may have influenced the timing of these inflation upturns, the broad pattern of movement from left to right across the page illustrates the updrift in the natural rate that occurred over the past two decades.

No doubt, a myriad of factors played some role in this rise; several major explanations are presented on the next page. The two factors that we believe are most important, and which I will discuss in

more detail, are the falloff in the trend rate of growth in labor productivity and the shift in the mix of the labor force toward less experienced workers. Changes in the structure of labor and product markets that lower economic efficiency probably played a role as well, although the impact is not easily estimated. These developments might encompass, for example, the introduction of inflexible work rules, increased mismatches of workers' skills and job requirements, and government actions--such as wage floors, protectionist trade policies, and price supports. A final contributing factor to the upward drift in the natural rate was the expansion of income support programs. These induce longer spells of unemployment by reducing the incentive to search for work and by raising the wage that jobless workers are willing to accept.

The impact of declining labor productivity growth on the natural rate of unemployment began in the late 1960s, but was most striking during the second half of the 1970s, when, as the top panel of your next chart shows, the average annual growth rate of labor productivity dropped from more than 2 percent to only about 1/2 percent.

On average, nominal wage gains only can exceed the rate of price increase by the trend rate of growth of labor productivity. In other words, over time real wages and productivity must grow at about the same rate, and during the "high productivity" years of the 1950s and 1960s, workers became accustomed to real wage increases of 2 to 3 percent a year. Following the price shocks of the early 1970s, workers continued to press for nominal wage increases that they thought would not only compensate them for the large price increases, but also keep their real wages rising

at the earlier rates, despite the sharp reduction in productivity growth. As illustrated in the middle panel, business, in turn, experienced both rapid rates of increase in hourly compensation and a shrinking offset from productivity gains. Prices were marked up over rapidly increasing unit labor costs--the gap between the two lines. As long as workers' expectations for gains in real wages were inconsistent with the lower productivity trend, upward pressure on unit labor costs and prices persisted. Accordingly, the unemployment rate required to generate enough downward pressure on wages to stabilize inflation rose considerably.

At present, the staff believes that the cyclically-adjusted trend rate of productivity growth has improved somewhat, to about 1 percent over the 1980-83 period, and this development probably has lowered slightly the natural rate of unemployment relative to the late 1970s. Looking ahead, if this improvement in the productivity growth trend were to continue, we estimate that each additional 1/2 percentage point increase in the trend would reduce the natural rate of unemployment by the same amount.

The second principal factor accounting for the uptrend in the natural rate of unemployment was the shifting demographic composition of the labor force. As shown in the top panel of the next chart, the bulk of the growth in the labor force in the 1960s and 1970s occurred among youth and women. These new entrants tended to have weaker attachments to jobs and more frequent spells of unemployment--as they first looked for work, changed jobs, or moved between school or home and the labor market. This rise in so-called frictional unemployment boosted, on balance, the measured unemployment rate associated with any given level of labor market tightness.

The effect of this trend is estimated to have added slightly more than 1/4 percentage point to the natural rate between 1954 to 1965 and another 1/2 percentage point by 1978. But with the maturation of the baby-boom generation, the flow of new workers onto the job market has slowed, taking, perhaps, 1/4 percentage point off of today's natural rate compared with the late 1970s, and some further improvement could continue through the 1980s.

The next chart summarizes our views on the responsiveness of inflation to aggregate demand. Changes in aggregate demand are reflected in changes in labor and product market conditions and have some contemporaneous impact on the size of wage settlements or the markup of prices over costs. But the full effect of such changes depends on lags in the adjustment of inflation expectations and on the inertia in wage and price-setting introduced by contracts or other institutional arrangements. Within the range of 6 to 10 percent unemployment, we believe that each additional 1 percentage point of joblessness, maintained over one year, would reduce inflation by about 1/2 to 1 percentage point.

In addition to the issue of the responsiveness of wages and prices to the level of aggregate demand, there is the question of whether rapid changes in demand could have a separate effect on inflation. This so-called "speed" effect could occur as the result of the costs of adjusting to a higher level of production--for example, rising overtime pay or a bidding up of wages or materials prices. The staff's estimates of an independent "speed" effect for aggregate wage and price measures is quite small--each 1 percentage point change in the unemployment rate over a year changes inflation by a little more than 1/4 percentage point. We should

note, however, that this effect is very difficult to isolate from other influences, such as the cyclical variation in the markup.

In addition to tracing the effects of aggregate demand on prices through the labor market and wage developments, we have looked at the relationship between capacity utilization and materials costs. The top panel of your next chart shows changes in the producer price index for intermediate materials and components for manufacturing--a broad measure of materials costs. The two shaded areas highlight episodes of rapid acceleration in these costs. The middle panel shows the unemployment rate along with the capacity utilization rate, with the shaded areas designating those periods in which the unemployment rate was below our estimate of the natural rate. As you can see, the shaded areas on both charts are closely matched. This occurs because, in both of those cycles, labor and materials markets appeared to have tightened at roughly the same rate. Thus, it is difficult to isolate any separate effect of capacity utilization on prices apart from that captured by the unemployment rate. The charts also suggest that identifying a capacity utilization "flashpoint" may be difficult. In late 1972 when materials prices began to accelerate, the operating rate for materials was in the high 80s; in 1978, these prices began to pick up with the utilization rate at around 83 percent.

A broader concern is that, as shown in the bottom table, our measures of overall capacity show a considerable slowing in growth in recent years, with actual declines in some important sectors. Indeed, to date, capacity utilization rates have been rising more quickly than during previous expansions, cautioning that supply constraints could emerge before

the unemployment rate approaches the natural rate. Several factors, however, may mitigate the implications of the capacity slowdown for inflation, including available capacity worldwide and a robust recovery in domestic capital spending.

The next chart summarizes several other factors that could lead to an acceleration of inflation even though the unemployment rate remains above the natural rate. First, government-mandated cost increases, such as hikes in payroll taxes, upward adjustments in the minimum wage, introduction of import restrictions, and higher sales or excise taxes, could contribute to higher prices. Second, large supply disturbances might raise the relative price of an important commodity; the most obvious are food and petroleum. These relative price adjustments have both a temporary direct effect on the price level and a more lasting effect on the overall rate of inflation as the shock works its way through the wage-price process. But supply shocks should not always be considered fully exogenous. Periods of rapidly rising demand--here and abroad--may have laid some of the groundwork for past oil price increases and the strength of demand for individual products may determine the extent to which commodity price shocks are passed through to final goods prices.

A third factor that could lead to higher prices is a decline in the foreign exchange value of the dollar. The impact of a fall in the value of the dollar on domestic prices is difficult to separate from other macroeconomic adjustments, which may themselves cause the dollar to change. The full effect attributable to exchange rates alone can vary depending on the factors that led to the depreciation, and there is some uncertainty

about the lag with which the effect is realized. The staff estimates that a 10 percent depreciation in the dollar, other things equal, leads to around 1-1/2 percent higher consumer prices by the end of two to three years. This estimate includes the direct effect of higher import prices, the spillover effects in raising prices of domestic goods that compete with imports, and the feedback effects on wages and other costs of higher prices and increased aggregate demand.

Finally, inflation expectations could play a role in generating an acceleration of inflation during periods of high unemployment. The chart at the bottom of the page compares an estimate of inflation expectations based on the assumption that they are some weighted average of recent experience--the heavy line--with two surveys of expected year-ahead changes in the CPI. At present, all three measures suggest that individuals anticipate that consumer prices will rise 4-1/2 to 5-1/4 percent next year. If price expectations were represented accurately by the purely backward-looking series, these expectations would continue to decelerate as long as sufficiently slack demand holds down current inflation. But if workers and firms begin to expect that prices will soon be rising more rapidly than in the recent past, these higher inflation expectations could generate pressures for higher wage settlements and larger price increases even though the economy remains below potential levels of resource utilization.

It is our belief that the primary channel of government influence on inflation is through policies affecting both the growth of aggregate demand and the path by which the economy approaches the natural

rate of unemployment. But government actions also can affect several of the factors cited on chart 13. The most obvious is the case of actions to raise costs or impede price competition. Another is related to the formation of inflation expectations. If, as we believe, inflation expectations are not entirely a simple extrapolation of past price change, but are to some extent rational or forward-looking, policymakers should be able to contribute to the information on which business and labor base their expectations.

Mr. Stockton will now discuss the outlook for inflation.

Your next chart shows the staff Greenbook projection for inflation in 1984 and a tentative first estimate for 1985. The inflation rate for the gross domestic business product price index is projected to rise from around 4-1/4 percent over the four quarters of 1983 to 5 percent in 1984 and 5-1/4 percent during 1985.

A number of factors lead us to project a small acceleration of prices in 1984, despite the fact that this second year of economic recovery still leaves considerable slack in labor markets. First, after several years of favorable food price developments, last summer's drought is expected to boost food prices next year, as current reductions in the cattle breeding stock limit meat supplies over the coming months. A second factor is the scheduled hike in social security taxes, which will raise employers' payroll costs appreciably. The projected depreciation of the dollar also will add to inflation pressures next year. Finally, the lagged effects of this year's rapid expansion of output are an additional source of price acceleration next year.

Assuming a continuation of the current recovery in real GNP into 1985 at around a 3-1/2 percent growth rate, the inflation rate would be expected to about level off. We have assumed no further shocks to food or energy prices, and no social security tax change is now planned for 1985. But the lingering influence of the dollar's depreciation in 1984, plus that of some further depreciation in 1985 would continue to exert some upward pressure on prices. This would be offset to a large extent by the projected moderate economic growth and an unemployment rate still averaging above 7-3/4 percent.

The projections for 1984 and 1985 depend on a number of factors that are subject to a great degree of uncertainty. The next table presents estimates of the inflation rate under several alternative assumptions for those factors that we consider critical to the inflation process. Foremost among these factors is the rate of economic expansion. Lines 2 and 3 illustrate the estimated effects of both stronger and weaker recoveries than currently projected by the staff. For example, the effect of a one percentage point faster growth of real output in 1984 and 1985--line 2--would be to boost projected inflation to a 5-1/4 to 5-3/4 percent pace in 1984 and a 5-3/4 to 6-1/2 percent rate during 1985; slower growth of activity would act to reduce the projected rate of inflation.

Underlying productivity trends also are important to our inflation outlook. Extracting the trend in productivity during a period of sharp cyclical swings is quite difficult; if we have been too pessimistic and the annual growth in trend productivity should prove to be closer to 2 percent, rather than 1 percent, inflation over the next two years--line 4--could be below 4 percent in 1985, other things equal.

Finally, the staff outlook is also sensitive to exchange rate developments. Line 5 presents the impact on gross domestic business product prices of assuming that the value of the dollar remains at its third-quarter 1983 level rather than falling 18 percent, as is contained in our central projection. That effect would lower projected inflation by about 1/4 of a percentage point in 1984 and by about 3/4 percentage point in 1985, relative to our baseline projection. It should be pointed out that this effect appears small because the GBP fixed-weighted price index

only measures the effects of exchange rate movements on the prices of domestically-produced goods. In contrast, the downward effect on the level of the consumer price index, which includes both domestically-produced and imported goods, would be about twice as large.

Of course, the risks we have cited are not necessarily independent. Stronger growth would not only raise the inflation path, but also increase the likelihood of unfavorable developments for food, energy, and import prices. Slower growth, in contrast, would enhance the probability of weaker food and energy prices and a stronger dollar. On balance, however, given our current projections of the underlying determinants of price inflation, the Phillips curve view of inflation used by the staff would call for a small acceleration of prices over the next 2 years.

In contrast to the staff projection, inflation forecasts using typical monetarist equations--shown on your next table--currently show a 7-1/2 to 8-3/4 percent rate of price increase over the four quarters of 1984. Assuming that the growth of M1 slows by 1/2 percentage point in 1985 from the mid-point of the 1984 range, the inflation rate projected by these equations falls in the 6-1/2 to 10 percent range in 1985. These results are quite different from the staff forecast, and in our view would only be likely to occur if real growth in 1984 and 1985 were to be substantially stronger than expected, averaging at least 7 percent per year.

The next chart shows the out-of-sample forecast performance of two versions of a monetarist equation; one assumes prices respond fully to money growth in two years, while the other uses a four-year adjustment period. For comparison, we also have included the out-of-sample forecasts of a typical

Phillips curve equation. Any exercise of this nature is always sensitive to the precise specifications used and, therefore, the results should be viewed only as broadly representative of the forecasting performance of these models. A general feature of both the monetarist equations and the Phillips curve was a tendency to under-predict inflation in 1980 and 1981. However, over the past two years the monetarist equations have over-predicted inflation by a wide margin. The Phillips curve, on the other hand, has remained closer to the actual path of inflation in 1982 and 1983.

The next table presents some information on the longer-run outlook. The staff has examined paths of real output and unemployment, using the Board's quarterly econometric model, that we feel would be capable of achieving price stability within 5 years. In this exercise, we assumed that, beginning in 1984, monetary policy is adjusted to place unemployment on a path capable of reducing inflation to near zero by 1988. Furthermore, this adjustment is assumed to be implemented quickly enough to reduce the growth of real output in 1984, as well as limit the projected decline in dollar exchange rates. Second, fiscal actions are assumed that reduce the structural deficit by \$120 billion by 1988. Third, it was assumed that the current trend productivity growth--a bit over 1 percent at an annual rate--continues over the five-year horizon. Finally, no food or energy price shocks are assumed.

The first thing to note is that, using the baseline assumptions, the Board's model indicates that reaching price stability by 1988 would require persistently low rates of economic growth over the five-year horizon. The unemployment rate--line 1--would remain near its current level, ending 1984

at 8-1/2 percent and staying in the 8-1/2 to 9 percent range through 1988. In other words, to overcome the inertia still existing in current inflation, including some reversal of the dollar's recent appreciation, the unemployment rate must remain significantly above the natural rate throughout the entire five-year period.

The baseline case is only meant to be illustrative and the specific results are dependent on the set of assumptions we have outlined above, as well as the structure the quarterly model. Changes in any of these assumption would alter the path of unemployment associated with achieving price stability. For example, should the dollar's depreciation, for exogenous reasons, be sharper than was projected in the baseline case, a higher unemployment path would be needed in order to offset the inflationary influence of the lower dollar. Likewise, any unfavorable shocks to food or energy prices during this period would also require slower growth and higher unemployment in order to limit price increases in other sectors of the economy.

On the more favorable side, an improvement in trend productivity would reduce the costs of reaching zero inflation. By lowering producers' costs for a given increase in nominal wages, higher productivity growth would allow a reduction in the rate of inflation to occur at lower unemployment rates. If the rate of trend productivity growth should be 2 percent over the period, the unemployment path necessary to achieve price stability could be about 1 percentage point less than in the baseline case. The task of achieving price stability in five years also would be made easier

if federal, state and local governments systematically removed regulations and altered policies that artificially boost costs and prices.

Finally, the results for both the near-term outlook and the longer-run horizon are based on the structural elements of the inflation process that can be quantified for forecasting purposes. Price expectations and the psychology of inflation do not fall easily into this category, but as indicated earlier, these are critical factors in wage and price determination. To the extent that credible public policies could help reduce inflation expectations, the adjustment to lower rates of inflation would be faster and achieved at a lower cost of lost output.

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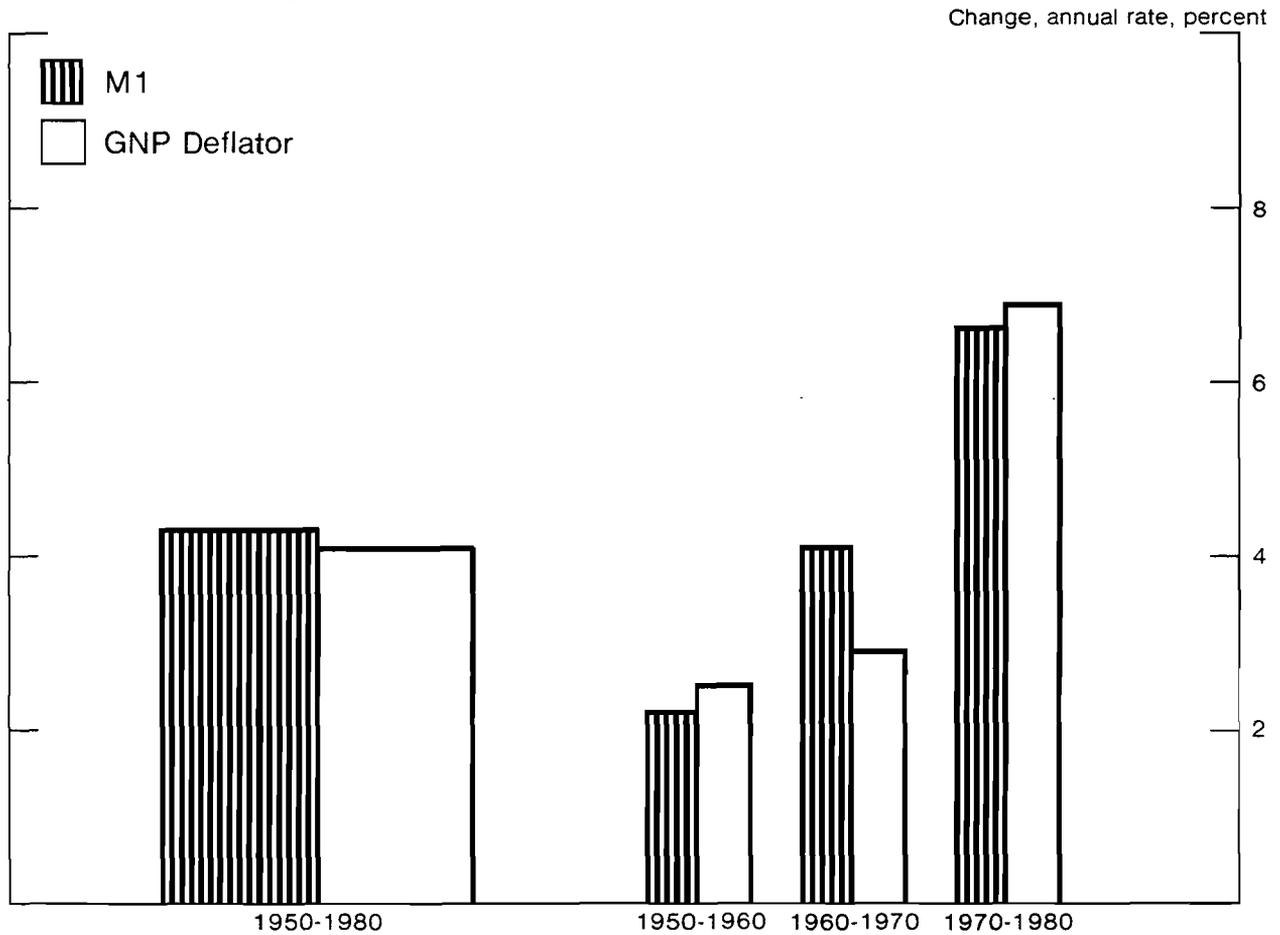
*Materials for
Staff Presentation to the
Federal Open Market Committee*

November 14, 1983

Chart 1

Money and Prices

M1 and GNP Deflator



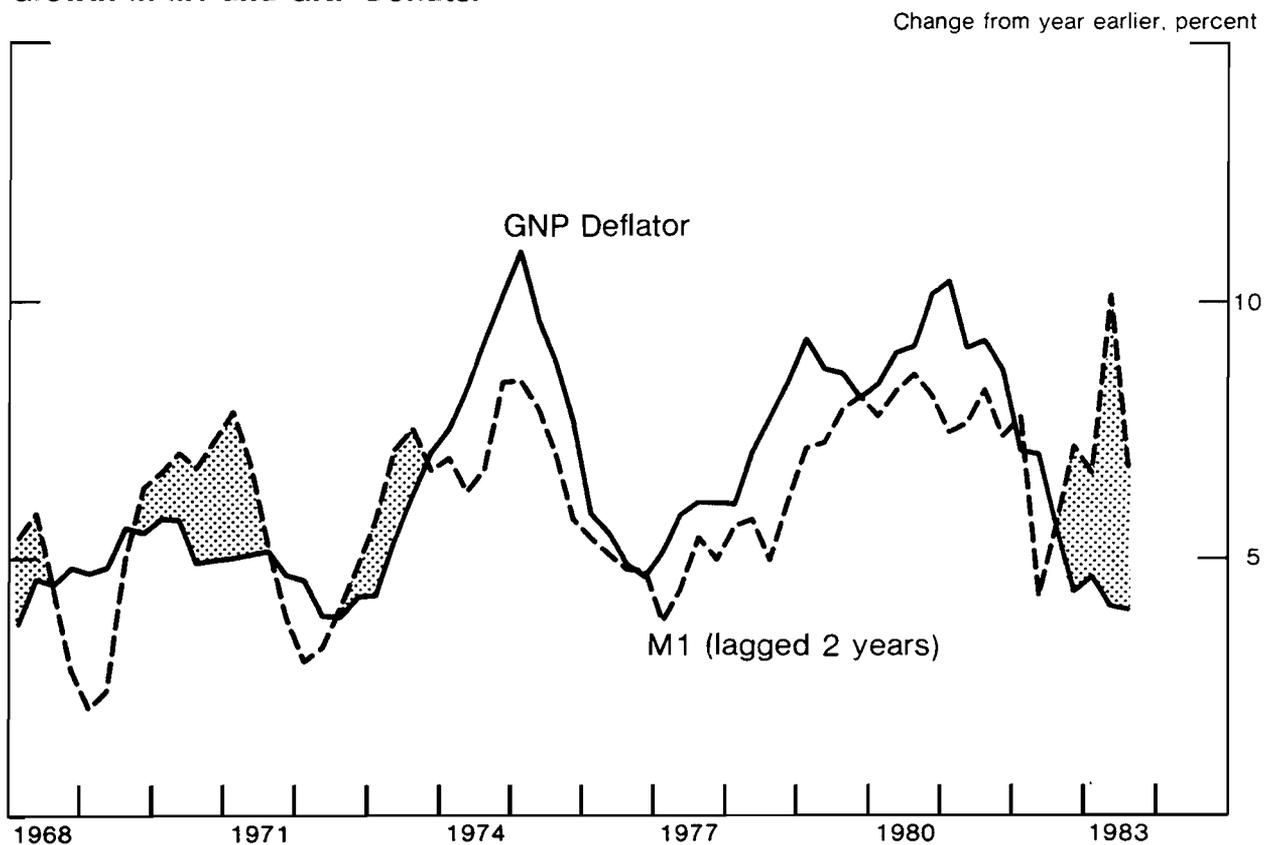
- Over the long run, money and prices tend to move together.
- Long-run neutrality of money: over long periods, changes in money only influence the price level and do not permanently affect real variables in the economy.
- The question is: how long does it take for the effects of a change in money to be entirely reflected in prices? The answer is a key feature differentiating various theories of inflation.

Monetarist Theory of Inflation

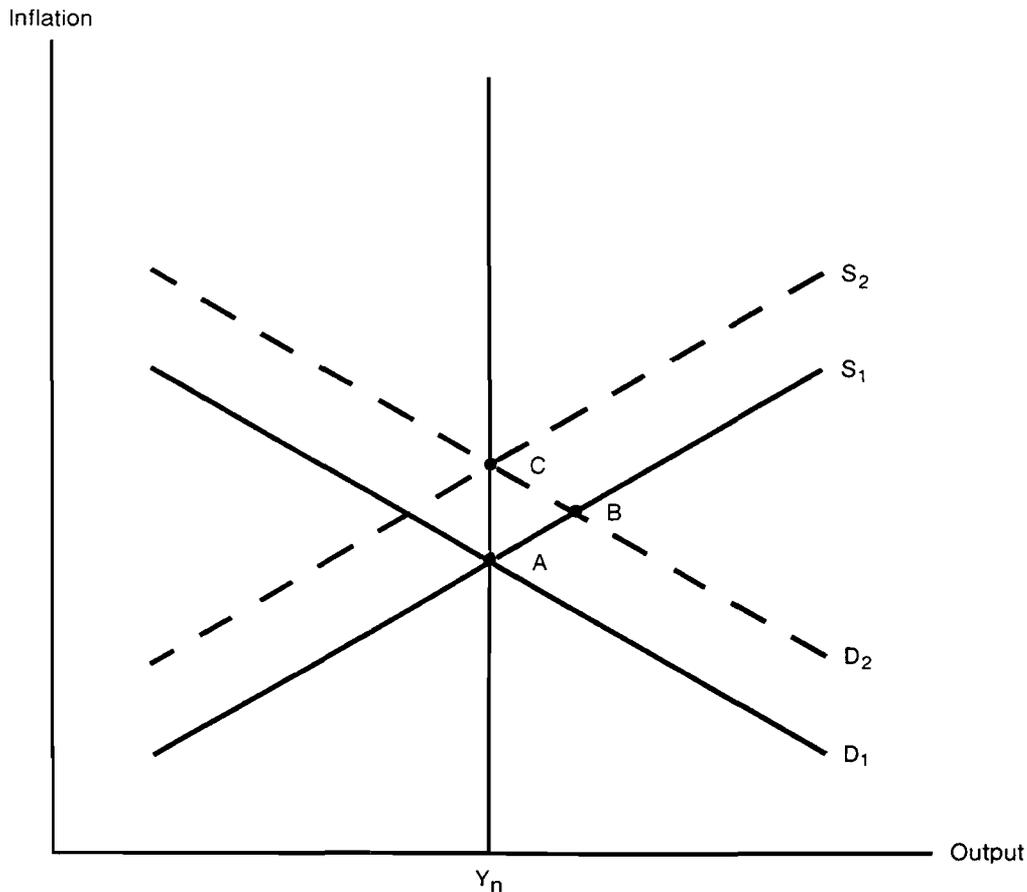
Key Features

- Places primary emphasis on the response of inflation to the growth of the money supply.
- Changes in the money stock lead to *stable* and *predictable* short-run movements in nominal spending.
- Increases in the money stock boost nominal spending; the increased demand pressures lead to a bidding up of prices.
- The state of the business cycle plays little if any role in price determination.

Growth in M1 and GNP Deflator

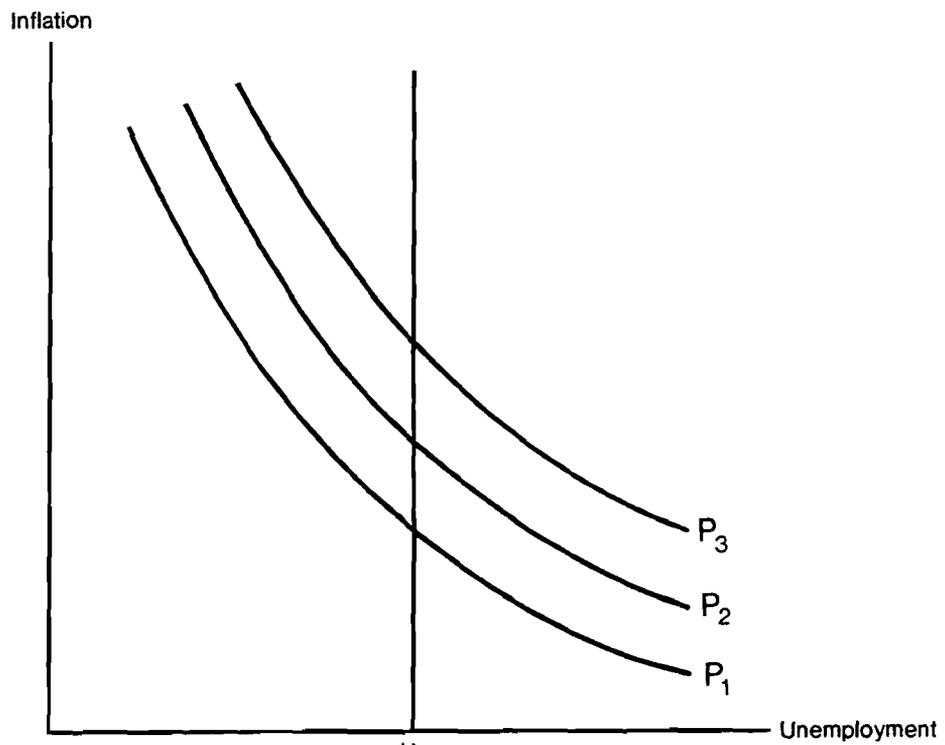
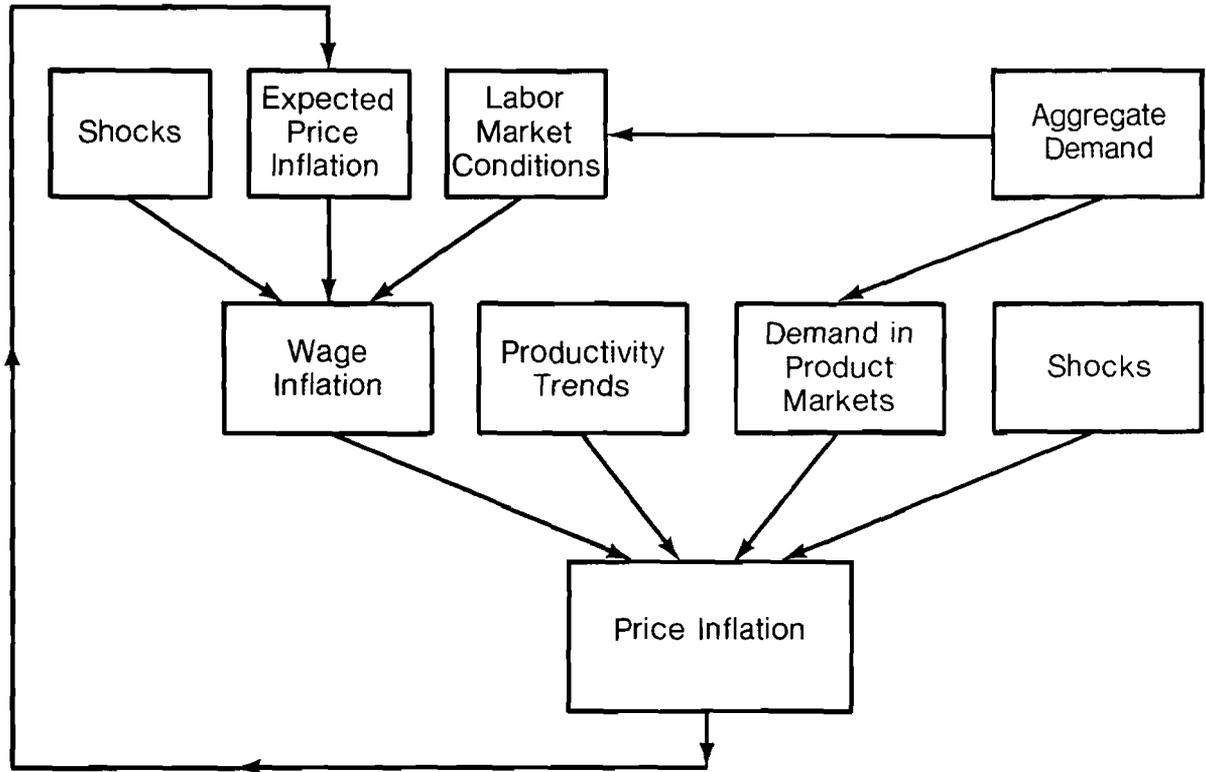


The Natural Rate Hypothesis



- An increase in aggregate demand from D_1 to D_2 raises inflation and output from point A to point B.
- But as workers' price expectations adjust to the higher inflation rate, the aggregate supply curve will tend to shift up from S_1 to S_2 , ultimately moving the economy back to the natural level of output at a higher rate of inflation—point C.
- The rate of inflation where this process ultimately settles will be determined by the factors influencing the position of the aggregate supply and demand schedules, with one of the most important factors being the rate of growth of money.

Phillips Curve View of Inflation



The Role of Inflation Expectations

- **Phillips curve view.** Most empirical Phillips curves assume that inflation expectations are formed by looking at past price performance.
- **Rational expectations.** Individuals form forward-looking expectations using all available information.
- Individuals, in fact, probably do more than mechanically extrapolate past trends; but they probably are not as sophisticated as rational expectations theory assumes.
- Because expectations cannot be observed directly, it is important to be aware of the sensitivity of inflation forecasts to the factors affecting expectations.

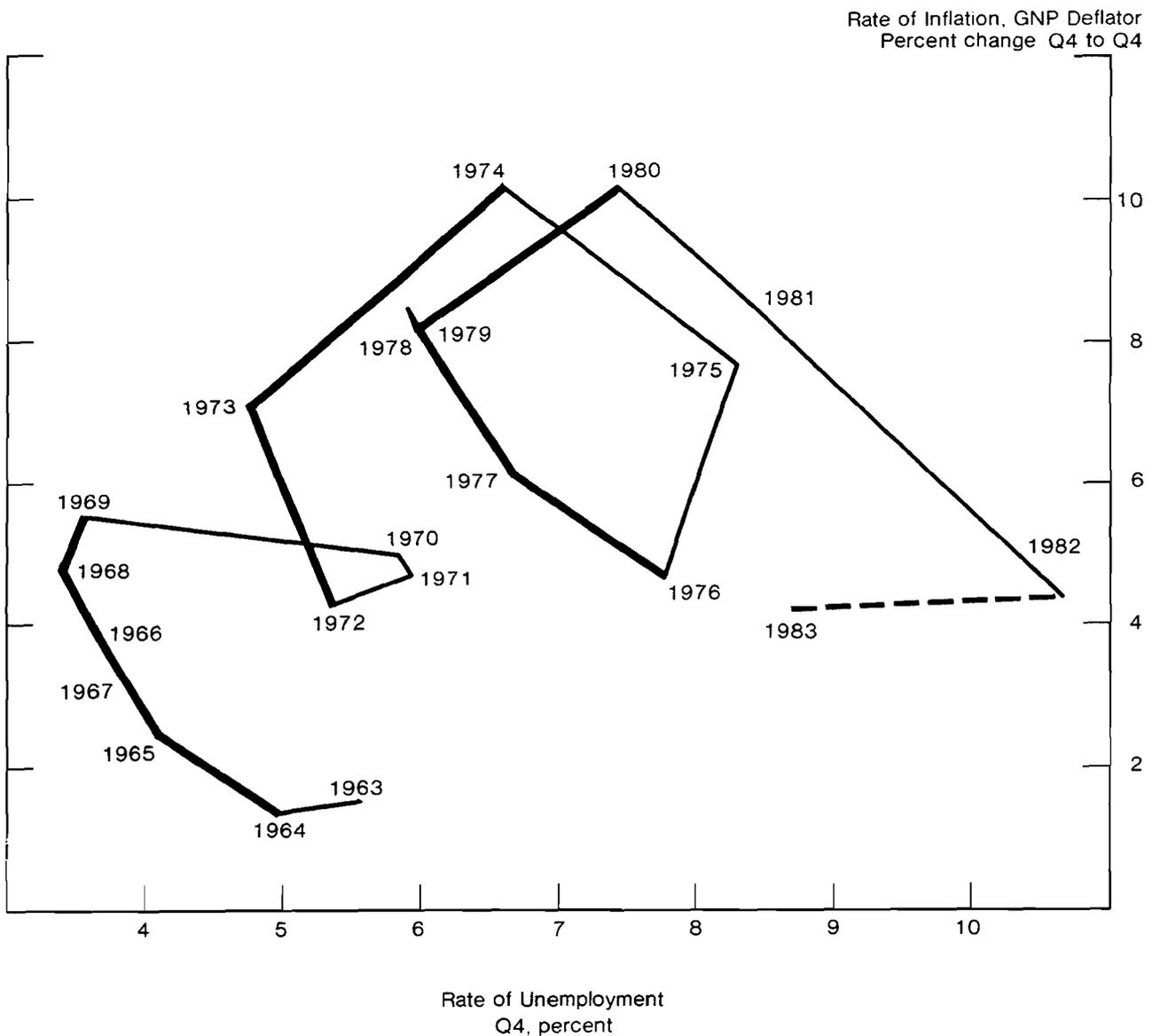
Phillips Curve View

- Provides a detailed description of the structure and dynamics of the inflation process.
- Traces the channels of policy influences on inflation, identifying factors that may mitigate or amplify the inflationary effects of policy actions.
- Has a role for short-run effects of money on prices; the transmission mechanism involves intermediate channels operating through interest rate effects on real activity.
- Takes into consideration the existence of contracts and institutional rigidities—including government actions—that can make wages and prices less than fully flexible.

Chart 7

Unemployment and Inflation

	Natural Rate of Unemployment Percent	Actual Unemployment Rate Percent
1950-1959	4 to 5	4-½
1960-1972	4-½ to 5-½	4-¾
1973-1979	6-½ to 7-½	6-½
1980-1983	6 to 7	8-½

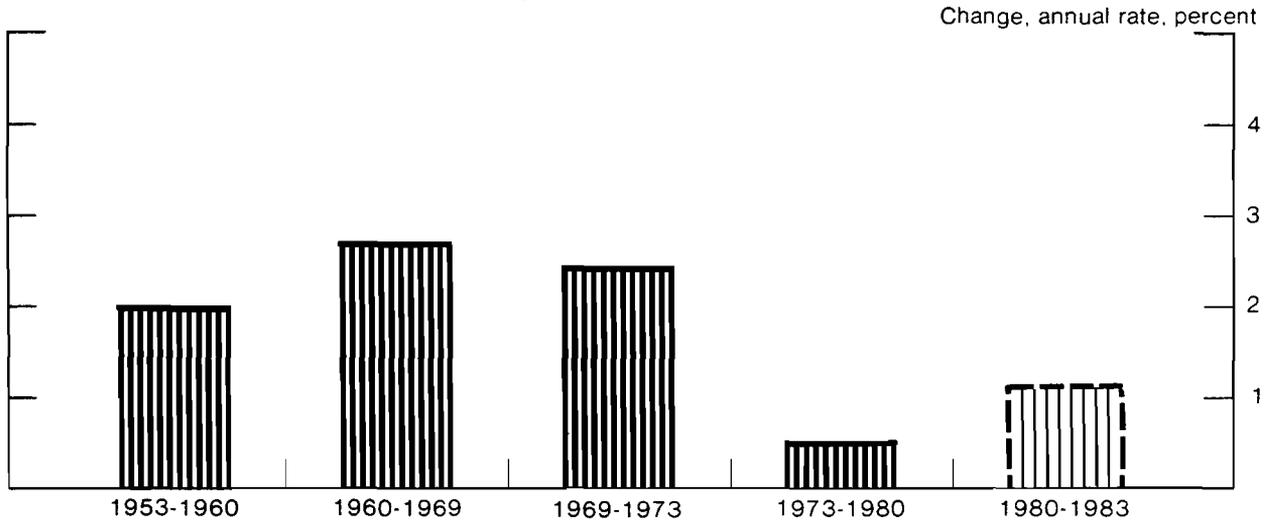


Major Factors Influencing the Natural Rate of Unemployment

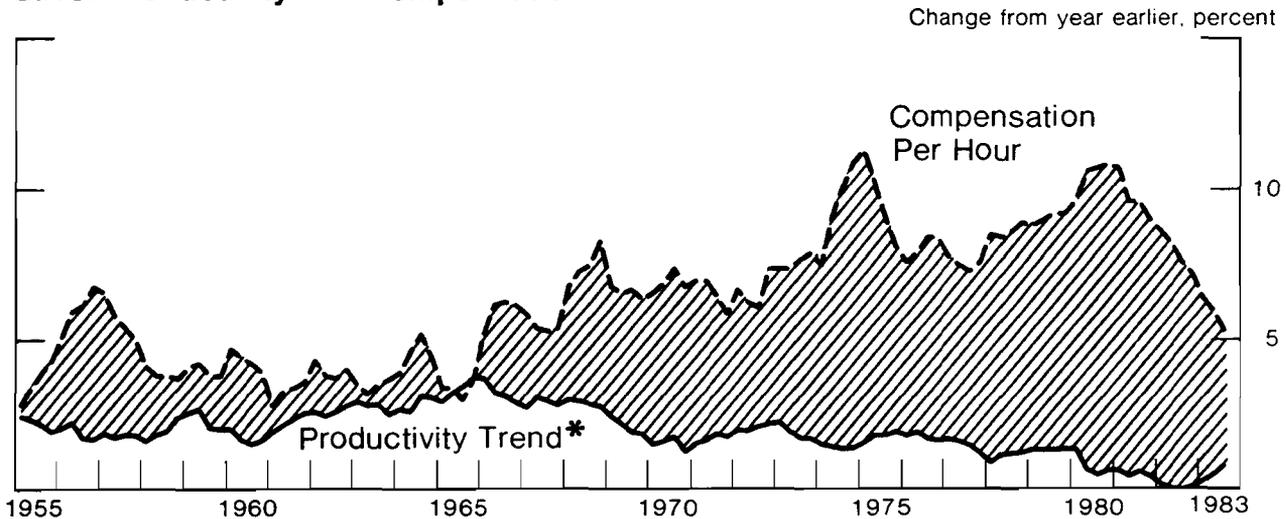
- **Trend Rate of Growth of Labor Productivity**
- **Demographic Mix of the Labor Force**
- **Structure of Labor and Product Markets**
 - Introduction of inflexible work rules
 - Increased mismatches of workers' skills and job requirements
 - Government actions, such as wage floors, protectionist trade policies, and price supports
- **Income Support Programs**
 - These programs induce longer spells of unemployment by reducing the incentive to search for work and by raising the wage that jobless workers are willing to accept.

Chart 9

Trend Growth of Labor Productivity



Labor Productivity and Compensation



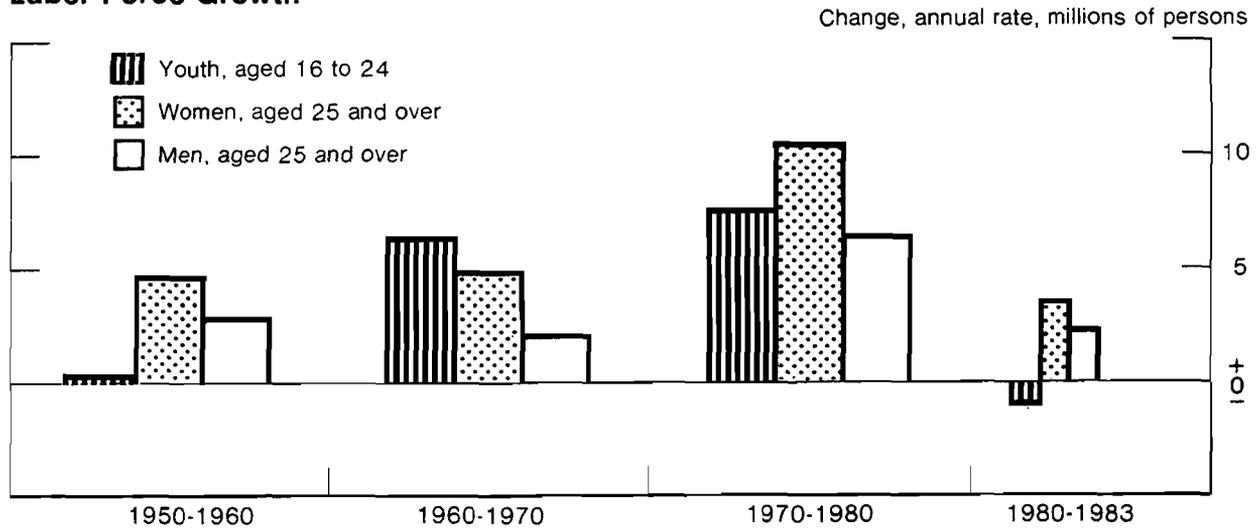
* Five-year percent change at an annual rate.

• Labor Productivity and the Natural Rate of Unemployment

- Attempts by workers to obtain real wage increases in excess of the trend in productivity growth will cause an acceleration in labor costs.
- As prices are marked up over these costs, the unemployment rate required to generate enough downward pressure on wages to stabilize inflation will rise.

Chart 10

Labor Force Growth



- **Demographic Mix of the Labor Force and the Natural Rate of Unemployment**

- Less experienced workers generally have weaker attachments to jobs and more frequent spells of unemployment; thereby increasing frictional unemployment.
- This boosts, on balance, the measured unemployment rate associated with any given level of labor market tightness.

Aggregate Demand and Inflation

Channels from Aggregate Demand to Inflation

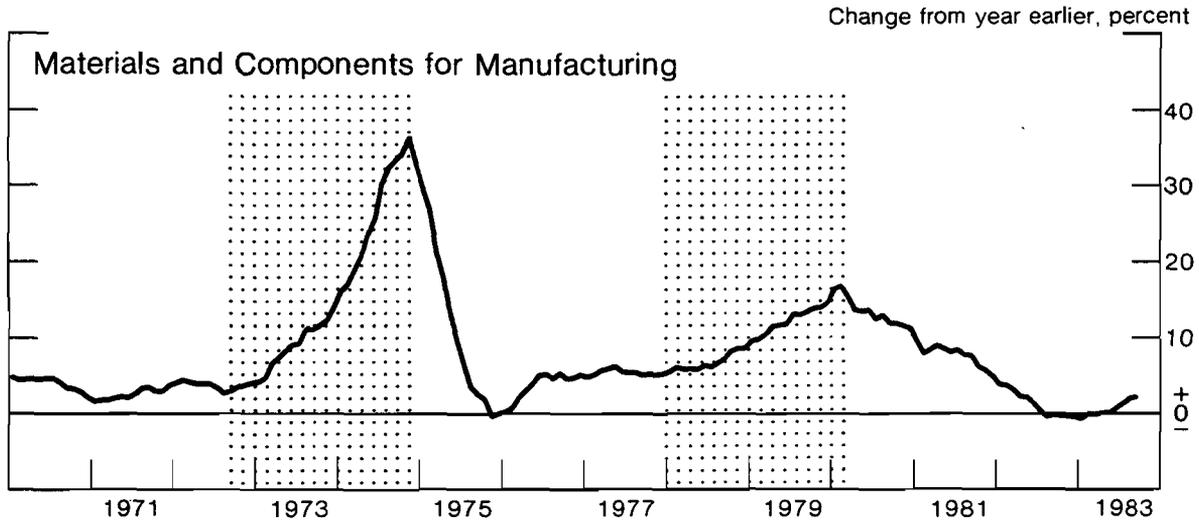
- Labor and product market conditions have a contemporaneous effect on the size of wage settlements and the markup of prices over costs.
- The full effect depends on:
 - lags in the adjustment of inflation expectations, and
 - inertia in wage and price-setting introduced by contracts or other institutional arrangements.

Staff Estimates

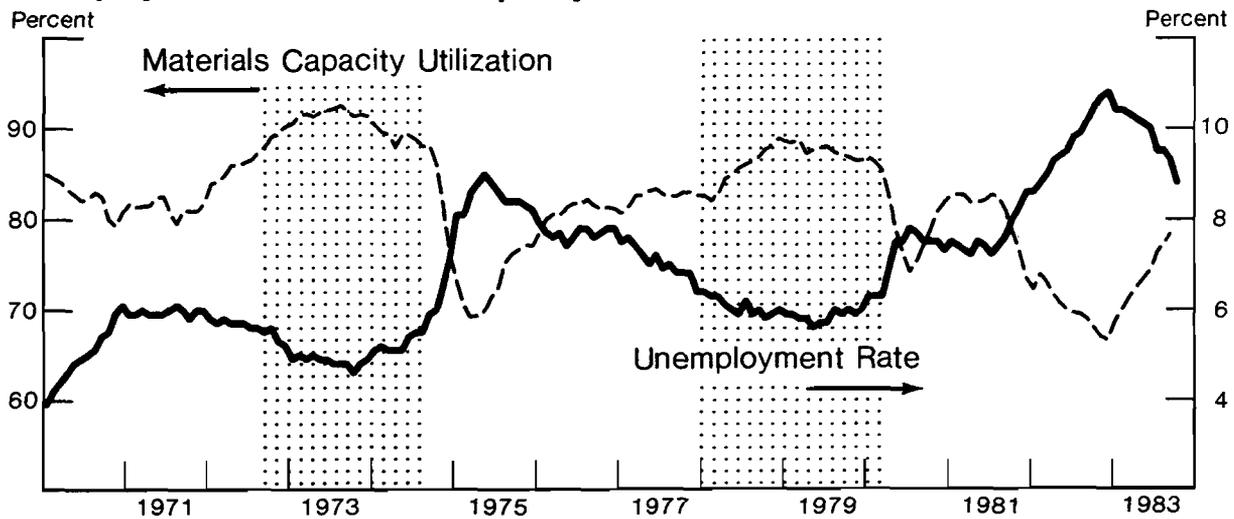
- Each additional percentage point on the **level** of joblessness, maintained over one year, would reduce inflation by $\frac{1}{2}$ to 1 percentage point.
- Each 1 percentage point **change** in the unemployment rate over a year changes inflation by a little more than $\frac{1}{4}$ percentage point.

Materials Prices and Capacity

Producers' Prices



Unemployment and Materials Capacity Utilization



Capacity Growth

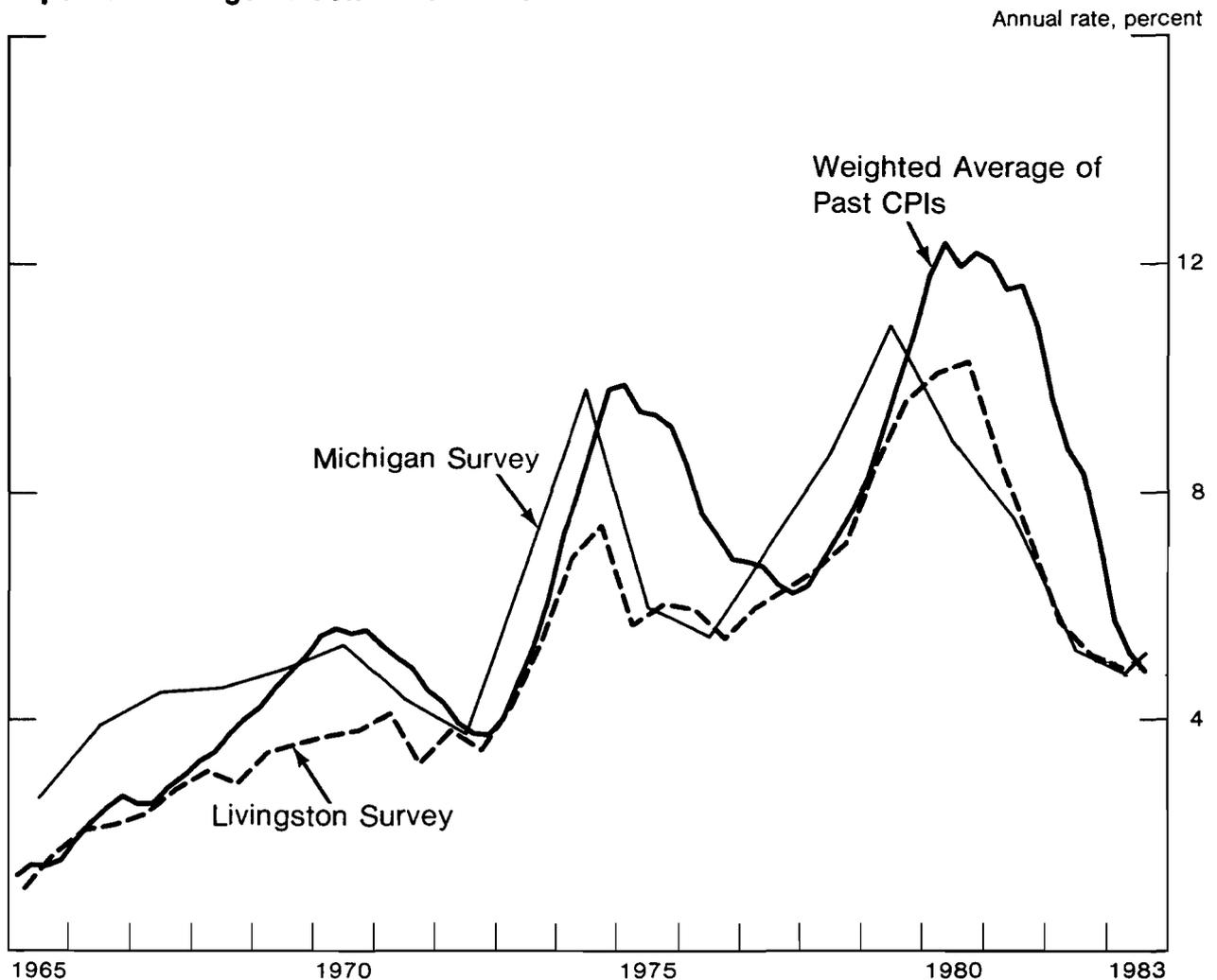
Percent change, annual rate

	1967-1973	1973-1979	1979-1982
Total Manufacturing	4.1	3.1	2.4
Iron and Steel	.7	.3	-1.7
Petroleum Refining	4.0	3.7	-.7
Textiles	5.4	.8	.1
Total Materials	3.8	3.3	2.0

How Can Inflation Accelerate at High Rates of Unemployment?

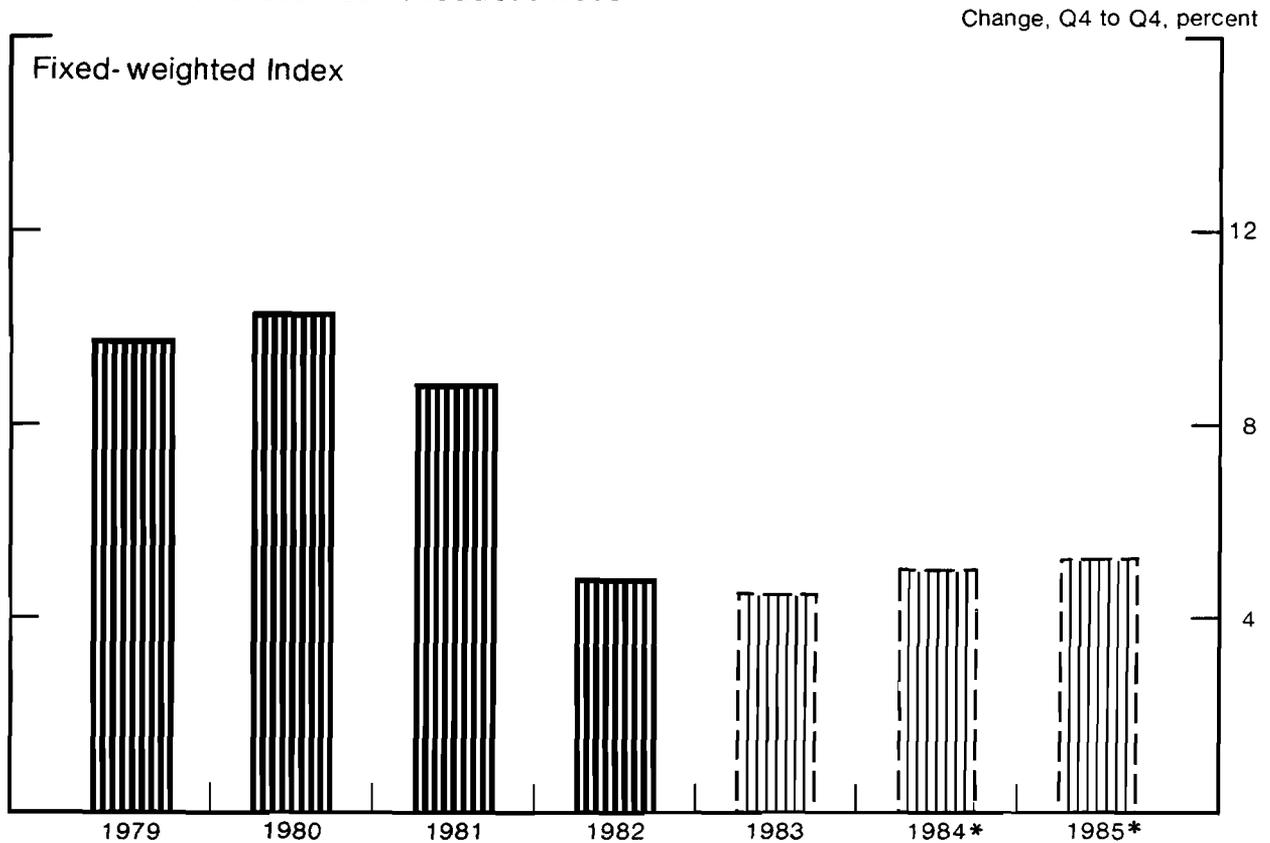
- Government-mandated cost increases can contribute to higher prices.
- Large supply disturbances might raise the relative price of an important commodity.
- A decline in the foreign exchange value of the dollar can raise the prices of imports and of domestic goods that compete with imports.
- Rising inflation expectations could generate pressures for higher wage settlements and larger price increases.

Expected Change in Consumer Prices



Staff Inflation Projection

Gross Domestic Business Product Prices



* Assumes 4¼ percent real growth in 1984 and 3½ percent real growth in 1985.

Key Factors Affecting Near-term Inflation Outlook

- Considerable slack, particularly in labor markets
- Drought-induced increases in food prices in 1984
- Scheduled social security tax hike in 1984
- Projected depreciation of the dollar in 1984 and 1985
- Speed of the present recovery

Staff Inflation Projection and Alternatives
Gross Domestic Business Product Prices; Percent Change

	1982-Q4 to 1983-Q4	1983-Q4 to 1984-Q4	1984-Q4 to 1985-Q4
1. Staff projection ¹	4- ¹ / ₄	5	5- ¹ / ₄
2. One percent faster growth of real GNP in 1984 and 1985	4- ¹ / ₄	5- ¹ / ₄ to 5- ³ / ₄	5- ³ / ₄ to 6- ¹ / ₂
3. One percent slower growth of real GNP in 1984 and 1985	4- ¹ / ₄	4- ¹ / ₄ to 4- ³ / ₄	3- ³ / ₄ to 4- ¹ / ₂
4. Two percent trend growth of productivity	4- ¹ / ₄	4 to 4- ¹ / ₂	3- ¹ / ₂ to 4
5. Stronger exchange rate ²	4- ¹ / ₄	4- ¹ / ₂ to 4- ³ / ₄	4- ¹ / ₄ to 4- ³ / ₄

1. Assumes 4-¹/₄ percent real growth in 1984 and 3-¹/₂ percent real growth in 1985.

2. Assumes dollar maintains 1983-Q3 level.

Monetarist Projections of Inflation
Gross Domestic Business Product Price Index; Percent Change

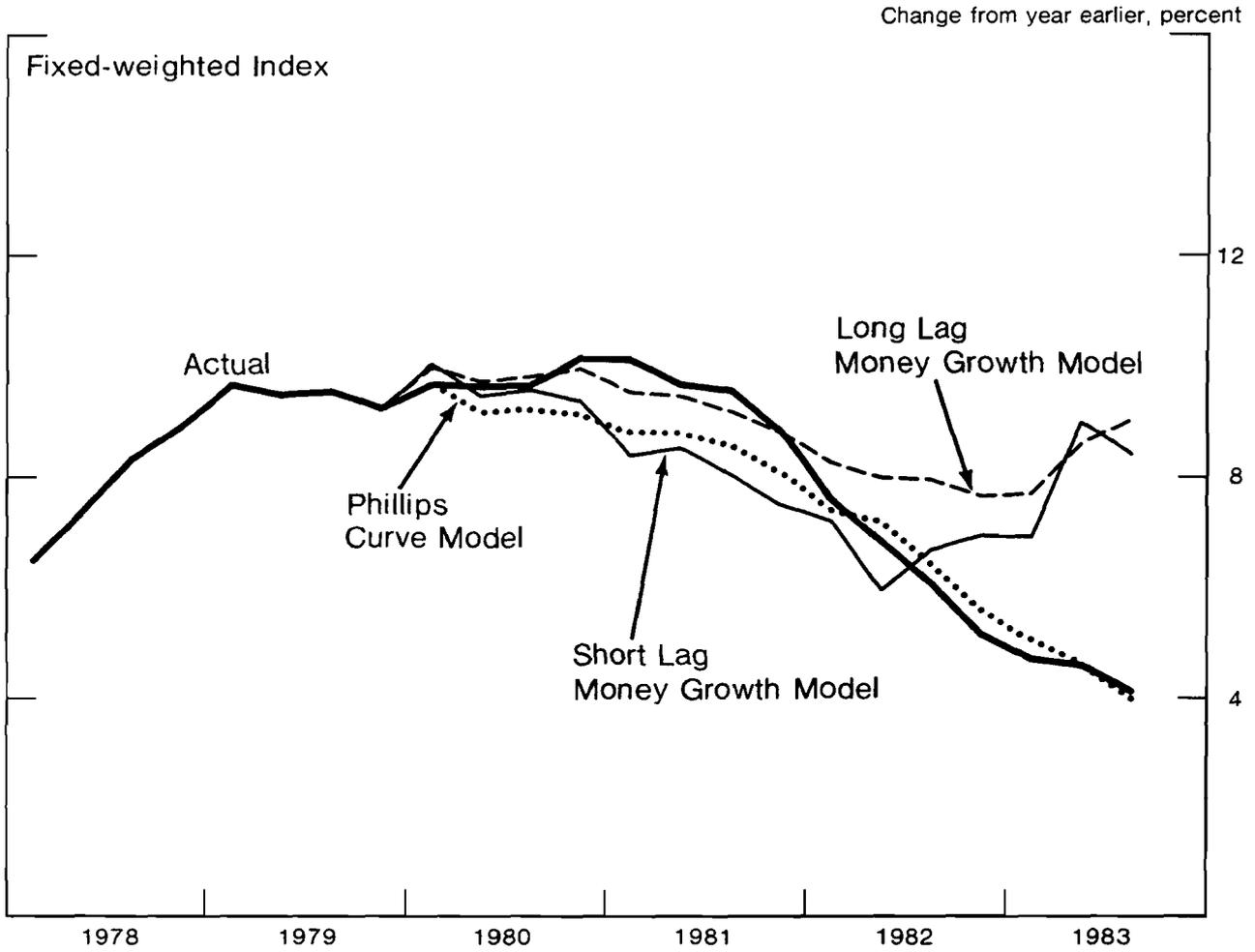
	1982-Q4 to 1983-Q4	1983-Q4 to 1984-Q4	1984-Q4 to 1985-Q4
1. Eight quarter adjustment of prices to money growth ¹	4- ¹ / ₄	7- ¹ / ₂ to 8- ¹ / ₄	6- ¹ / ₂ to 7
2. Sixteen quarter adjustment of prices to money growth ¹	4- ¹ / ₂	8- ¹ / ₂ to 8- ³ / ₄	9- ¹ / ₂ to 10
3. Staff projection ²	4- ¹ / ₄	5	5- ¹ / ₄

1. Range of estimates includes models with and without the relative price of energy.

2. Assumes 4-¹/₄ percent real growth in 1984 and 3-¹/₂ percent real growth in 1985.

Recent Forecast Performance

Gross National Product Prices



	1980-Q1 to 1983-Q3	
	Mean Error	Mean Absolute Error
1. 8 quarter adjustment of prices to money growth ¹	-.83	2.30
2. 16 quarter adjustment of prices to money growth ¹	-1.64	2.01
3. Phillips Curve Model	.30	.90

1. Model includes the change in the relative price of energy.

Price Stability by 1988

	1984	1985	1986	1987	1988
The baseline case					
1. Unemployment Rate (Q4)	8.5	8.6	8.9	9.0	8.7
2. Real GNP (Q4/Q4)	3.3	1.5	1.2	2.6	3.5
3. Nominal GNP (Q4/Q4)	7.5	5.9	4.2	4.3	4.2
4. M2	6.0	5.5	4.7	4.4	4.5
5. GNP Deflator (Q4/Q4)	4.2	4.4	3.0	1.7	.7

Key baseline assumptions

- monetary policy change implemented quickly enough to lower growth in 1984 from current projection
- fiscal actions to reduce the deficit beginning in 1985
- growth of trend productivity of 1.1 percent annually
- no food or energy price shocks

Alternative Assumptions

- Sharper drop in the exchange rate resulting from exogenous factors.
Result: raises required unemployment path
- Higher trend productivity.
Result: lowers required unemployment. If trend productivity growth is 2 percent, the average unemployment rate required for price stability would be one percentage point lower.
- Government action to reduce regulations boosting costs and prices.
Result: lowers required unemployment path
- "Credible" disinflation policy and lower inflation expectations.
Result: lowers required unemployment path

PETER D. STERNLIGHT
NOTES FOR FOMC MEETING
NOVEMBER 14-15, 1983

Desk operations since the October meeting sought to achieve the slightly lesser degree of reserve restraint desired by the Committee since mid-September. Monetary aggregates continued to be remarkably well behaved, running just about as desired for M-2 and M-3 and weaker than expected for M-1. Meantime, the economy continued to show strength while inflation remained subdued. What might have been an unusually tranquil period for domestic financial markets was disturbed, however, by failure of the Congress to act on a debt limit increase, causing the Treasury to delay and reshape its financing operations, and probably contributing a bit to a moderate rise in most intermediate and longer term interest rates over the interval.

Weekly nonborrowed reserve objectives aimed consistently for \$650 million of adjustment and seasonal borrowing, a measure of restraint that was expected to be associated with Federal funds trading in a 9 1/4-9 1/2 percent range. Actual borrowing levels varied from the objective, running somewhat to the low side through most of the period, but then climbing to a weekly average a little over \$1 billion in the latest week, and remaining in that area so far this week. An average for the period would be quite close to the desired \$650 million. For the most part, weekly deviations resulted from end-of-week misses in reserve projections. Meantime, weekly average Federal funds rates were exceptionally steady varying by only a few basis points from 9 3/8 percent--a shade below the 9 1/2 percent central tendency through most of September.

The System's portfolio showed little net change in outright holdings for the full period. The Desk purchased about \$1 billion of Treasury bills from foreign accounts, but also permitted \$700 million of bills to mature without replacement when it appeared for a time that a reserve absorption was in order. That particular bill run-off coincided, fortuitously, with the Treasury's need to cut back on a particular bill auction because of debt ceiling constraints. Soon after we committed for the run-off it was learned that other factors would be draining reserves unexpectedly, so we began rebuilding outright holdings again. Most days in the period saw the Desk either passing through customer repurchase agreements to the market or arranging the System's own agreements. On one day, following an unexpectedly large provision of reserves because of a Reserve Bank operational problem we arranged a large volume of matched sale-purchase transactions in the market.

Interest rates see-sawed under diverse influences during the intermeeting period, mainly ending up with slight to moderate increases. While average Federal funds rates edged off slightly and then held steady, this in itself was a disappointment to some in the market who harbored expectations that funds would drift down toward 9 percent. Disappointment was accentuated when publication of the August policy record failed to disclose reference to a post-meeting decision to seek slightly easier conditions, which some observers assumed had occurred. Adding to market caution, were the reports of stronger than expected business expansion, while later in the period the reshuffling of

the Treasury's coupon auction caused concern about the need to compress still-large needs into a shorter period of time. Interspersed with these concerns, though, the continued moderation of the aggregates provided some encouragement, and in the final days of the period, when the Treasury's rescheduled auctions had finally been completed, a more confident feeling emerged in the market. A Desk order to buy nearly \$1 billion of coupon issues for a foreign central bank also helped the atmosphere.

On balance, Treasury coupon issues maturing in about two years were scarcely changed in yield for the period, while longer issues rose about 10 to 25 basis points. Dealers have taken on sizable inventories of the just-auctioned November refunding issues but in the better atmosphere of the last couple of days they seem fairly content with them.

In the shorter term sector, Treasury bill rates have changed little on balance since early October. There was a dip in late October when the Treasury slashed its weekly bill offering sharply because of debt limit constraints, but rates soon rebounded as more normal issuance resumed. Three and six-month auction rates today averaged an estimated 8.77 and 8.91 percent, compared with 8.72 and 8.92 percent on October 3. Rates on CDs and commercial paper also changed little over the interval, inching up about 5-15 basis points. There is a barely perceptible widening in the spread of CDs over Treasury bills, but one needs a microscope to see it, and it may have more to do with scarcities of bills than with a shunning of bank obligations. On the other hand, I have heard the comment more than once that if banks were

having to place any appreciable reliance on the CD market as a source of funds, we would probably be seeing a considerable widening of spreads reflecting concern about the international loan picture.

As to the market's near-term rate outlook, the bulk of opinion centers on no significant change. A dwindling few are still looking for rate declines in view of the good performance of the aggregates and of inflation, and a feeling that technical factors have recently held rates higher than they ought to be. Another minority group looks for some increase, perhaps by year-end, as credit demands from a strengthening economy come into greater conflict with still excessive Treasury requirements. But most are in the middle, seeing a rough balance of plus and minus factors.

Action on the Treasury's debt limit is expected any day now, but its precise timing is uncertain and without it the Treasury's position remains vulnerable. Unlike other recent debt limit crises, when the immediate reversion to a low permanent ceiling precluded even the possibility of refunding maturing issues, the present situation is one of bumping against the \$1,389 billion ceiling enacted in permanent form last spring. Thus rather than facing a clear D-date that would be like a steep precipice, the present situation is more comparable to being mired in a swamp, and hopping from rock to rock for an uncertain while. Tomorrow is a critical date because the Treasury is both up against the debt ceiling and nearly out of cash. On the latest estimates they can just about make it through tomorrow, which

should be the cash low point until the opening days of December when a fresh round of outpayments (mostly social security) will exhaust their cash again. Precisely how long they can last into December would depend in part on which special measures, or gimmicks, the Treasury might be able and willing to employ.

Mr. Chairman, present projections of reserve needs for the upcoming intermeeting period indicate that the need for reserve additions might well exhaust the standard \$4 billion intermeeting leeway in the Committee's authorization to the Desk. I recommend that the leeway for change in outright holdings between meetings be raised temporarily to \$5 billion.

Notes for FOMC Meeting
November 15, 1983

Sam Y. Cross

1. Given the widespread expectations of further declines in the dollar at the time of your last meeting, the dollar has demonstrated surprising strength in the last several weeks. After declining in the first week of October, the dollar reversed course. International disturbances in a number of locations around the world helped to support this strengthening tendency of the dollar for most of the remainder of the period. Since your last meeting, the dollar rose on balance by about 2 percent against the mark and most other continental currencies, and by a little less than 1 percent against the yen.

2. Renewed evidence of a vigorous recovery in the United States led exchange market participants to doubt there was room for further declines in interest rates. In fact, short-term U.S. interest rates did stop declining and long-term rates rose moderately. At the same time, the eruption of political and military conflicts, in the Persian Gulf, in Lebanon and in the Caribbean raised market expectations of "safe-haven" flows into the dollar.

3. These circumstances prompted market professionals to buy dollars to cover their short-dollar positions established earlier on the anticipation of continued dollar declines. This adjustment of positions may have been sufficient to move the dollar up; thus far we have little concrete evidence that large-scale capital flows actually materialized.

4. In Germany, the Bundesbank apparently accepted the implications of the dollar's move on the German mark in view of the improvement in the German inflation picture relative to the late summer. The growth of the German money stock, while still somewhat above target, has slowed down in the last two months. However, the authorities were concerned about repercussions emanating from the problems of Schroeder, Meunchmeyer, Hengst & Company and intervened on several days, to calm the markets.

4. In Japan a package of measures was announced by the government in the latter half of October, aimed at stimulating the economy. The program included a 1/2 percentage point cut in the discount rate, accompanied by strong statements by the Bank of Japan that the yen would be defended. Subsequently, as the dollar firmed across the board, the Japanese were concerned that their currency was particularly vulnerable, in view of the

recent discount rate cut, and accordingly, intervened to support the yen. The Japanese authorities asked that the U.S. join them in coordinated intervention, and, in response to this request the Desk also intervened on two trading days to purchase \$29.6 million equivalent of yen, split evenly between the U.S. Treasury and the Federal Reserve.

E.M. Truman
Nov. 15, 1983

Briefing on the International Debt Situation

Mr. Chairman, the situation of the major international borrowers today is not easy to characterize. As in the case of the famous viewer of the glass of water, one can justify both pessimism and optimism. From the perspective of the half empty glass, eight of the ten largest borrowers among the OPEC and non-OPEC developing countries and the East European countries face serious external financing problems -- South Korea and Indonesia are the current exceptions. Four important borrowers -- Argentina, Brazil, Peru, and the Philippines are in the process of reconstructing their IMF-approved economic stabilization programs. In at least five countries -- Argentina, Brazil, Nigeria, the Philippines and Venezuela -- the process of establishing or reestablishing such programs coincides with a period of political transition. All of the borrowing countries are desperate for some real economic growth, but I would single out Chile, Mexico, and Venezuela in this regard.

From the perspective of the half full glass, a major international financial disaster has yet to occur. Several countries have made important progress in their stabilization programs during the past year; Chile, Mexico and Yugoslavia are three. I also think it is fair to say that, to date, each borrowing country is cooperating in its own way with the international banking community and with the international financial institutions.

Brazil remains at the top of everyone's worry list. However, after considerable delay, the Brazilian economic stabilization program appears to be about back on track. After the earlier defeat of a decree law on wage indexation, a modified law was approved last week by the Brazilian Congress. Because this new law offers less promise of wage restraint than the original law and because the rate of inflation in Brazil appears to be even higher than had been earlier projected -- advancing at an annual rate of about 225 percent over the first ten months of 1983 -- the Fund has asked for further modifications in the basic program; that is to say in monetary and fiscal policy. Agreement has apparently been reached on those modifications.

The banks are well on their way to obtaining a "critical mass" of commitments to provide the \$6.5 billion in new money that is needed for the balance of 1983 and 1984, though there are many reluctant participants among the banks in this country and abroad. The governments appear to be proceeding a bit more slowly in reaching agreement on \$2.5 billion in extraordinary export credits and guarantees to support the Brazilian program, but such an agreement will be reached. There will also be a Paris Club rescheduling of official debt, which may involve as much as \$3 billion. The new Brazilian program is expected to go to the IMF Executive Board for approval before Thanksgiving, with a resumption of the IMF disbursements -- largely to pay off the BIS -- at the end of the month. The banks are expected to make \$4.9 billion in gross disbursements before the end of the year, which

will largely be used to clear up arrears and pay back bridge loans extended at the end of 1982.

Argentina is going through a bit of hiatus following its elections on October 30. After delaying the completion of their negotiations for much of the first eight months of the year, the banks were considerably more active in the months leading up to the elections, completing several pieces of the financial package. On the external side, Argentina has made some progress over the past year, reducing its arrears, reducing its current account deficit, and regularizing its external debt situation. However, inflation is running at more than 350 percent on a year-over-year basis, and the country is de facto out of compliance with its IMF-approved adjustment program. Despite the rather encouraging outcome to the recent elections in Argentina, it could well be many months before an acceptable economic program is established by the new government. Nevertheless, one has the sense that the situation in Argentina is generally understood and manageable.

In contrast, the seriousness of the economic and financial situation in the Philippines is, I believe, much less fully appreciated. The country is essentially out of reserves -- down to its last Agreement has not yet been reached on what steps are necessary to restore the operation of an IMF-approved economic stabilization program, though agreement may be reached with the IMF management this week. After agreement is reached with the IMF, the other external financing has to be worked out; the latest estimates of the gap to be filled are on

the order of \$2-1/2 to \$3 billion. I would note that U.S. banks have a larger share of bank claims on the Philippines -- more than 45 percent -- than on any of the other major troubled borrowers with one exception; the share of claims on Chile is more than 50 percent.

I do not intend to bore you with an endless stream of cases, but I do want to say a few words about Mexico. Especially in light of the pessimism of a year ago, it is important to note the progress that Mexico has made in its economic stabilization program. Mexico has met, so far, all of the targets agreed with the IMF; we now expect a current account surplus of at least \$2.5 billion this year -- in contrast with a \$14 billion deficit two years ago -- and the inflation rate has declined to an annual rate of about 50 percent over the three months ending in October, in contrast with a rate of 175 percent early in the year. However, the rate should be somewhat higher in the last two months of the year. Mexico is working with the IMF on its program for 1984; it is expected to involve \$3-1/2 to \$4 billion in new money from the international commercial banks [at a lower spread than last year]; the Government of Mexico hopes that the program will also support a resumption of moderate growth and be consistent with a further reduction in inflation.

JLKichline
11/15/83

FOMC Briefing

The economic expansion continues to move along at a strong clip. The staff once again has raised its near-term projection of activity, expecting real growth in the current quarter to be around 6-1/2 percent annual rate, 1-1/2 percentage points higher than anticipated at the last meeting of the Committee. For the full year the economy seems likely to show real GNP growth of around 6-1/2 percent as well, typical performance for the first year of recovery. Although there has been some slowing in the pace of expansion since spring, it is much less than thought earlier and the levels of resource utilization are appreciably higher than had been projected.

The strong start on this quarter was indicated by the labor market report for October which showed an increase of 320,000 in payroll employment, the same monthly gain that has prevailed on average for the past half year. The unemployment rate fell 1/2 percentage point to 8.8 percent, in association with continued reduction of workers on layoff as well as a sharply reduced inflow to the labor force. Past experience with sizable drops in the unemployment rate and the labor force suggests we could find little further change in the unemployment rate over the next month or two, but this quarter and throughout 1984 the projected unemployment rate averages 0.4 percentage point lower than in the previous forecast.

Industrial output continues to rise strongly although at a somewhat reduced rate from the very large increases during the spring and summer months. This morning the industrial production index for October was released and it shows a gain of 0.8 percent--1/2 percent less than in the preceding month. Output increases were widespread and particularly notable for strength of business equipment sectors, while growth in output of construction supplies slackened and auto assemblies declined slightly--largely because of limited parts shortages.

The strength of production overall is being fueled by growth of orders to meet both rising current sales and anticipated sales. Inventory accumulation this quarter appears likely to be contributing considerably to growth of activity, and we expect it will be a major force next quarter as well. The forecast has inventories rising in line with sales after the first quarter, and if the pattern of accumulation projected does materialize it would be fairly typical of recovery periods, that is the contribution to activity peaks 4 or 5 quarters after the trough.

On the sales side, total retail sales rose about 1 percent in October, a few tenths less than the downward revised September figures. Auto sales picked up in October, especially for imported models, and other consumer goods registered solid gains. Consumer incomes have been increasing considerably, given the growth of employment, and retailers generally seem to expect good sales over the holiday period.

In the business fixed investment area, shipments and orders on average have been on the upswing. Outlays for equipment have been quite strong and there seems to be some revival of nonresidential construction, particularly commercial building. For the full year of 1983, business investment spending will likely show a rise of over 8 percent in real terms and we are forecasting a further rise of nearly 10 percent during 1984. This is a larger rise than now indicated by private surveys of spending intentions, but we believe the strength of final sales, rising capacity utilization, and large cash flows will induce firms to enlarge their investment programs.

The housing and export sectors by contrast are the areas tending to damp expansion of overall activity. Housing starts in September declined 14 percent from the elevated rate in the month earlier while building permits dropped further. Home sales, however, picked up a little in September and mortgage money from traditional and non-traditional sources seems plentiful at slightly lower rates than prevailed in late summer. In any event, we expect the current level of mortgage rates to be consistent with real estate activity in this quarter and next, little changed on balance from the reduced pace of September. Exports over the near term also are expected to be sluggish in view of the slow pace of recovery abroad and the continuing high level of the dollar in exchange markets.

The staff forecast overall basically has a contour similar to that presented at recent meetings, but the near term outlook now seems appreciably stronger than forecast previously. That additional strength is reflected in higher labor and capital resource utilization over the course of the forecast, and is also associated with a little less optimistic view on inflation prospects, as discussed in the presentation on inflation.

FOMC
SHAxilrod
November 14, 1983

For a year now, the federal funds rate range in the directive has remained at 6 to 10 percent, with effective use made of only the upper half of that range. The funds rate averaged near 9-1/4 percent in November '82, hit a low of around 8-1/2 percent in early 1983, and most recently has traded around 9-3/8 percent. That stability has been accompanied by a fairly substantial swing from rapid to relatively slow growth rates in narrow and broad monetary aggregates, with all of the aggregates now well within the longer-run ranges for 1983 adopted at mid-year. The stability in the funds rate has also accompanied a strong rebound in the economy—a rebound no doubt aided by the Committee's willingness to accommodate the considerable growth of M1 of late 1982 and the first half of 1983.

While money growth was rapid enough to encourage a strong cyclical resurgence of the economy, even in face of a rise in the demand for money to hold relative to GNP, there may still be an element of surprise in the strength of GNP if one focuses instead on the level of real interest rates. Many might have argued in late '82 and early '83 that a strong recovery required a lower level of real rates than we seemed to have had at the time, and by implication lower nominal rates. Not only was the funds rate high in real terms against the then current rate of inflation, but bond rates also seemed high in real terms against the presumed reduction in expected rates of inflation that had taken place. Treasury and corporate bonds did not vary substantially over the first half of 1983 from their 10-1/2 and 11-7/8 percent averages, respectively, of November '82.

The strength of the recovery may, of course, be taken as evidence that real rates were not in fact particularly high when compared with the

real returns that might be anticipated by borrowers. A greater surge than anticipated in corporate profits may be one sign, for example, that real returns have been strong. In addition, the recovery has been led by consumer spending, much of which is not strongly influenced by interest rates--with disposable income fueled by a fiscal deficit that the Government necessarily finances irrespective of the level of interest rates. Finally, there appears to have been a pent-up demand for housing, with willing borrowers at mortgage rates in the 12-1/2 to 13-3/4 percent area.

One question that may naturally arise now, as the recovery approaches its second year, revolves around whether interest rates presently are or are not consonant with continued recovery at a reasonable pace without regeneration of excessive inflationary pressures. Nominal rates on corporate and Treasury bonds are currently about 3/4 to 1 percentage point above November '82 levels, while mortgage rates are a little lower.

Whether this means that there has been some added restraint is not an easy question, since the answer depends in part on the degree to which price expectations may have worsened and in part on whether borrowers' expectations of the real rate of return from investment have changed. Actual price performance has probably been better than would have been expected a year ago with so strong a recovery, but whether this has been translated into a view that inflationary pressures will remain damped into the future is not very clear. Some traditional signals of a worsening in inflationary attitudes are quite muted. The dollar has remained relatively firm on exchange markets, and precious metal prices have edged down over the past year. However, there has been some steepening in the upward tilt of the yield curve over the past year, but only a little. And a recent

survey of market participants indicates that, although upward price expectations are no higher than a year ago, there have been small steady upward changes in price expectations since spring, suggesting that a revision in attitudes may be in process. In any event, continued strengthening of business spending plans, at current levels of nominal interest rates, is not inconsistent with a view that the present level of real market rates, whatever it may be, is not unduly restraining.

Probably the safest assumption is that present nominal interest rates imply real market rates that are not substantially higher than they were a year ago--and might just be in process of becoming lower if upward price expectations strengthen as the recovery continues into early next year at yet again an unexpectedly rapid pace. That sort of assumption would not seem to argue strongly for or against either an easing or tightening thrust of monetary policy at this time. If inflationary expectations were clearly worsening it would argue for a tightening of reserve availability, but as I noted evidence in that respect is not clear. On the other hand, if the real return to capital were falling because of reduced expectations of sales and profits at current prices, that would argue for some easing of pressures on bank reserve positions, but businesses do not now seem to be planning as if that is likely.

The monetary aggregates are generally useful guides to policy in such uncertain circumstances in the real economy. They too--being well within their longer-run range--are not suggestive of the need for much change in policy thrust over the near term. The weakness of M1 relative to the short-run September-to-December path adopted at the last meeting probably represents in part an unwinding of the earlier build-up in such money balances relative to GNP. While the drop of interest rates in the latter

part of '82 no doubt contributed to that build-up, I still believe that diminished confidence in the economy also played a role. It seems likely to me that restoration of confidence in recent months has also contributed to the sizable rebound in M1 velocity in prospect for the current quarter. Thus, it is not very clear that the current weakness in M1--particularly with M2 and M3 in line with anticipations--should be interpreted as itself signaling a need for reduced reserve pressures.

I am afraid, Mr. Chairman, that we are still in a situation where neither the monetary aggregates, nor interest rates, nor the economy at large can be said to be giving unequivocal signals for policy. Which of the three alternatives for policy presented has appeal will in those circumstances necessarily depend on judgments about the whole economic situation--but, if I might venture, including a judgment at this time about whether we are or are not entering a period in which the risks of a resurgence in inflationary pressures are beginning to overbalance the risks that recovery will fall away to an unsatisfactory pace. Even if no change is made in the initial borrowing assumption for establishing reserve objectives, such a judgment about the risks of inflation relative to recovery would also influence the kind of response that the Committee would desire in face of unexpected variations in the monetary aggregates--symmetrical or asymmetrical; if asymmetrical, whether more sensitive to a strengthening or to a weakening in the aggregates.