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# **Business Conditions**

**Inflation**

**october  
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## To be continued

*The November issue of Business Conditions will feature a second article on inflation that will consider price and wage controls, living standards, corporate profits, the federal budget, environmental costs, and international aspects.*

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# Inflation

Dictionaries define “inflation” in the economic sense as a sharp rise in the quantity of money and credit that causes a rapid and continuing rise in the general price level. In common usage, however, inflation invariably means the rise in prices itself. In 1973, prices rose at an accelerated pace. The two previous years had seen less rapid increases following 1970 which marked the culmination of the inflation of the past decade. Because food prices led the rise in prices in 1973, the average family has been more acutely aware of inflation this year than at any time since the Korean War. The impact has been particularly painful for those whose incomes have not kept pace with the prices of the things they buy.

Inflation is not an exclusively American phenomenon. Indeed, prices have risen more rapidly in other industrialized nations than in the United States in recent years. Because of the growing importance of international trade, U. S. manufacturers and retailers have been competing for many goods in world markets. Inflation abroad, therefore, has affected domestic prices more directly than in the past. This factor has been compounded by the substantial devaluation of the dollar.

The end of World War II ushered in a new era of almost continuous inflation both here and abroad. In only two years since the war, 1949 and 1955, have average prices of goods and services purchased by American consumers declined—and these developments were associated with mild recessions. Prior to World War II, prices had declined for extended periods at various times, notably after the Civil War and in the Great Depression of the early 1930s. Such substantial declines in the general price level, called “deflations,” typically

are associated with depressed economic conditions, declining incomes, high unemployment, and bankruptcies—and like rapid inflations are to be avoided. Fears of serious deflations hamper the struggle to keep inflation in bounds.

Almost everyone opposes inflation in the abstract, but upon scrutiny, this opposition turns out to be focused on increases in the prices of goods and services people buy. Increases in the prices of the goods and services people sell—which for most individuals are the wages and salaries received for their labor—are viewed quite differently. Most people are both for and against inflation at the same time, which further complicates the problem of control.

Inflation has been near the center of public attention almost continuously since 1966, probably a longer period than ever before. Some analysts think prices will rise at a rapid pace again in 1974 and for many years to come. Widespread expectations of price inflation tend to sustain the momentum of price and wage increases. Moreover, prospects for continued inflation encourage popular acceptance of simple, and perhaps harmful, proposals to solve this deep-seated and complicated problem.

This article offers no “game-plan” to beat inflation. Rather, it: (1) describes methods of measuring inflation; (2) outlines the role played by the price system in allocating scarce resources in a free economy; (3) analyzes factors affecting supply and demand, emphasizing newly emerging forces that hamper the application of traditional methods of inflation control; (4) considers recent experience with price and wage controls; and (5) assesses the impact of inflation on consumers.

## Prices and purchasing power

Discussions of the impact of inflation are often couched in terms of a decline in the “purchasing power of the dollar.” When prices rise, the buying power of the monetary unit necessarily falls—but not proportionately. Theoretically, prices can rise to an indefinite degree, but purchasing power of the monetary unit can decline no more than 100 percent, i.e., to zero.

The terrible German experience of 1923 is often cited as an example of “hyperinflation.” The power of the printing press was used to produce billions upon billions of paper marks, at a progressively accelerated rate, so that these notes and all claims denominated in fixed amounts became literally worthless. The United States has never experienced inflation remotely approaching this severity. The closest analogue to the German case in our history was the inflation in the Confederate States late in the Civil War.

It is sometimes said that the dollar is now worth 74 cents, or 66 cents, or 31 cents, etc. But this is only a figure of speech. The dollar is always worth 100 cents. But 100 cents today buys less than in years past. The only way to compare the purchasing power of a monetary unit over a period of time is through price indexes of a broad range of goods and services. The following sections describe the major price indexes used in the United States.

### “The cost of living index”

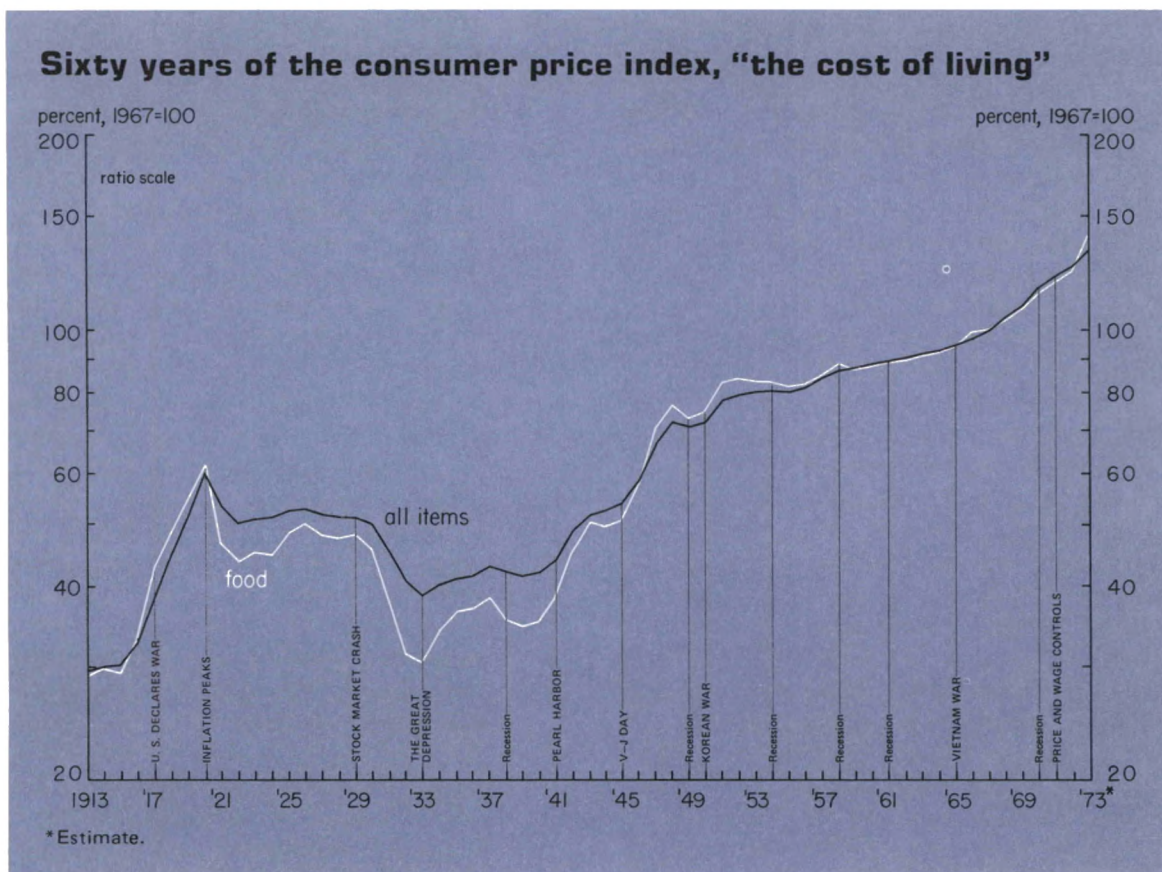
The most commonly used measure of the general price level is the consumer price index (CPI) published by the Bureau of Labor Statistics (BLS) of the U. S. Department of Labor. The CPI, commonly called “the cost of living index,” is often featured on the front pages of newspapers when monthly data are released showing price changes in the previous month.

The CPI is the statistic designated for calculating changes in wage rates in virtually all union contracts that call for periodic cost-of-living adjustments (COLA). The CPI also is widely used for inflation adjustments of wages and salaries by non-union employers. Moreover, the CPI is the measure frequently used to “escalate” rents, leases, annuities, and other payments (even interest) to protect the recipients’ real income from erosion by inflation. Clearly, the growing use of escalation clauses in contracts of all types, while reasonable, has the effect of causing inflation to “feed on itself” and aggravates the problem.

The CPI was first published in 1919, in a series that was calculated back to 1913, to measure the impact of inflation on wage earners during and after World War I. In the past half century, the index has been revised periodically to broaden its coverage, to update the items covered and their relative importance, and to incorporate improved statistical techniques.

The BLS also publishes monthly CPIs for major metropolitan areas, including Chicago, Detroit, and Milwaukee. Although certain prices, such as rents, vary significantly among major centers, changes in these prices over a period of years follow the national pattern quite closely.

Currently, prices of about 400 goods and services are priced each month by BLS representatives in 56 metropolitan areas. The items sampled are those commonly purchased by urban wage and clerical employees and their families. Prices of individual items are converted into “indexes of relatives” with a base period, currently the average for 1967, equal to 100. The indexes for individual items are combined into the overall index with “weights” reflecting each item’s proportion in the spending of a sample of wage earner



and clerical worker families surveyed in 1960-61.

In December 1971, the relative importance (based on the weights) of the major expenditure groups in the CPI were as follows: food, 22 percent; housing (including upkeep and furnishings), 34 percent; apparel, 11 percent; transportation, 13 percent; and health and recreation, 20 percent. Sales and property taxes are included in these groupings, but not income or social security taxes. These proportions have not changed significantly in recent years, and variations between urban areas are small.

### Problems of measurement

Among the 400 items sampled for the CPI are prices of instant mashed potatoes and psychiatric services, which some fami-

lies never use; new automobiles and automatic washers, which may be purchased only infrequently; mortgage interest rates, which homeowners may incur only once in a lifetime; and rents, which are paid only by renters. The 22 percent weight assigned to food in the CPI is too low for some families and too high for others. Clearly, changes in the CPI cannot precisely measure changes in the living costs of any given family or individual, and for some, its readings may be substantially off the mark—especially for the poor and those with incomes well above the average.

Aside from problems relating to the selection of items to be priced and the determination of appropriate weights, comparisons of price changes over time should be used with care because of changes in the quality or nature of goods and services pur-

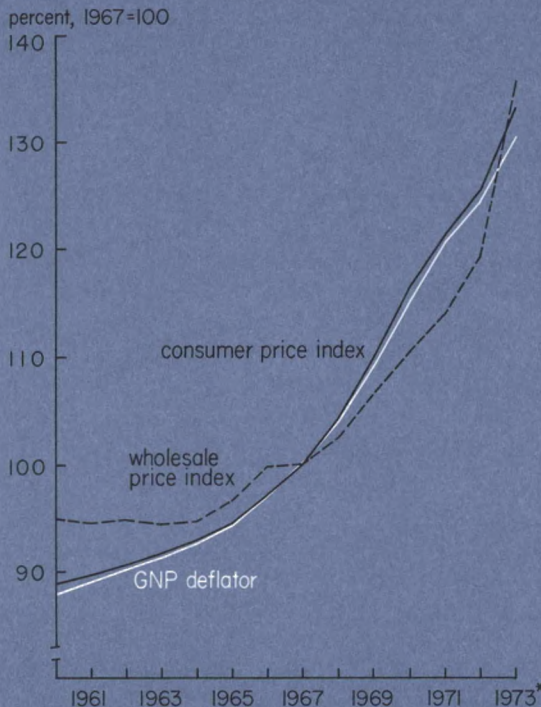
chased. Some goods popular ten or 20 years ago are no longer on the market, others have been modified significantly, and many new products have been introduced. Any price index is almost certain to be somewhat behind the times, both in weighting and in coverage of particular items. The BLS makes adjustments for quality changes as new and presumably better autos and TV sets or other products reach the market. But such adjustments involve judgments and cannot be precise.

The CPI for September 1973 was 136 (1967=100). This means prices averaged 36 percent more in September of this year than in 1967. By this measure, a dollar would buy 74 percent as much in September as in 1967 (the reciprocal of the price index), and purchasing power had declined

26 percent ( $74 + 26 = 100$ ). For September, the food component of the CPI was at 148, up 19 percent from a year earlier. For commodities other than food, the index was 124, up only 3.3 percent. Throughout the CPI, indexes for major groups differed widely from the total, and indexes for particular items were significantly different from the group in which they are included. The purchasing power of the dollar relative to the past depends on which items are purchased.

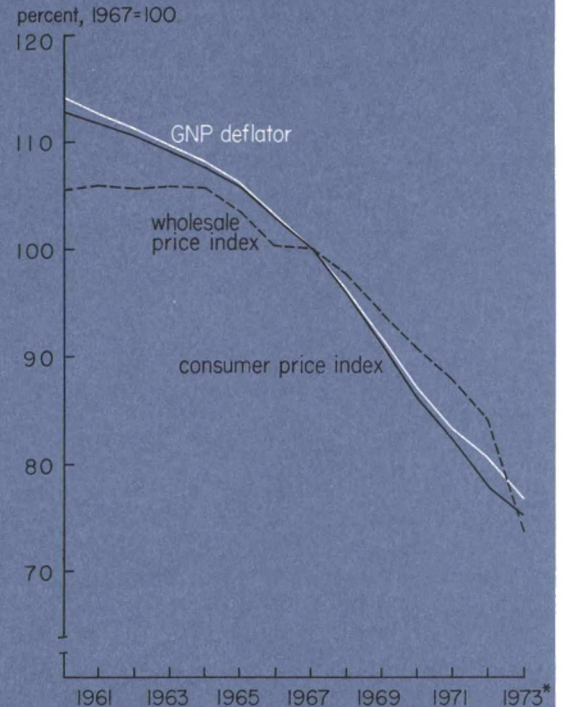
Before changing to the 1967 base in 1971, the CPI was published on a 1957-59=100 base. Because some escalation clauses are stated in terms of the 1957-59 base, the bureau continues to publish the overall CPI on this base. In September, the index was 158 on the

**Three broad measures of price changes are also ...**



\*Estimate.

**Measures of the purchasing power of the dollar**



1957-59 base, but the increase from a year ago and the proportional changes between points in time are exactly the same as when the index is presented on a 1967 base.

### The wholesale price index

The wholesale price index (WPI), like the CPI, is prepared by the Bureau of Labor Statistics. A continuous WPI series is available back to 1890. Similar series produced by other statisticians have been calculated back to Revolutionary War days, using newspapers and other sources for price quotations. Like the CPI, the WPI has been revised and enlarged periodically. Currently, about 2,500 specified items are priced monthly in wholesale markets, including raw materials, semi-finished products, and finished goods. The items included range from milling machines, motor trucks and iron ore to oil of lavender, razor blades, and canned pork and beans, but they comprise only a tiny fraction of the tens of thousands of products sold in wholesale markets.

The WPI does not cover services, except for gas and electricity purchased by nonresidential users. It does not include prices of transportation, construction activity (except for building materials), or real estate. (Neither the WPI nor the other measures of prices discussed in this article include prices of securities.) Weights are based on data from the Census of Manufactures. Raw materials account for 11 percent of the wholesale price index, intermediate products for 45 percent, and finished goods for 44 percent.

In September 1973, the WPI was 140 (1967=100), up 17 percent from a year earlier, more than double the rise in the CPI. Farm products were up 56 percent from a year earlier in September, while raw industrial products, including metals, were up 21 percent. Consumer finished goods prices were up 6 percent, and prices of business equipment averaged only 2 percent higher.

The sharper rise in raw materials in the past year, as compared to finished goods, is a usual development when prices are rising rapidly in commodity markets.

Prices of finished goods are much "stickier" than prices of raw materials. This is because most of the difference between raw materials prices and finished goods prices reflects costs of labor and overhead which tend to rise continuously through the years. Moreover, prices of finished goods are often "administered," i.e., they are determined by executives' decisions rather than by impersonal market forces.

The WPI is not suitable for use as a general measure of the purchasing power of the dollar. This is because of its restricted coverage and because of the volatility imparted to the whole index by farm products and other raw materials traded in world markets. Moreover, the weights used in the WPI, based upon quantities purchased in all markets, do not approximate closely the "market basket" of any given group of purchasers.

It is often more difficult to get accurate and representative quotations for wholesale prices than for consumer prices. Unit prices in wholesale markets often depend on long-term contracts, quantities purchased, services rendered, and are worked out in individual negotiations. Wholesale prices are often quoted in terms of a discount from a published list price, with the amount of the discount reflecting changing market conditions. The BLS favors actual transaction prices rather than list prices. But quotes are usually obtained in a limited number of markets (on the Tuesday in the week of the 13th of the month for some products) and may not be typical of average prices paid by all purchasers throughout the month.

### The GNP "deflator"

The general public, in recent years, has become increasingly familiar with sta-

tistics relating to "the gross national product" (GNP), which are prepared by the Bureau of Economic Analysis of the Department of Commerce. GNP is the market value of all goods, structures, and services produced by the U. S. economy in a year. GNP has three major components: consumer purchases, business investment (including residential construction), and government purchases. To avoid double counting, only final sales transactions are included plus changes in business inventories.

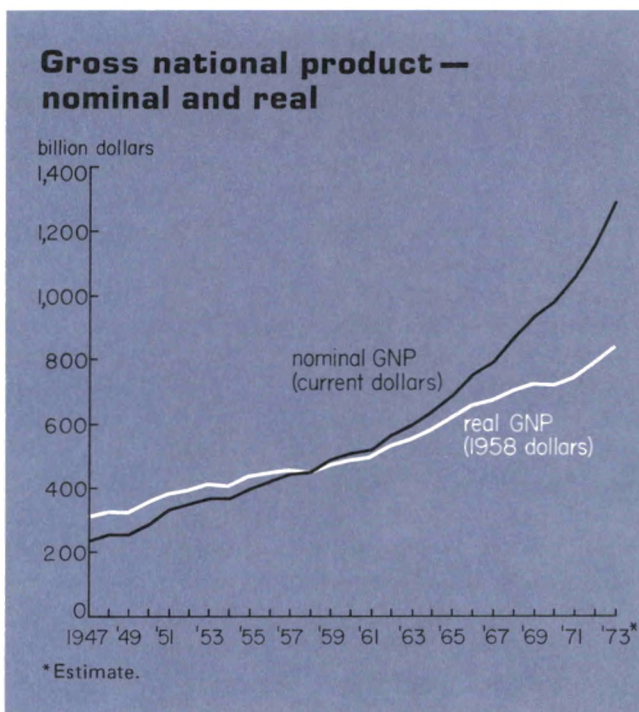
Changes in GNP in current dollars ("nominal" GNP) reflect changes in prices as well as changes in physical output. To obtain a measure of total real output ("real" GNP) in dollars of constant purchasing power, components of nominal GNP are "deflated" by appropriate price indexes. The ratio between nominal and real GNP, called "the implicit price deflator," is widely accepted as the most comprehensive measure of changes in the general price level. It is often called "the GNP deflator" or simply "the deflator."

About 100 goods and services included in nominal GNP are deflated separately through the use of several hundred price indexes, all using 1958=100 as a base year. As in the cases of the CPI and the WPI, the choice of a particular base period for the GNP deflator does not, in itself, affect changes over time. Personal consumption expenditures are deflated mainly by various components of the CPI; structures by construction cost indexes and reports on home prices; producer equipment and inventory changes by components of the WPI; government purchases of goods and services by the WPI; and government wages and salaries by payroll data.

After deflation, the GNP components are totaled to obtain real GNP. The GNP deflator is obtained by dividing nominal GNP by real

GNP. It is called the "implicit" deflator because it is not a price index in the usual sense. The deflator is weighted by the proportions of expenditures in the various components of GNP in each year or quarter, unlike the fixed weights of the CPI and WPI.

Changes in the GNP deflator between periods of time reflect changes in the composition of GNP as well as changes in prices. If purchases of automobiles, for example, rise more than other purchases between two years, and prices of automobiles rise less than other prices, the effect will be to slow the rise in the overall GNP deflator. The Bureau of Economic Analysis also prepares fixed weighted price indexes which show how average GNP prices would have changed in recent years if no shifts among the components of GNP had occurred. Such fixed weighted indexes may, at times, move at a significantly different pace than the GNP deflator. Any year or quarter can be used as the base for a fixed weighted index and such indexes may show different





changes over time as shifts occur in the product mix. Another variation is the "chain weighted" index in which percent changes in prices from one quarter to another are weighted by the composition of GNP in the previous quarter.

There are advantages and disadvan-

tages to all three methods of weighting: fixed weights, shifting weights, and chain weights. The "best" weighting method may depend on the purpose of the analysis. In any case, it is well to keep in mind the method of weighting when interpreting the movement of any price index.

## Sixty years of price changes

Despite substantial differences in the CPI and the GNP deflator, the two measures of general price change tend to move together fairly closely through time. In the five-year period 1967-72, for example, the CPI increased 25 percent, while the more comprehensive deflator rose 24 percent. In 1973, the CPI will probably average about 6 percent over 1972, while the deflator will probably be up about 5 percent. Comparisons have not always been this close but the CPI, intended only as a measure of prices paid by urban wage earners, has paralleled changes in the gross national product deflator fairly closely.

Consumer prices had been rising gradually prior to the outbreak of World War I in 1914. During the war, and particularly after the U. S. entry in 1917, the uptrend accelerated. Prices continued to rise until mid-1920, about the time of the start of the first postwar recession. In 1920, the cost of living was slightly more than twice as high as in 1913, and almost all of this rise came in the 1916-20 period.

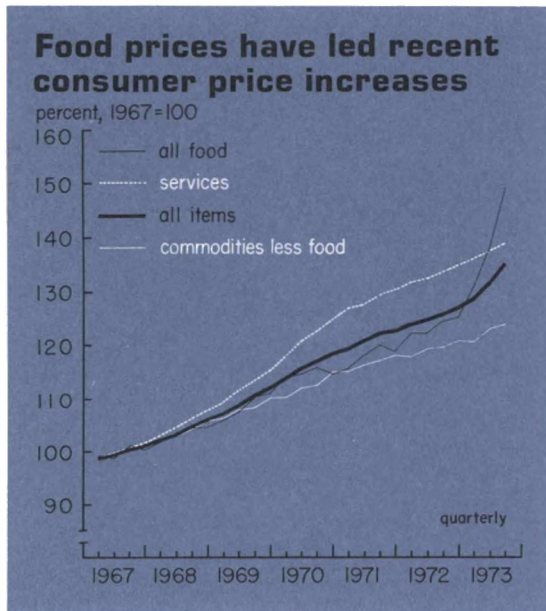
### Between the wars

The inflation that peaked in 1920 was much steeper than in any period since that time. Hardships caused by inflation in those years were much more severe than at any time in the inflationary bursts since World War II, not only because prices went up more after World War I, but also because there were fewer government and private institutions to help unfortunate fami-

lies cope with their problems. Some groups did very well for themselves in the 1920 inflation, e.g., farmers and the building trades, but the sharp rise in prices was a traumatic experience and contributed to Harding's landslide victory in the Presidential campaign of 1920. (He had pledged "a return to normalcy.") For the most part, the groups that profited most by the inflation after World War I also suffered most in the collapse that followed.

The 1920 inflation bubble broke about midyear. A business recession began, one of the sharpest in history, and the CPI plummeted, declining 11 percent in 1921 and 6 percent in 1922. For the rest of the 1920s, consumer prices were relatively stable at a level about 75 percent higher than in 1913. Many farm areas were hard hit in the general prosperity of the 1920s because of farm mortgage foreclosures and rural bank failures, both associated with defaults on loans made when prices of land and crops were inflated. Interestingly, the boom in the stock market and general business that culminated in the 1929 crash was preceded by two years of gently declining consumer prices.

In the Great Depression, 1929 to 1933, the CPI declined 24 percent. The overall index in 1933 was still about one-third above the 1913 level. Prices of raw materials were at the lowest level of the century and many markets were demoralized. Real GNP declined about 30 percent from 1929 to 1933, while the unemployment rate rose from about 3 to 25 percent.



Because of the sharp decline in the price level in the Great Depression, people who were fortunate enough to maintain their incomes enjoyed a substantial rise in their buying power. But misery was the more general state of affairs. Relief rolls soared to unprecedented heights. Many families lost their homes or farms because they could not service or refinance mortgages. Deflation and the Great Depression were largely responsible for the heavy majority that elected Roosevelt in 1932.

Consumer prices rose only moderately from the depths of the Depression to 1937 when a new business "recession" began that continued into 1938. Prices declined slightly in 1938 and 1939. In the latter year, the CPI was 7 percent above the Depression low, but was 19 percent below the level of the late 1920s.

Real GNP had recovered to the 1929 level in 1937, and in 1940 it was 12 percent higher than in 1929. The average number of people employed, 47.5 million, was as high as in 1929. Because of growth in the labor force, however, the unemployment rate averaged 15 percent in 1940. A relatively stable price level usually is taken

for granted as a desirable goal of economic policy, but price stability in the late 1920s did not prevent the Great Depression, and price stability in the late 1930s did not bring the nation back to full employment.

## World War II and the 1950s

The rearmament program of 1941 was associated with a rapid increase in prices. Inflation continued at a rather pronounced rate throughout the remainder of World War II, despite pervasive controls over wages and prices, allocations of all strategic materials, and rationing of finished goods. When price controls were lifted in mid-1946, the CPI soared, rising 6 percent in the month of July alone.

A burst of inflation was almost inevitable after World War II. Incomes had increased sharply, many people wished to spend their wartime savings, and supplies of consumer goods increased rather slowly as U.S. industries "reconverted" from military production. Moreover, part of the surge in prices following decontrol probably reflected the emergence of hidden inflation concealed by black market activities or other factors.

Despite inflation, the economy escaped the serious postwar recession that many had feared would occur during the reconversion period. Concern over the prospect of a return to the depressed conditions of the 1930s resulted in the passage of the Employment Act of 1946, often misnamed the "Full" Employment Act. The act declared "the continuing policy and responsibility of the Federal Government (to) promote maximum employment, production, and purchasing power." Nothing was said specifically about inflation.

Prices continued to rise until the autumn of 1948 when the first mild postwar recession began. But the recession year 1949 did not see a collapse of the price level such as had occurred in 1921. Partly, this was because price inflation had been

better contained than in the earlier period (despite the fact World War II was much longer and much more expensive). In addition, fiscal and monetary policy were employed vigorously to slow the business downturn. Finally, incomes were maintained by such programs as unemployment compensation, social security, and farm price supports, which were not in effect in the 1920s and early 1930s. GNP, both in real and nominal terms, totaled almost exactly as much in 1949 as in 1948. The CPI averaged only 1 percent lower in 1949 than in 1948. In 1948, the CPI had been at a record high and was 72 percent above the 1940 level.

Prices were relatively stable throughout 1949 and in the first half of 1950, despite a gradual uptrend in business activity. The outbreak of the Korean War in June 1950 set off a new wave of inflation. Price controls and allocations were introduced again. The demands of the war on the economy were much less in the Korean War than in World War II, however, and it was possible to remove most controls before the final cease fire in mid-1953. At that time, market forces had pushed many prices, especially prices of raw materials, below the established ceilings.

Prices increased only moderately from 1953 through 1956. (A second mild post-war recession had followed the end of the Korean War.) But the CPI rose about 3 percent in both 1957 and 1958. The increase in prices in 1958 was disturbing to many observers because increases continued despite the moderate 1957-58 recession. As a result, the causes of and cures for inflation became a major issue of debate. It was not realized at that time that the nation was entering a period when inflation would be kept under control to a remarkable degree.

## The 1960s and 1970s

In 1965, the CPI averaged 9 percent higher than in 1958—an increase of just

about 1 percent per year in the intervening period. Some analysts maintained that the BLS did not adequately adjust the CPI for quality improvements in goods and services when measuring price changes. If this had been done, they argued, the CPI would have been about stable in these years.

Price stability in the early 1960s did not bring general satisfaction. Many complained that the economy was not growing fast enough. Real GNP was rising at a good pace, and employment was increasing by more than 1 million per year, but the unemployment rate averaged over 5 percent and many people thought it should be 4 percent or less.

Renewed acceleration of prices in 1966 and following years was directly related to the rapid expansion of the U. S. role in the Vietnam War. Manpower and resources were drawn from a vigorous civilian economy and thrown into the war effort. Federal deficits increased sharply, and a tax increase was enacted belatedly in 1968.

The CPI rose almost 2 percent in 1965, 3 percent in 1966 and 1967, 4 percent in 1968, over 5 percent in 1969, and 6 percent in 1970—the largest year-to-year rise since the Korean War year of 1951. The combination of a mild business recession in 1970, a sluggish economy in 1971, and the imposition of wage and price controls in August 1971 helped slow increases in the CPI to 4 percent in 1971 and 3 percent in 1972. But the reversal of the inflation trend was not destined to continue. In 1973, the CPI probably will rise about as much as in 1970.

For the 1965-73 period as a whole, the CPI rose at a compounded annual rate of 4.4 percent. This compares with a 2.4 percent annual rate in the 24 years since 1949, and 2.5 percent in the 60 years since 1913. The nation has made great progress in these decades, but the record on inflation control is far from satisfactory.

## Supply and demand

Economics is sometimes defined as the study of the processes through which limited resources of land, materials, and manpower are divided among unlimited human wants. In a free enterprise economy, allocations of goods and services depend on flexible prices that reflect the forces of supply and demand. Analysts of price trends sometimes emphasize “cost-push” inflation in which sellers raise prices because of rising costs—labor, purchased services, materials, capital equipment, and taxes—in order to preserve profit margins. Cost-push inflation appeared to dominate in the 1970-72 period. At other times, e.g., in the late 1960s and in 1973, emphasis has been on “demand-pull” inflation with buyers exerting their purchasing power—based on incomes, holdings of liquid assets, and ability to incur debt—to bid up prices. At all times, prices are influenced by both sides of the bargaining equation, supply *and* demand, although to varying degrees.

The price system performs most efficiently when many buyers and sellers compete under conditions that permit maximum freedom of individual decisions, the economist’s ideal of perfect competition. In practice, there are always limitations on market forces, such as inadequate information available to buyers and sellers, monopolistic practices of unions and businesses, and government regulations.

Markets may be local, regional, national, or international in scope. In the past decade, domestic prices of a growing list of raw materials and finished products have been influenced by worldwide forces. A striking example of the interaction of international forces occurred last spring when the sharp increase in the price of soybeans was attributed, in part, to the reduced catch of fish off South America which increased demand for soybeans for feed.

Most utility services—such as gas, elec-

tricity, and telephone service—are available locally from only one seller. Utilities are often called “natural monopolies.” It would be inefficient, if not impossible, to have more than one set of pipes or cables supplying a given neighborhood with the same service. Because utilities typically have no competitors, their prices usually are regulated by state commissions in lieu of market forces. But utility rates are not isolated from inflation. In order to assure continued availability of service, regulators must allow increases in utility rates to cover rising costs of labor, fuel, capital equipment, and higher interest rates.

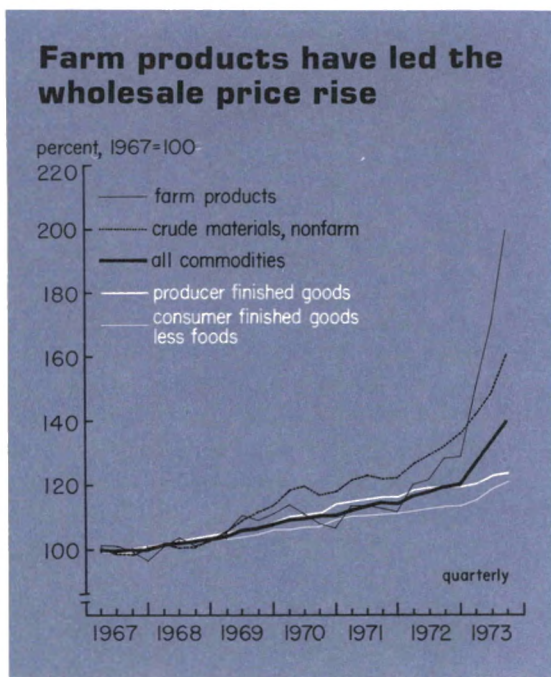
Aside from utility services, virtually all goods and services can be obtained in the United States from a variety of suppliers. The antitrust laws and Federal Trade Commission regulations are in force to attempt to prevent two or more sellers from entering “collusive” agreements to fix prices at monopolistic levels.

In a sense, all consumer goods and services are in competition for consumers’ dollars. The purchase of a new family car may preclude the purchase of a new set of furniture. Vacations may be curtailed to pay for dependents in college. Often, products are close substitutes for one another—e.g., pork and beef, used cars and new cars, and double knits and woolen worsteds—and changes in the price of one product directly affect the price of the other. The ability of consumers to shift to alternative products helps to hold down increases in the price of items in short supply.

The sharpest price movements, up or down, tend to be in agricultural commodities because producers have only a limited control over total output in the short run. Producers of manufactured goods usually are able to control supplies of their products by adjusting production schedules in a matter of weeks or months when demand

increases or declines. As a result, market prices of manufactured goods are less volatile in response to changes in demand than prices of raw materials.

If total spending increased in step with the rise in total supplies of goods and services, the general price level would be fairly stable, although individual prices would rise or decline as determined by conditions in the various markets. But general price stability has prevailed only for limited periods in U. S. history. A variety of factors, including unforeseen shifts in consumers' willingness to spend, changes in business investment plans, new government programs, and international developments have disrupted earlier periods of price stability. Since World War II, pressures for increases in worker compensation, demands for public services, wars and threats of wars have combined to keep the price level moving upward, but not at a steady or readily predictable rate. In recent years, the picture has been further complicated by shortages of basic minerals, most of which were in ample supply in earlier decades.



## Materials shortages

Perhaps the most spectacular economic development of 1973 has been the emergence of serious shortages of materials and components on a broad front. In late 1972, some analysts thought that margins of idle plant capacity and pools of unemployed workers would prevent a significant acceleration of price inflation in 1973. Unfortunately, these unused resources proved to be illusory in large degree.

The list of items in short supply now includes steel, nonferrous metals, fuel, building materials, chemicals, textiles, and paper. Some businessmen have said, "You name it! Everything is short." Most of the industries producing items that are currently in critically short supply complained of burdensome excess capacity as late as 1971 and early 1972.

Theoretical economists sometimes argue that there can be no such thing as "shortages" if prices are allowed to rise to ration available supplies to the highest bidders. But this is too simple an explanation, even without the complicating factor of price controls. Most manufactured goods move from vendors to users on the basis of continuing relationships between firms, rather than through impersonal free markets. When demand rises faster than output, order lead times are extended and order backlogs build up. In recent months, lead times quoted by suppliers have averaged about double the year-ago level, and order backlogs have increased substantially. Many firms have controlled the acceptance of new orders in an attempt to weed out duplicate orders that would be canceled if demand slackens. One common way of controlling distribution has been to allocate new output to customers on the basis of purchases of the previous year. This has the effect of maintaining the "status quo," and prevents more vigorous firms from expanding their market shares.

Shortages of materials and compo-

nents have held down output of many types of finished products, both hard and soft goods. Output of both materials and finished goods, moreover, has been held back in some industries by inadequate availability of skilled or trainable workers, fuel, and electric power.

Purchasing managers describe the materials shortages of recent months as the worst they have known since the Korean War or even World War II. For many items, e.g., plastics, paper, and petroleum, U. S. output will not expand significantly for two or three years when new facilities are scheduled to come on stream. One steel firm has recently announced a long-range expansion plan.

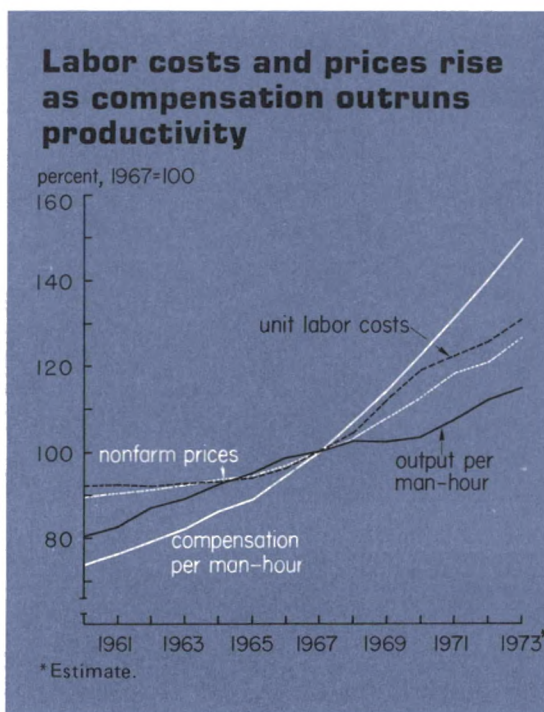
Materials shortages mainly reflect strong demand, both domestic and foreign. If the economy "cools off," some of today's shortages will be alleviated quickly. But there are other factors. The richest U. S. deposits of oil, iron ore, and other minerals have been all but exhausted and new deposits often are very costly to develop. Development of new sources, moreover, is complicated by environmental considerations that add to costs or stall development plans. In some processing industries—e.g., steel, zinc refining, paper, foundries, and cement—plants have been taken out of production because of the prohibitive cost of renovation to meet new pollution and safety standards.

Capital expenditure programs are now underway in most industries to increase supplies of the materials and components in short supply. Major expansions of basic industries, however, usually take three to five years from the initial decision to go ahead to the completion of the project. While expansion programs are underway, moreover, they increase problems of short supplies because buildings and equipment require scarce materials and manpower which otherwise might be used for the production of finished products desired by customers.

## Productivity and prices

Wages and salaries are by far the largest element in business costs, and they account for the major share of consumer buying power. Output per man-hour (productivity) tends to increase year by year as a result of the introduction of improved facilities, the use of better managerial techniques, and the employment of more highly skilled labor. Rising productivity can lead to declining prices, and often does so in rapidly developing industries. Historically, however, declining general price levels have been associated with business recessions, both in the United States and in other industrialized nations. Conversely, rising prices and rising worker compensation appear to encourage optimism and a willingness to incur debt. Price inflation has been associated with expanding economies, particularly since World War II.

The wage-price guidelines (called "guideposts" officially) suggested by the Council of Economic Advisers in early



1962 were based on the theory that labor costs per unit of output and the general price level would be about stable if average increases in worker compensation, including wages and fringe benefits, approximated the 3.2 percent average gain in productivity for the previous five years in the private nonfarm economy. Increases in worker compensation of 3.2 percent were judged "noninflationary," and this figure was selected as the guide for labor negotiations.

Since 1962, increases in productivity have averaged only 2.6 percent, mainly because there was no rise at all in the two years 1969 and 1970. Productivity increases of about 4 percent were achieved in both 1971 and 1972.

Productivity usually rises most rapidly in periods of vigorous growth in real output. Production rises faster than man-hours in the early stage of an upturn because facilities are operated closer to optimum rates and workers are used more efficiently. The rise in productivity usually slows when output approaches capacity and marginal facilities and less capable manpower are employed. In a recession, on the other hand, productivity may decline because output usually drops more rapidly than man-hours. A portion of a plant's work force are part of the "overhead" and must be on the job, even at low rates of operation. Also, managers may defer layoffs of experienced workers, hoping that orders will revive.

Total labor costs per unit of output and the general price level both rose very gradually from the late 1950s through 1965. In 1966 and the following years, the rise in both labor costs and prices accelerated because compensation increases exceeded annual gains in productivity by wide margins. Since 1967, compensation per man-hour has increased about 7 percent each year—three times the average annual rise in productivity in this period and well above any conceivable long-term trend in

productivity gains. In the five years, 1968-73, unit labor costs rose over 5 percent per year and prices in the nonfarm economy increased over 4 percent per year.

Increases in output per man-hour in 1973 probably will be closer to the 2.6 percent average of the past ten years than to the 4 percent of 1971 and 1972. The slower rise in productivity is likely to reflect a variety of factors, including tight markets for skilled and readily trainable labor, operations of plants above levels of optimum efficiency, and widespread shortages—raw materials, components, fuel, and electric power.

While increases in productivity are likely to be relatively slower in the period ahead, there is great pressure for larger increases in worker compensation. Union contracts typically are negotiated for three years at a time in major industries, and compensation of nonunion workers is being pushed upward by sharply rising prices and tight labor market conditions. Compensation per man-hour in the third quarter averaged 7.7 percent higher than a year earlier, larger than any year-to-year rise since 1951.

The 5.5 percent guideline for increases in worker compensation established by the Cost of Living Council in 1971 (6.2 percent, including nonwage benefits), and still in effect, was based on an assumed annual productivity rise of about 3.0 percent per year and a rise in consumer prices of 2.5 percent per year. Consumer prices have risen at a much faster pace than 2.5 percent in the past two years, and the 5.5 percent guideline has appeared inadequate to union leaders. In the first nine months of 1973, major labor contracts called for average first-year increases in total compensation of 7.6 percent (excluding cost of living adjustments), below the 8.5 percent first-year increases negotiated in 1972, but well above the guidelines.

*George W. Cloos*

