price has fallen in real terms. Another was how to treat the cost of shelter, which can be viewed as an investment as well as a living expense.

"It isn't that people way back then didn't understand what the issues were," Triplett said. "It's just that these were things that were hard to resolve. People knew that the quality change problem was serious; they just didn't know what to do about it."

A panel of experts chaired by University of Chicago economist George Stigler exhorted the BLS to research potential solutions to these problems, including using the rental equivalence method (estimating market rents for owner-occupied homes) to measure changes in shelter expenses and sampling items more frequently to reflect purchases of new or improved products.

The Stigler Commission's recommendations were barely noticed by the public, but they prompted intensive research on price indexes that over time greatly improved the CPI and other price indexes.

Just WIN, baby

Taking the measure of inflation took on fresh urgency in the late 1960s and 1970s, when inflation threatened to spiral out of control. Energy prices soared, contributing to annual inflation rates above 4 percent in the early 1970s. "Stagflation"—high inflation coupled with slow economic growth—gripped the nation, spurring the Nixon administration to impose price controls and President Gerald Ford to launch Whip Inflation Now (WIN), a much-lampooned initiative to foster energy conservation and cut consumer spending.

Fighting inflation was job one for policymakers, who sought more precise intelligence on price movements and their interplay with economic output and employment. The BLS and other agencies broadened the scope of their price indexes and developed new ones to obtain a closer reading of inflationary trends and their impact on consumers.

In 1978, the BLS split the CPI into two measures, each representing the buying habits of distinct populations. A new CPI for all urban consumers (CPI-U) expanded the index's geographic reach beyond large cities to smaller urban areas and added previously excluded groups of consumers such as salaried employees, part-time workers, the unem-

I say CPI, you say PCE

One measure of inflation is the popular one, the index that hogs the limelight in the media and around the water cooler, especially when prices are rising. The other gauge of price change is the shy one, the little-known measure that gets attention only from policy wonks and macroeconomists.

Both the Consumer Price Index for all Urban Consumers (CPI-U) and the Personal Consumption Expenditure Index (PCE) track changes in prices paid by consumers for goods and services. Both measures—the first published by the U.S. Bureau of Labor Statistics (BLS), the second by the Bureau of Economic Analysis—have "core" versions that exclude food and energy prices to help inflation watchdogs such as the Federal Reserve anticipate future movements in the headline, or overall, index.

Yet, like lenses in a pair of binoculars that view objects from divergent angles, the indexes show slightly different inflation rates. Although they usually move in parallel when prices rise or fall, the PCE has historically traced a lower path than the CPI. However, since the 2000s, the average gap between the two measures has narrowed.

These alternative measures of consumer inflation reflect fundamental differences in the way the two indexes are constructed. Each has its own underlying concept, data sources and formula for calculating price changes.

The CPI takes an in-the-trenches approach to measuring inflation, tracking the change in

price of a market basket of goods purchased by all urban households. The BLS collects prices from more than 25,000 retail and service outlets in 87 urban areas across the country to create the national CPI. In contrast, the PCE measures price changes for goods and services within the framework of the National Income and Product Accounts, a comprehensive set of figures for the total value of output and income in the U.S. economy.

Because of these different approaches, the PCE measures a broader swath of personal consumption than the CPI. For instance, the PCE captures expenditures by rural as well as urban consumers and includes spending by nonprofit institutions that serve households. And while the CPI records only out-of-pocket spending on health care by consumers, the PCE also tracks personal medical expenses paid by employers and federal programs such as Medicare. However, over 70 percent of the price data in the PCE is drawn from the CPI.

Weight for it

The weights (relative consumer expenditures) assigned to prices are crucial, and the CPI and the PCE derive their weights from different sources. The CPI reflects reported consumption in the Consumer Expenditure Survey, conducted for the BLS by the U.S. Census Bureau. To determine its expenditure shares, the PCE relies on business surveys such as the Census Bureau's annual and monthly retail trade surveys. Shelter accounts for the biggest difference in weighting between the two indexes; the share of personal spending devoted to housing is larger in the CPI because nonshelter expenditures in the CES are less than those estimated from business surveys.

Another key distinction between the indexes is the mathematical formula used to aggregate myriad prices and sub-indexes into a measure of overall inflation. The CPI's "fixed-weight" formula calculates price changes from a base period whose expenditure weights are updated roughly every two years. The PCE uses a formula (developed by U.S. economist Irving Fisher in the early 20th century) that takes the average of two fixed-weight measures of price change—one based on weights in the current period and the other based on weights in the preceding period.

An important benefit of the PCE's formula is that it automatically adjusts for consumer substitution among general categories of goods (such as from grapes to apples) as relative prices change. Studies have shown that this "formula effect" accounts for almost half of the gap between the CPI and PCE inflation rates.

Other, minor differences between the indexes include alternative ways of adjusting for seasonality and figuring changes in airfares and gasoline prices.

The Federal Reserve and many economists hew to the PCE as an inflation measure. The Fed switched from the CPI to the PCE in 2000. In addition to the PCE's broad scope and index formula, the Board of Governors has said that it prefers the measure's historical consistency, valuable for research. Unlike CPI figures—which once published cannot be changed because they are written into contracts—previously released PCE data are continuously revised to reflect updated information and refinements in measurement techniques.

—Phil Davies