

Indexation and inflation

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Release of the Consumer Price Index (CPI) by the Bureau of Labor Statistics (BLS) usually makes front page news. Newspaper reports often include commentaries by public officials, business executives, labor leaders, and economists. Significant changes in the index sometimes seem to influence trading in common stocks and foreign exchange. The attention given these reports is well deserved. The CPI provides the best monthly information available on the trend of price inflation, viewed by most Americans as the nation's foremost problem.

This article examines the evolution of the Consumer Price Index, the record of inflation that it traces, and the steady expansion of its influence on economic developments. Understanding the American economy requires familiarity with certain basic statistical barometers. Of these, the CPI has become one of the most important.

The significance of changes in the CPI is not confined to the *measurement* of inflation. Increasingly, the data have become part of the inflationary process itself. Increases in the index trigger proportional boosts in wages and other payments received by large segments of the public—automatically for millions of people, indirectly for millions more. Ties between *past* inflation measured by the CPI and *future* increases in income have institutionalized the wage-price spiral, or more properly, the income-price spiral.

The dismal record

In 1977 the CPI averaged 181.5, compared with 100 in the base year 1967. That was 6.5 percent higher than in 1976. Since 1965, when the first signs of serious inflation since the 1940s began showing up, the CPI has in-

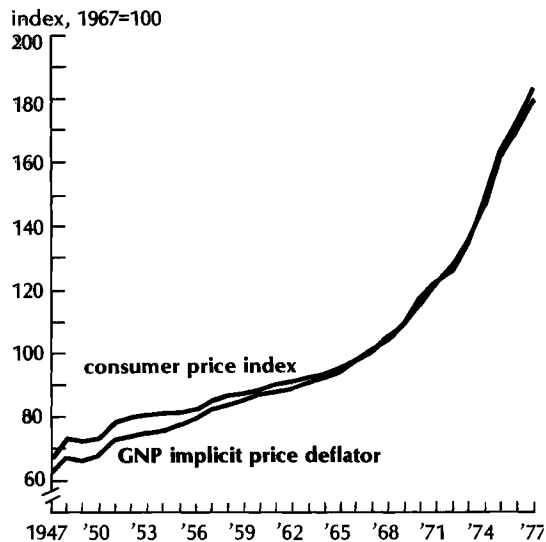
creased 92 percent—an average of 5.6 percent a year. Prices of food and fuel have more than doubled.

In 1949, when the economy was approaching normality after World War II, the CPI was 72 percent higher than in 1939. For the next 16 years, despite the Korean War, the record does not look bad in retrospect. Although there was often complaint about inflation, the average rise in the CPI was less than 2 percent a year. By today's standards, it was a Golden Age.

A long glance back shows the ravages of inflation. In early 1978 the CPI passed 188. This was more than twice the average in 1962, 2.6 times the average of 1949, and 4.5 times the average in 1939. Put another way, the dollar has lost half of its purchasing power in 15 years, 62 percent in 28 years, and 78 percent in 38 years. Movements of the gross national product (GNP) implicit deflator, a broader measure of price change than the CPI, have been similar.

Six percent inflation is now commonly seen as a likely prospect for the next several years. Assuming inflation at that rate, average prices will double in 12 years. If inflation reaches 7 percent, they will double in ten years. And there is no reason to think 6 or 7 percent is maximum. Almost every other country (West Germany being a notable exception) has had a faster rate of inflation. The rate of rise in the United Kingdom has been 13 percent in recent years. In Brazil it has been over 20 percent. (At that rate the price level doubles in four years.) Various countries, including Germany and France, have had "hyper inflation" at various times in this century, the purchasing power of their monetary units being virtually destroyed in the space of a few years, causing social and economic up-

The CPI and the GNP deflator have traced similar paths



heavals and requiring drastic actions, including withdrawal and reissue of the existing currency.

During hyper inflations of the past, policy-makers were often unaware that the process was accelerating so rapidly until it was too late to avert major damage. The United States has, in the CPI, an adequate warning system, signaling the need for counter-measures. The index also provides a means of estimating changes in real, as opposed to nominal, wages and salaries. The index, in fact, was developed 60 years ago to serve that very purpose.

From Wilson to Carter

Today's CPI traces to the first World War. The urgent need for wartime shipping then had drawn many workers to the shipyards, mostly on the East Coast. These workers soon found the purchasing power of wages they had thought bountiful being eroded by sharply rising prices. To help mediate demands for a "fair wage scale," the Bureau of Labor Statistics began in 1917 to survey buying patterns in 32 cities, gathering data on price trends for 145 commodities typically

bought by wage earners. In 1919 the BLS began to publish "cost-of-living" indexes semiannually for these industrial centers.

Prices continued to rise rapidly after the war until the 1920-21 recession. And the BLS continued to monitor price changes. Starting in February 1921, it began publishing a National Consumer Price Index semiannually. This index was in roughly the same form as the present index. The relative importance (weight) assigned to each item was derived from expenditure surveys for 1917-19. These years were also the base period, average prices paid in that period being equal to 100.

Periodic revisions of the CPI have been required to improve coverage and methods. In each revision some goods and services have been dropped from the sample and others have been added. Different weights have also been assigned to take account of changes in the proportion of income spent on different groups of items. In both cases the changes come from new surveys of consumer spending patterns. Publication of the index was quarterly in the 1930s, becoming monthly in 1940. Major revisions were made in 1940, 1953, 1964, and, most recently, in February 1978. The base period has been moved up successively to 1935-39, 1947-49, 1957-59, and finally, 1967, the base retained in the current revision.

Selection of a base period is purely a matter of convenience. Percentage changes over time are not affected by the choice of a base period. Any user of the index can set any year as the base by dividing the entire series by the value for the year he selects, which will be 100 in his newly derived series. The current base 1967 is used for many statistical series, as for example, the Federal Reserve's Index of Industrial Production. A later period will, no doubt, be used sometime in the future. Then, all series will be converted to the new base.

While changing the base period does not change comparisons over time, changes in weights can have a significant effect. The most striking change has been the weight assigned to food (including restaurant meals and alcoholic beverages). The weight assigned to food has declined in successive revisions from

over 35 percent in 1940 to 20 percent in 1978 (19 percent for the new index for all urban consumers). During that time the weight assigned to transportation has risen from 8 percent to 20 percent. In 1940 housing was weighted slightly less than food. Now it is 40 percent, roughly twice as much as food. The current weights were derived from surveys of consumer spending in 1972-73. Because purchases of houses and autos were strong then, housing and transportation may be slightly overweighted, but probably not enough to affect changes in the index significantly.

Changes over the years in the particular goods and services priced and changes in the weights for various types of purchases reflect the increasing prosperity of American consumers. More home ownership, larger homes and apartments, more cars, recreational equipment, foreign travel, restaurant meals, and better health care—all these indicate greater affluence. Wage earners today often buy luxuries only the well-to-do could afford 20 or 30 years ago. Wage earners typically buy luxuries that were not even on the market then.

Whose cost-of-living?

In February the BLS published the latest revision of the CPI. Two new indexes were launched, the old index being continued temporarily. The unrevised CPI for Urban Wage Earners and Clerical Workers will be published through June so contracts using the index to escalate wages and other payments can be changed over.

Issued for the first time is a revised index, like the old index, covering *Urban Wage Earners and Clerical Workers* but with a different selection of items and new weights. Revision of the index has been long heralded. Some labor contracts had provided for an automatic switchover as soon as the new index was available. Spending patterns of about 40 percent of all consumers are reflected in both the old and the new wage earner index.

Also available now is a completely new index for *All Urban Consumers*. Reflecting

spending patterns of about 80 percent of the consumers, this index covers—in addition to wage earners—the self-employed and professionals, the retired, the unemployed, and the “poor.” It does not include rural workers, members of the armed services, and people in institutions. Coverage includes groups with incomes that average both higher and lower than those of wage earners and clerical workers.

Some users of the CPI had proposed dropping the wage earner index in favor of an index with broader coverage that would presumably be more useful as a measure of general inflation. Labor unions objected, however, fearing that a broader index, being less representative of the spending patterns of their members, would not fully reflect price changes of the things they buy. The BLS does not expect much difference in the three CPIs, at least in the short run.

The broader the coverage of a price index the less the index represents the prices paid by any particular group. None of the three CPIs could possibly represent any individual consumer. They include, for example, data for both rents and home ownership. They include prices of new houses and current mortgage rates, data that affect only a small fraction of households each month. They include prices of both new and used cars, children’s apparel, liquor, and other products many people never buy. On the other hand, all households buy one or more items that are not included. And finally, the weighting of major groupings may be far off the mark for particular households or even groups of households.

When first published at the time of the first World War, the CPI was called the “cost-of-living” index. Nearly everybody calls it that today. Purists object to the term for several reasons. The index covers a fixed “market basket” of goods. That consumers tend to buy more of particular items when prices of these items fall and less when prices rise is not taken into account. Also, basic weights are unchanged between revisions, even though new products are introduced constantly and consumer preferences constantly change.

Nor does the CPI cover taxes, tuitions, and other consumer outlays.

Regardless of these arguments, however, the public still refers to the “cost-of-living index” and to “cost-of-living adjustments” (COLA) in wages and other payments. Faulting the practice is futile. It may also be illogical. Cost-of-living is an abstraction that could be narrowed to the food, clothing, and shelter needed to sustain life. In an age when the popular concept of necessities may include private cars, color TV sets, air conditioners, liquor, and prepared meals—in an age such as this, food, clothing, and the shelter necessary for life account for only a small part of consumer outlays.

COLA, income, and spending

The labor contract negotiated in 1948 between General Motors and the United Automobile Workers called for automatic increases in compensation tied to increases in the CPI. This was the first major wage settlement to include such a clause. Automatic increases in wages tied to consumer prices have since become increasingly common.

According to the BLS, 8.5 million union workers are now covered by automatic cost-of-living adjustments. Not all of their contracts provide for a full or “uncapped” COLA. Since the 1960s Congress has applied COLA to Social Security benefits and other payments.

Relative importance of major groups in the Consumer Price Index in December 1977

| | Wage earners and clerical | | All urban consumers |
|---------------------|---------------------------|---------|---------------------|
| | Unrevised | Revised | |
| | (percent) | | |
| Food and beverages | 26.2 | 20.5 | 18.8 |
| <i>Food at home</i> | 18.8 | 13.5 | 12.2 |
| Housing | 35.5 | 40.7 | 43.9 |
| Apparel | 9.0 | 5.8 | 5.8 |
| Transportation | 13.3 | 20.2 | 18.0 |
| Other | 16.0 | 12.8 | 13.5 |
| Total | 100.0 | 100.0 | 100.0 |

SOURCE: CPI Detailed Report, January 1978.

Currently, payments to over 30 million Social Security recipients, 2.5 million federal civilian and military retirees and their survivors, and 20 million food stamp recipients are escalated. And that does not include programs for lunches and breakfasts for 25 million children. For all practical purposes, federal salaries are also tied to the CPI. Last year, for example, 7.05 percent pay increases went to government workers, not counting increases for longevity and promotions.

In addition to wage contracts, a growing but undetermined number of rental, royalty, and child support contracts are escalated automatically by the CPI. Often such contracts, as for example those covering minerals, have nothing to do with costs of living. The index is merely a convenient measure of inflation.

Federal health, welfare, and job training programs are affected by the CPI. The “poverty threshold” and “low income” mentioned in legislation are calculated by deflating reported nominal incomes with the CPI.

The total number of people with incomes that are periodically adjusted for increases in the CPI is far more than those included in these enumerated groups. Most union contracts without COLAs are negotiated with expected increases in the CPI in mind. And to discourage organization drives, employers of nonunion workers often pattern their compensation programs to at least equal compensation in union contracts. Finally, in the interest of fairness or simply to keep up with the market, many employers, even those unconcerned with unions, consult the CPI in setting wage and salary scales. For nonunion workers COLA adjustments are likely to be annual, rather than quarterly as with many union workers.

Escalation of incomes on the basis of increases in the CPI tends to perpetuate inflation by expanding demand without necessarily increasing the supply of goods and services. Increases in income on this basis, moreover, come after price increases made possible by previously existing levels of purchasing power.

A potentially insidious aspect of COLA

clauses arises from the CPI having *fixed weights*. If a worker is protected by an uncapped COLA, there is no need for him to adjust consumption of any item in the market basket, no matter how fast the price of that item increases. Most households do, in fact, cut back on purchases of items that suddenly seem too high. But theoretically, a worker covered by a full COLA would not need to conserve on gasoline, home heating fuel, coffee, or any item for which prices had risen sharply. Where a household does cut its purchases of such items, a full COLA provides additional income that can be used for other purposes.

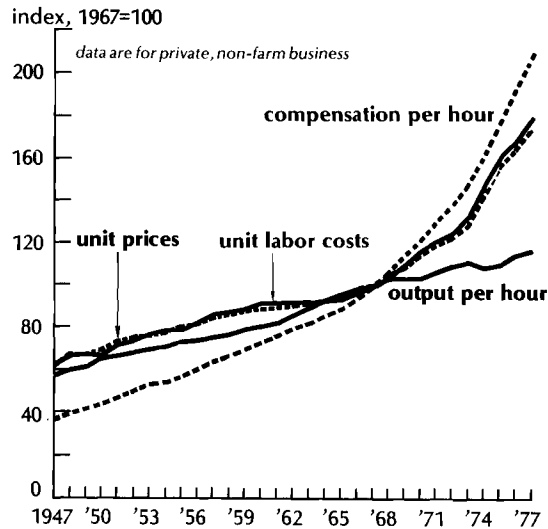
Problems of indexation

Adjustments of wage payments based on movements of the CPI are usually supported on grounds of fairness. It is also sometimes argued that a guarantee that real income will be maintained staves off demands for ever larger specified increases arising from exaggerated expectations of future inflation. But this argument is not borne out by the record.

Labor contracts in recent years typically have called for larger increases in wages than the rise in prices shown by the CPI. Last year, when the CPI averaged 6.5 percent higher than in 1976, the average first-year wage increase in major labor contracts was 7.9 percent. Wage increases in the second and third years under these contracts will depend partly on changes in the CPI. Increases in total compensation in major labor contracts, including pensions and other benefits, averaged 9.5 percent last year. Because wages account for 75 to 80 percent of total compensation, it is clear that non-wage benefits increased faster than wages, and much faster than the CPI. So-called fringe benefits are income by any reasonable definition, even though they are not usually taxed. The coal settlement reached in March was even more generous than the average with an estimated gain in total compensation of 39 percent in three years. That is 12 percent a year compounded.

Average increases in compensation for

Rise in unit labor costs parallels price uptrend



all workers have not been far behind those for workers covered by major contracts. Total hourly compensation for the entire nonfarm private economy, including employer contributions for social insurance, averaged 8.7 percent in 1977.

Half the workers received below average increases in compensation. For many, gains were very small, and some suffered declines. If everybody's income had been indexed, as has been proposed, groups that have lagged would have received increases closer to the average. This would have meant even more upward pressure on prices because most of the increased income would have been spent.

Demand and supply

A widely held view today is that all consumers, employed or not, are entitled to stable or rising real incomes. This view is embodied in arrangements through which income payments are escalated automatically according to changes in the CPI. With raw materials readily available and adequate resources of facilities and workers (including skilled workers) the supply of goods and services can be expanded, within limits, as

money income rises. But broad trends of recent decades place increasingly severe restraints on the economy's ability to increase real per capita income. With supplies limited, increases in compensation fuel further increases in prices.

The nation's total output is measured by the gross national product adjusted for price changes. Real GNP is expected to rise 4 to 4.5 percent in 1978. But not all of real GNP is available for distribution to consumers. Part of the total represents depreciation of the existing stock of capital goods. Another part, rapidly growing, represents outlays mandated by government to improve health and safety, reduce pollution, and rehabilitate depressed areas. These outlays may improve the environment, but they do not directly satisfy consumer wants.

Almost all kinds of raw materials are increasingly hard to come by, which makes them more expensive. The richest mineral deposits, for example, are exhausted. Severe restrictions have been imposed on the development of new sources and, to an extent, on the operation of existing sources. Costs of providing additional energy—whether as natural gas, oil, coal, or electric power—are rising at an alarming rate that has been only partially reflected in consumer prices.

The clearest evidence of the limitations on American affluence shows up in the dependence on foreign oil. Imports supply over 40 percent of the domestic demand. A sharp reduction in oil imports, whether from foreign or domestic policy actions, would require a severe cutback in energy use—and, therefore, real growth.

Restraints on increasing supplies are evident in slower gains in productivity—output per hour per worker. Gains in productivity can offset increases in compensation, and, therefore, hold down increases in costs. If not offset by gains in productivity, increases in labor compensation are translated into higher costs of production and passed on in higher selling prices. Productivity gains have not only slowed in recent years, but have become erratic.

From 1947 to 1966, productivity increased an average of 3.3 percent a year. Since 1966 the average has been less than 2 percent, with declines some years. Preliminary estimates show productivity in the nonfarm private economy rose 2.1 percent last year. With compensation up 8.7 percent, unit labor costs rose about 6.5 percent, as much as the CPI. Prospects are that partly because of the severe winter, productivity will rise less than 2 percent this year.

The reasons for the slowing in productivity gains are complex. Problems in obtaining raw materials, government regulations, and restraints on managerial prerogatives in hiring and firing all play a part. Productivity in underground coal mining has *declined* sharply in recent years.

An increasing proportion of the population receives income commonly escalated by the CPI without contributing to the supply of goods and services. A growing share is also employed by government or in private industries with output difficult to measure in real terms.

In 1950 Social Security rolls numbered 3.5 million. In 1960 the number was still only 15 million. Last year it was 33 million. And by the end of this year, it may be 35 million. Only about half the people receiving Social Security benefits are retirees. The rest were disabled (a rapidly growing class) and welfare recipients of various types.

The number of Social Security recipients now equals 38 percent of the number of people working. That compares with 23 percent in 1960 and 4 percent in 1950. In ten years the ratio will probably exceed 50 percent.

Nonfarm payroll employment averaged 82.1 million in 1977. Of these workers less than 30 percent were in goods-producing industries—manufacturing, mining, and construction. Over 70 percent were in service-producing industries. The goods-services ratio in 1960 was 38:62. In 1950 it was 41:59. In general, productivity has not increased as fast in the service-producing industries as in the goods-producing industries.

Government employment has also grown rapidly, accounting for 19 percent of

payroll employment last year, up from 15 percent in 1960, and 13 percent in 1950. Being intangible, output of government workers is hard to measure. Standards are often less rigorous than in profit-oriented businesses. And government activities, however important, do not satisfy the wants priced in the CPI.

Restraint essential

Indexation of incomes has greatly reduced the number of households living on fixed incomes with living standards that would decline sharply with inflation. But the inability of some groups in the past to follow the income-price spiral tended to dampen price increases. Such groups, moreover, exerted political pressure to hold down increases in the purchasing power of other groups. There are still many people whose incomes do not keep up with inflation, but they are not effectively represented politically.

Indexing has appeal to most people as a means of softening the inequities of inflation. But without countermeasures it helps to perpetuate inflation, introducing new ine-

quities. Indexing incomes can have bizarre consequences. Federal pensions were tied to the CPI in 1969. And noting the lag between increases in prices and pensions, Congress added another 1 percent a year. Such are the effects of compound interest that by the time corrective legislation was enacted in 1976, the CPI was 52 percent higher than in 1969, and federal pensions were up 72 percent!

Other nations have also had problems with indexing. As part of an emergency anti-inflation program in France in 1958, Premier de Gaulle banned a variety of indexing arrangements that had contributed to the inflation spiral.

Americans are generally aware today that nominal income and spending power can be increased indefinitely through fiscal deficits and expanded credit. But they are also becoming aware that the ability to increase goods and services is limited by the availability of raw materials and by physical and mental efforts. Slowing inflation requires that reasonable limitations be placed on income growth while efforts are made to encourage increases in production.

