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Commentary

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The article by Shapiro and Wilcox is a good example of how data limitations can be overcome by hard work and ingenuity. Consumer expenditure data are not available soon enough to construct a real-time price index that compensates correctly for the (across-strata) substitution bias. The authors have shown how these untimely data can be used nevertheless to accomplish two important goals: The first is to estimate the extent of the substitution bias in the official consumer price index (CPI), which they put at 0.3 percentage points per year. The second is to construct a chained price index implementable in real time by using the most recently available expenditure data each year. That would eliminate 80 to 90 percent of the estimated bias.

The article presents these results with admirable brevity and clarity; I found little to quibble with. I would just like to put the subject into a broader perspective. Since I am primarily a macroeconomist, and since this conference is being hosted by a central bank, my comments will raise questions as to the macroeconomic significance of the results and their relevance for monetary policy.

SIZE

From the point of view of monetary policy, three-tenths of a percentage point is small potatoes. Although I know people in Canada who are ready to go to the wall over whether the Bank of Canada should lower the mid point of its target-inflation range by half a percentage point, arguments of this sort are hard to take seriously because macroeconomics is too inexact a science to shed light on such a

small difference. The differences Shapiro and Wilcox are talking about here are even smaller.

The differences are also small in relation to the normal range of variation in inflation rates. For example, the variation across cities in year-to-year CPI inflation rates is typically an order of magnitude greater than three-tenths of a point. So is the annual variation in the overall CPI inflation rate over the past quarter of a century.

This range is small not just in terms of other dimensions of variability, but also in terms of its likely impact on the macroeconomy. All economists agree that hyperinflations are enormously costly. Fewer agree that reducing inflation below three percent will bring about significant gains. Does anyone think that reducing it by three-tenths of a percentage point will have a significantly beneficial effect? According to the estimates of Barro (1996), for example, the effect (over the first decade) on the rate of economic growth would be less than one one-hundredth of a percentage point per annum.

If the macroeconomic significance of the substitution bias is so small, why fuss about it? The main reason that the issue is discussed at all in policy debates is that various people see revision of the CPI as a way to implement social policy, to reduce the burden of entitlement programs that are indexed to the CPI. Reducing CPI inflation by even a quarter of a percentage point per year could make quite a difference to the cost of these programs if cumulated over decades. But surely social policy should be set by Congress, not by unelected statisticians. If politicians were more willing to face their responsibilities, the question of substitution bias would take on its proper significance in public debate, namely that of a minor technical adjustment to a highly imperfect price index.

LOW-HANGING FRUIT

Even if the proposed adjustment to the CPI is quantitatively minor, Shapiro and Wilcox argue that it might still be worth making because the numbers are there, and because the theoretical principles are well understood. On the first point, I agree. Why use out-of-date expenditure data when the most recent data can be used? On the second point, I have several doubts.

To begin with, I would question the claim that our theoretical understanding of cost-of-living indexes is well in hand. Many, if not most, consumer purchases are made on the basis of habit, by people with diverse preferences who couldn't form a consistent ranking of alternatives if you paid them to produce one, who don't know the prices or even the nature of more than a small fraction of the goods and services they could buy, and who alter their purchases from time to time in response to advertising, word of mouth, random search and pure whim. This is far from the orderly, rational world portrayed by index-number theory. While there is some reason to think that, under ideal circumstances, the fumbling adjustments of actual consumers may end up as choices roughly approximating those predicted by index-number theory, I doubt if any evidence can be provided to indicate that the approximation is accurate to within three-tenths of one percent.

Even if the theory of the cost of living were perfectly understood, it is not necessarily the cost of living that you want to measure with a price index. It depends on the purpose for which you're using the index. If it's just for making inflation-adjustments to contracts, then perhaps that's what you want, although the fact that private cost-of-living allowance (COLA) clauses typically include all sorts of limits, kneecaps, and other departures from strict proportionality suggests that there are lots of other relevant considerations. (It also suggests that well-understood imperfections in the index can be remedied without having to reconstruct the index!)

But if your interest in the CPI is as a target or indicator of monetary policy, which it obviously is in the United States and in much of the rest of the industrialized world today, then what you want is probably not a measure of the cost of living. Instead, central banks should be targeting an index whose rate of increase corresponds to the inflation that generates the costs they are seeking to avoid by focusing on an inflation-control objective.

Of course in practice central banks that have embraced inflation targeting have almost all chosen the CPI as their target index. But that's because in most countries the CPI is familiar, published frequently with a short lag, and never revised. Its use thus contributes to the transparency and accountability of monetary policy.

Why do central banks aim for a low average rate of inflation? Surely it is not because a steady and predictable rise in the cost of living at, say, 10 percent per annum would be so difficult to offset with COLAs. Instead it is because the process of inflation involves a lot of coordination problems and undermines the use of money as a unit of account and standard of deferred payment. Some of these costly effects of inflation may be measured well by a cost-of-living index, but most of them call for a much broader measure of the cost of market transactions.

For example, one reason inflation is costly is that the price changes for different goods are not synchronized. Instead, individual prices tend to jump occasionally—in response to significant perceived changes in fundamental conditions of demand and supply, and to jumps in other prices. The problem of coordinating the price-adjustments at the heart of a market economy are clearly exacerbated when the process is continually being disturbed by the pressures of overall inflation. Although we do not have a well-worked-out theory of these coordination problems, the extent to which they are worsened by inflation would surely be better represented by the rate of change in a broad index of transaction prices than by a narrow index of the cost of living.

As another example, consider the cost of the noise that inflation adds to our accounting system, which is ultimately premised on the fiction that money is a stable measure of value. Various writers (e.g., Feldstein 1996) have tended to focus on the costs that work through a non-indexed tax system, as if only the government had difficulty filtering the inflation-induced noise out of conventional accounts. But, in truth, everyone has trouble interpreting accounting data that are based on an inaccurate measure of value. Inflation causes profits to be understated sometimes and overstated at other times. The overall quantitative effect on a particular firm's profit depends upon detailed characteristics of the firm, details that accounting data are supposed to *summarize*, not to require for their own interpretation.

Thus when investors place their bets in the capital market, they have no way to separate the real from the inflation-induced component of a firm's profit. There wouldn't be a way even if the rate of inflation were perfectly foreseen. As a consequence, the higher the inflation, the more ill-informed will be the allocation of capital, the greater will be the encouragement to invest on the basis of short-term forecasts of market sentiment rather than long-term forecasts of poorly observed profits, and the greater will be the inducement to avoid the risky investments that are needed to support long-term growth. These costs have little to do with the fact that the cost of living is rising. Instead, they arise mostly from the discrepancy between historical and replacement costs of producer durables.¹

In short, while I concur with the call for more and better data to make the CPI a better price index, I would add a call for more and better theory. To construct a better price index for use in monetary policy, moreover, the theory we need is not a microeconomic theory of the cost of living, but a macroeconomic theory of the cost of inflation.

REFERENCES

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¹ For elaboration on this and other costs of inflation, see Howitt (1997).