



INSIDE THE VAULT | SPRING 1999

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Looking at the Shoe-Leather Costs of Inflation

Most people have some concerns about inflation, but if you asked why, responses might be vague. Typical answers include, "because prices go up," or "because my dollar won't buy as much." A period of generally rising prices is a definition of inflation, but why is it bad for the economy?

When economists discuss the costs of inflation, they have specific concerns in mind. One consequence of inflation is that it imposes "shoe-leather" costs on society. Essentially, shoe-leather costs refer to the time and effort people take to minimize the effect of inflation on the eroding purchasing power of money. People wear out their shoes on the way back and forth to the bank, so to speak, trying to protect the value of their assets.

Of course, the idea of wearing out your shoes implies more than literally walking to the bank more frequently than you otherwise would. It suggests that people spend their time and resources to manage their money and other financial assets, i.e. inflation-hedging activities, rather than using those resources to produce goods and services.

Shoe-Leather Costs and Interest Rates

One way of thinking about shoe-leather costs of inflation relates to the interest rate's role in money demand. When inflation and expectations of inflation rise, so does the nominal interest rate.

(The nominal interest rate is composed of the real interest rate and the rate of expected inflation.) As a result of the rise in nominal interest rates, individuals hold less cash in order to keep more of their money in interest-bearing accounts. Holding less cash requires more trips to the bank thus, shoe-leather costs of inflation increase.

Some Extreme Examples

The costs of inflation are readily apparent during extreme episodes of inflation, known as hyperinflation. The most famous episode of hyperinflation occurred in Germany in the 1920s when prices increased 100 times from mid-1922 through mid-1923. By November 1923, the price level was more than one billion times its level in August 1922. Economists use the term "distortionary effects" to describe the impact of such a condition on the economy.

Anecdotes of the distortionary effects of the German hyperinflation include stories that workers were paid two to three times per day, rushing out to spend their pay before their money became worthless. Under these conditions, the banking system expanded and took on crucial importance—especially for those with the resources to beat the devastating effects of inflation by holding foreign currency and precious metals. The number of persons employed by German banks rose from about 100,000 in 1913 to 375,000 in 1923. Similarly, the financial sector in high-inflation Brazil during the early 1990s accounted for 15 percent of GDP (Gross Domestic Product)—much higher than in most countries.

In the United States, the increase in inflation from the 1960s to the early 1980s was also associated with an increase in the relative size of the financial sector. For example, the fraction of the labor force employed in the finance, insurance and real estate (FIRE) sector rose from about 4.6 percent in 1965 to just over 6.7 percent during the mid-1980s. The growth of this measure slowed and turned downward following the disinflation of the 1980s.

Subtle Costs

While the costs of hyperinflation are enormous and obvious, the smaller costs associated with more mild inflation are more subtle and more difficult to measure. Inflation of 10 percent, for example, results in a misallocation of resources (shoe-leather costs) that amounts to somewhere between 1 and 2 percent of GDP. Costs of an inflation rate of 3 percent are about half a percent of GDP—approximately \$40 billion.

In addition, an increase in expected inflation leads people to economize on the money they hold as cash in order to keep it working in financial investments, in some cases taking extremely high risks in the hope of returns on investment that exceed the inflation rate. It is this cost of minimizing money holdings that gives rise to shoe-leather costs. Therefore, one way to measure the costs is to estimate the effects of a given rise in inflation on the demand for money.

The Big Picture

Wearing out your own shoe leather is one thing, but to understand why economists rather than shoe cobblers are concerned, consider the effect on the economy of people's economizing on money balances, i.e. holding less cash. Leisure and work effort both decline to accommodate these inflation-hedging activities, so production also falls, and the economy contracts. In addition, there is a decrease in the stock of productive capital because inflation results in less business investment. For example, corporations are hesitant to borrow to finance new plants and equipment. Thus the effects of inflation often are considered in terms of sacrifices in economic growth.

Conclusion

While more apparent during periods of hyperinflation, shoe-leather costs, representing the time and effort devoted to beating inflation, can nevertheless be costly to the individual and to the economy. Keeping shoe-leather costs down is one underlying rationale of the Federal Reserve's commitment to price stability.

This article was adapted from "Shoe-Leather Costs of Inflation and Policy Credibility," which was written by senior economist Michael R. Pakko and appeared in the November/December 1998 issue of Review, a St. Louis Fed publication.



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Q & A

Will the country's banking system be ready for Y2K?

No one can say there won't be glitches, but the Fed expects the banking industry to be ready for the century rollover. The financial industry has been preparing for Y2K by replacing or renovating computers and undergoing rigorous testing of applications. Many outside experts and Congress consider the financial industry superbly prepared for the Year 2000 conversion.

What kind of testing is being done with financial institutions?

The Fed is doing two things—testing its own systems and requiring some 10,000 financial institutions to test their critical payments interconnections with the Fed. To date, more than 95 percent of the Fed's internal systems and 98 percent of its mission-critical systems have been renovated or replaced and are Y2K compliant. These systems are now in daily use. Additionally, as of March 31, 1999, more than 7,000 financial institutions had tested their systems with the Federal Reserve.

How else is the Fed preparing for Y2K?

The Fed, along with other banking regulators, is conducting examinations focused specifically on the Y2K readiness of financial institutions. Through March 31, 1999, these institutions have been examined twice, and the overwhelming majority have been found to be making satisfactory progress. Of the 1,500 institutions supervised by the Fed, our reviews have found 95 percent to be making satisfactory progress in their Y2K programs. Those institutions that have not made satisfactory progress are under an intensive monitoring program until they make satisfactory progress.

Should I take any precautions to prepare for Y2K?

The Federal Reserve does not see any reason for the public to hold a lot of cash in the early days of 2000. Although there may be isolated glitches, we expect the usual payments options, such as ATMs, credit cards, checks, debit cards, etc., to work. Additionally, FDIC insurance, which covers deposits up to \$100,000, will not be affected by Y2K.

For more information on Y2K readiness, visit the Federal Reserve Board of Governors web site (www.federalreserve.gov), or call the toll-free consumer Y2K information line at 1-(888)-USA-4Y2K.



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Economic Snapshot

1st Quarter 1999

	Q2-98	Q3-98	Q4-98	Q1-99
Growth Rate—Real Gross Domestic Product	1.8%	3.7%	6.0%	4.5%*
Inflation Rate—Consumer Price Index	1.8%	1.6%	1.7%	1.5%
Civilian Unemployment Rate	4.4%	4.5%	4.4%	4.3%

*Advance estimate



SOURCE: Report on Economic Activity (Board Report), April 1999, Page 9.

What is the CPI?

The Consumer Price Index (CPI) is a measure of the average change over time in price paid by urban consumers for a fixed market basket of consumer goods and services. The CPI provides a way for consumers to compare what the market basket of goods and services costs this month with what the same market basket cost a month or a year ago.

Prices for the goods and services used to calculate the index are collected in 85 urban areas throughout the country and from about 21,000 retail and service establishments—supermarkets, department stores, gasoline stations, hospitals, etc. The CPI does not include investment items, such as stocks, bonds, real estate and life insurance, since these relate to savings and not day-to-day living expenses.

Why was the CPI created?

The Consumer Price Index began during World War I when rapid increases in prices, especially shipbuilding, made such an index essential for calculating cost-of-living adjustments in wages. Between 1917-19, studies of family expenditures were conducted in 92 industrial centers. Periodic collection of prices was started, and, in 1919, the Bureau of Labor Statistics (BLS) began publishing separate indexes for 32 cities. In 1921, the BLS began publishing a national index with indexes estimated back to 1913. Since its inception, the CPI has undergone numerous revisions, including geographic areas, items selected for pricing and establishments in which items are priced, to reflect changes in people's buying habits.