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Commentary

Zvi Griliches

What is the question? It seems to me *that is the question*. I am here under false pretenses, in a sense. When I agreed to speak, the Commission was supposed to have reported on August 1, and I was going to discuss or defend whatever the Commission said in its report, which has now been postponed until December.¹ Everything is therefore in flux, and I cannot really do what was requested of me. So, I am going to make the same comments I have been making all along. They are my prejudices and they may or may not have an impact on the Commission's report.

Why has the measurement of changes in consumption (and output) prices suddenly become a popular topic? We were a small band, wandering in the wilderness—nobody was listening to us. And now, the measurement issue is attracting attention. Historians of economic thought and economic policy, and Jack Triplett and Erwin Diewert, have their jobs cut out for them, so I will skip that.

The big difference recently has been that the Chairman of the Board of Governors and many politicians have become interested in price measurement, and suddenly it has become a hot political issue. If you can do something “to the CPI,” then you can do something to the growth of entitlements and growth in taxes. Some estimates project that this “something” would amount to about a \$140 billion difference by the year 2005. And, as the late Senator Dirksen used to say, “A billion here, a billion there and soon you are talking about real money.” So the measurement issue is of some importance.

In an interim report, the Commission said that the consumer price index (CPI) may be biased by about as much as 1.5

percent per year. About 0.5 percent of that is likely to be eliminated in the near future, but other biases will remain, arising primarily from the fixed-basket nature of the index and the incomplete accounting for new goods and services and their qualities. These estimates were based on the best of what the Commission knew at the time or what it thought it knew. We have been trying to improve upon them; but all such estimates are based on a limited number of studies, some of which are quite old. In the intervening six months the stock of knowledge on this topic has not changed much, at least on some of the more difficult points. Matt Shapiro and David Wilcox reviewed our “back of the envelope” calculations and reported a number a half-percent lower than ours, but with a range of uncertainty which leaves *our* number roughly within *their* confidence interval.

THE PROBLEMS

I will first discuss the quality problem briefly. I will then say a few words about the larger problems with the CPI, problems that are not going to be fixed in the next revision, and about which the Commission is unlikely to produce clear suggestions in the short term. Quality change and new goods present two generic problems, one I would call “too late” and the other “too particular.”

Too Late

A new good that does not fit an existing stratum definition will not appear in the index—at least until the next full ten-year revision. Therefore, neither the personal computer (PC) nor the video cassette recorder was in the CPI before 1987, even though each came to the market in serious numbers about a decade earlier and experienced enormous price declines in the interim.

¹ The “Commission” is the Advisory Commission to Study the Consumer Price Index. It was chaired by Michael J. Boskin, hence is often referred to as the Boskin Commission. Its other members included Ellen R. Dulberger, Robert J. Gordon, Dale Jorgenson and myself. The report was delivered to the Senate Finance Committee on December 4, about 7 weeks after this conference was held.

Moreover, once included in the CPI, a chosen model is not changed until it is rotated out (on average after five years in the sample) or until it disappears and has to be replaced. If old items had the same price history as new ones, this would not matter. But many durable goods, and some service providers whose market share is declining, do not reduce their prices. Rather, they exit. As a result, observed price history is not representative of a more inclusive average price history. Also, the current rotation policy will miss a whole generation of items whose turnover is rapid, such as computer models, and will underweight those models that it will catch, since those models will not get full weight until they are at least five years old. But the big problem is that the new models are rarely compared with the old: Because the CPI does not use hedonics for PCs, it has no way to evaluate and incorporate the implicit price decline due to the appearance, successively, of the 386, 486, and Pentium models. All that is linked out because, by the time they have entered the index, old models do not decline much more; they disappear. This is a problem not just for high-tech items, such as cellular phones and satellite dishes, but also for the treatment of Chilean grapes and raspberries in January, the impact of WalMart and of new bakeries, and the availability of new sources and types of fish made possible by the decline in real transport costs and trade barriers.

Too Particular

Until this year, the “too particular” objection applied to the treatment of generic drugs, which were considered entirely new commodities. Neither the CPI nor the producer price index (PPI) reflected the large price declines consumers experienced as they switched to these less expensive and—as certified by the Food and Drug Administration—functionally equivalent alternatives.

Measuring prices is very difficult. The main problem with services (which can-

not be solved within the current framework of data collection) is that, in many cases, the consumer participates directly in their production (for example, spending his or her own time on traveling, standing in line at the bank or supermarket check-out counter, or waiting for an operation and then recovering from it). The full price of consuming a commodity or service includes also the value of time required to acquire and enjoy it in addition to its purchase price. Without more data on consumer time expenditures, I believe we cannot progress toward solving the price measurement problem in the services sector.

I will not spend much time on measurement of health services prices. Shapiro and Wilcox (1996) present an example on cataract surgery, Cutler and McClellan (1996) study heart attacks. They make it reasonably clear that most of the increase in the price index of health care has resulted from the fact that more procedures are being done, rather than from an increase in the per unit price of these procedures.

It is difficult to argue that we face new issues or that the measurement problems have gotten worse. The appearance of the automobile, the jet engine, or the supermarket must have raised measurement problems of a similar order of magnitude. I am not necessarily convinced that the bias today is larger than it was in the past. On the other hand, Diewert (1996) has produced statistics on the rise in the number of products available in the market. The number of universal price codes grew from 950,000 in the beginning of 1990 to 1,650,000 by September 1995 for some subset of the market. Also, the turnover of goods has increased. When I started doing hedonic regressions on computer prices, models lasted for three to four years in the market; in my most recent attempt, half the models were disappearing within one year. Therefore, if you are rotating your sample once every five years, much of the history will be history before you have gotten around to it.

In addition, neither the standard CPI procedures (even if accelerated) or hedonic regression methods can fully reflect the gains from the extension in the range of choices experienced by consumers and the appearance of entirely new goods and services. This fact has been recognized and explored in recent studies by Feenstra (1992), Hausman (1997), and Trajtenberg (1990), each of whom tries in his own way to estimate the consumer surplus generated by the entry of entirely new commodities. Take Chuck Hulten's example of these new tennis balls being sold at \$1.20 (relative to \$1.00 for the previous ones).² It is not complete until we realize that at \$1.20 the new tennis balls are pushing the old tennis balls off the court and commanding more than 60 percent of the market. In some real sense, there was a decline in price that is not being captured by his calculation. I believe that many such things are happening and that they are important. But it is unreasonable to expect the Bureau of Labor Statistics (BLS) to produce credible adjustments for entirely new commodities in real time.

I have been looking for counterbalancing issues, for some "bads," and for things that have deteriorated. Well-documented examples are difficult to find. No good case histories exist, though some must have occurred. It is difficult to find credible estimates for declining qualities and disappearing products. Most of the goods that have disappeared do not seem to have been lamented very much, and some of them, such as 33 rpm records, are still being made at a much higher price. Although the perception of crime has clearly risen, victimization surveys are ambiguous about whether the number of actual incidents has increased significantly. The only thing clear to me is that many consumers are experiencing the recent attempts of health maintenance organizations to control escalating health costs, admirable as they might be on their own merits, as a deterioration in the expected quality of the service. I will not discuss here what is to be done. Perhaps the Commission will address this.

ADDITIONAL CONCERNS

One of the deep problems with the CPI, as with any such construction, is that it is based on the representative-consumer paradigm. But, in fact, when you look closely at most issues, you see tremendous heterogeneity. Different people buy different commodities at different times. Quality is rarely a sharply defined concept to which we can attribute a fixed valuation. Different people will value a particular new product differently, and this value will change through time as knowledge spreads, complementary inputs are developed, and its use spreads to lower-value activities. So, to do something reasonable, we need a complete history of the new good. We really want to get the area under the demand curve for it, as its consumption spreads, not just its valuation at a particular point.

Retired Elderly

Recent discussions have singled out the retired elderly for special attention. Of course, most of us will become members of this group—some sooner than others. As of the moment, I believe the biases we have discussed apply to the retired elderly also. To say it differently, I doubt that their true CPI has risen faster. If anything, it is likely to have gone in the opposite direction. The elderly benefit from two flaws in the current CPI—one of concept and the other of measurement. Concept refers to treatment of home ownership as rent-equivalent in the CPI. That is a useful approximation, but it does not go further and include the resulting capital gains in the definition of the income to be indexed. In other words, homeowners are hedged against housing price inflation, and there is no reason to compensate them for such price rises. The other main component of their consumption, higher rates of medical care expenditures, is the area of quality change where new goods and services have become prevalent. Almost no adjustment for this has been made in official indexes.

² See Hulten's article in this issue, pp. 83-96.

Nevertheless, I believe the elderly may have a case, but it is outside the conceptual framework of the current index. There is a difference between the price index of living and the cost of living. The former is an index for an average, unaging, unchanging individual living in a world in which nothing changes except prices. But people age, and they, and the environments they live in, also change. If the prices of the items I buy do not change from year to year, the price index is flat. But, on the other hand, as I age, I may have to consume a different assortment of resources to remain on the same indifference curve, and my cost of living may rise. In fact, it *is* going to rise and I will not be able to stay on this same indifference curve, ultimately. At some point the transversality condition will take over.

Also, when the winter is colder, or we are plagued by an epidemic of a new disease, the cost of living, the cost of staying on the same level of satisfaction, will have risen, though the price index may not. Thus the elderly are not making an empty, misleading statement when they say their cost of living has risen with the appearance of all of the new medical inventions that allow them to be better off and live longer. The rise of such technologies may also pauperize some of them in the process. They do indeed have the option to decline the bypass surgery, to decline a hip operation—procedures that were unavailable in the past. And we do not have to compensate them just because the medical industry has progressed technologically. But, even though the present value of their lifetime utility is higher, their net remaining income per year of unanticipated extension of life (given the assets they have accumulated and given the pension decisions they had made *ex ante*) may now be lower. The CPI is but one concept, and the “full” cost of living may not be measured adequately by it. If one understands this distinction, it can be dealt with by including in the definition of the expenditure function such items as environment, age, and other factors that

are to be kept constant in making such comparisons. It is only the “pure” price component of such an expenditure function that is relevant for the (average) CPI calculation, though the other terms may affect how we want to set pension levels and other entitlement policies.

Using the Correct Index

It is not obvious that the CPI is correct for indexing purposes, any more than that it is right for monetary policy, as we have discussed already. In a free market, people making private contracts can index to anything. They can index to CPI minus 1 percent. We are always exposed to some basis risk when making this kind of contract because the price index relevant to us may not move in proportion to the price index on which we are making the contract. But when we as a society decide to index a certain stream of payments, we need to be clear as to why and how we are doing it. The simplest rationale is to compensate for monetary inflation where those on nominal contracts may be losing and while others in the society are gaining. This is a redistribution argument in which we, who are receiving flexible wages, tax ourselves to compensate those with pensions that have been fixed in nominal terms. The point I am making is that, in such a context, there are gainers who have something to give up to the losers.

But many changes in the CPI are not of this form. Consider an OPEC-induced rise in energy prices. This is an external tax imposed on our economy. We are all poorer for it. There is no way all of us can be compensated for it. Moreover, it is unclear that one group, say the elderly, is more deserving and should be fully compensated for it. Such a position would imply that for the rest of the population real consumption should fall even further. Why shouldn't the burden of such changes be shared somehow? Compensation arrangements should be based on a price index of the domestic value-added components of the various consumption goods—or perhaps on something like the median wage.

Entitlements

This discussion about the CPI has arisen in the context of dealing with entitlements and is focused on the issue of controlling the rate of growth of entitlements without asking the much more difficult, but much more relevant, question: What is the correct level of such entitlements? It seems kind of backwards to say we are going to reduce the rate of growth of transfers to, for example, a person with paraplegia by 1 percent per year without asking whether the actual support level is the correct level for him. There is a cowardice in our political system that is very depressing. The real question is: What is the right level of transfers? The rate of escalation may have a first-order impact on the budget; but it is second-order relative to the real issues involved.

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