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Statement by

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Board of Governors of the Federal Reserve System

before the

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Mr. Chairman and members of the Committee, I appreciate the opportunity to appear before you today. The Committee is faced with a number of complex policy issues that will have an important bearing on the fiscal health of the nation and the welfare of our people well into the next century. I will be happy to respond to questions relating to any of those issues, but in my formal comments this morning I intend to focus on the accuracy of the consumer price index.

I would like to begin by commending this Committee for having done so much to bring the issue of possible bias in the CPI to the attention of the Congress and of the nation in general. The hearings conducted by this Committee in 1995, as well as the report produced by the advisory commission that was sponsored by this Committee, have advanced the discussion considerably. These efforts, along with the continuing contributions of the Bureau of Labor Statistics' research staff, have added importantly to our understanding of the sources of measurement error in the CPI.

Any index that endeavors to measure the cost of living should aim to be <u>unbiased</u>. That is, a serious examination of all available evidence should yield the conclusion that there is just as great a chance that the index <u>under</u>states the rate of growth of the target concept as there is that it <u>over</u>states the truth. The present-day consumer price index does not meet this standard. In fact, the best available evidence suggests that there is virtually no chance that the CPI as currently published understates the rate of growth of the appropriate concept. In other words, there is almost a 100 percent probability that we are overcompensating the average social security recipient for increases in the cost of living, and almost a 100 percent probability that we are causing the inflation-adjusted burden of the income tax system to decline more rapidly than I presume the Congress intends.

A major reason for this is that consumers respond to changes in relative prices by changing the composition of their actual marketbasket. At present, however, the marketbasket used in constructing the CPI changes only once every decade or so. Moreover, new goods and services deliver value to consumers even at the relatively elevated prices that often prevail early in their life cycles; currently, that value is not reflected in the CPI.

For that and other reasons outlined in the Boskin Commission report and other studies, we know with near certainty that the current CPI is off. We do not know precisely by how much, however. There is, nonetheless, a very high probability that the upward bias ranges between ½ percentage point per year and 1-1/2 percentage points per year. Although this range happens to coincide with the one I gave two years ago, it does reflect both the improvements in the index that the BLS has implemented since then and the emergence of evidence suggesting that the initial problem was of a slightly greater dimension than had previously been estimated. This estimate is consistent with a number of microstatistical studies as well as an independently derived macroevaluation by staff at the Federal Reserve Board, which I will discuss shortly.

In judging these evaluations, it is incumbent upon us to resist the evident strong inclination to believe that precision is the equivalent of accuracy in price bias estimation. If we cannot find a precise estimate for a certain bias, we should not implicitly choose zero as though that was a more scientifically supportable estimate.

There is no sharp dividing line between a pristine estimate of a price and one that is not. All of the estimates in the CPI are approximations, in some cases very rough approximations. Further, even very rough approximations can give us a far better judgment of the cost of living, than holding to a false precision of accuracy. We would be far better served following the wise admonition of John Maynard Keynes that "it is better to be roughly right than precisely wrong."

Estimates of the magnitude of the bias in our price measures are available from a number of sources. Most have been developed from detailed examinations of the microstatistical evidence. However, recent work by staff economists at the Federal Reserve Board has added strong corroborating evidence of price mismeasurement using a macroeconomic approach that is essentially independent of the exercises performed by other researchers, including those on the Boskin Commission. In particular, employing the statistical system from which the Commerce Department estimates the national income and product accounts, the research finds that measured real output and productivity in the service sector are implausibly weak, given that the return to owners of businesses in that sector apparently has been well-maintained. Taken at face value, the published data indicate that the level of output per hour in a number of service-producing industries has been falling for more than two decades. In other words, the data imply that firms in these industries have been becoming less and less efficient for more than twenty years.

These circumstances simply are not credible. On the reasonable assumption that nominal output and hours worked and paid of the various industries are accurately measured, faulty price statistics are almost surely the likely cause of the implausible productivity trends. The source of a very large segment of these prices is the CPI.

For this exercise, the study used the GDP chain-weight price measures. Although these price measures are based on many of the same individual price indexes included in the CPI, they do not suffer from upper-level substitution bias. Hence, the price mismeasurement revealed by this data system largely reflects shortcomings in quality adjustment and in the treatment of new goods and services. If, instead of declining, productivity in these selected service industries was flat, to up a modest one percentage point per year, the implicit aggregate price bias associated with these service industries alone would be on the order of ½ percentage point or so per annum in recent years--very similar in magnitude to the Boskin Commission estimate of total quality adjustment and new products bias.

To be sure, it is theoretically possible that some of the measured productivity declines in these service industries merely reflect mispricing of intermediate transfers among various industries. Such an occurrence would cause an understatement of productivity in some sectors, but a corresponding overstatement in others. But the available evidence suggests that for these particular service industries this theoretical possibility is not of a sufficiently large empirical magnitude to overturn the basic conclusion that there are serious measurement problems in our price statistics. Moreover, the study did not attempt to evaluate possible quality and new products bias in other industries.

Some observers who are skeptical that the bias in the CPI could be very large have noted that the evidence on the magnitude of unmeasured quality change and the importance of new items bias is incomplete and inconclusive. Without a doubt, quality change and new items are among the most difficult of the problems currently confronting the BLS. But since I raised this issue two years ago in my testimony before this committee, a number of studies have documented significant new examples of cases in which the current treatment in the CPI results in an overstatement of the rate of growth of the cost of living.

There doubtless are certain components of the CPI that are biased downward because quality change is handled inappropriately. One instance in which there may well be a problem in this regard pertains to new vehicles, where it may be more appropriate to treat pollution control and mandatory safety equipment, at least in part, as raising price to a consumer rather than improving quality, as is the present practice. But the potential downward bias introduced by current methodology for such equipment can only be slight. We should be prepared to embrace credible new research on quality adjustment, regardless of whether that research points to additional sources of upward bias or previously undetected instances of downward bias. Nonetheless, currently available evidence very strongly supports the view that, on balance, the bias is decidedly toward failing to appropriately capture quality improvements in our price indexes. There is little reason to believe that this conclusion will change unless we alter our procedures.

A more difficult quality related issue is whether to reflect changes in broad environmental and social conditions in price measures that are used for indexing various components of federal outlays and receipts. That is, should the CPI reflect the influence of factors such as the level of crime, air and water quality, and the emergence of new diseases, which are not specifically related to products that consumers purchase? There is little in the record to suggest that, when it enacted the indexation of social security benefits in 1972, the Congress intended for the beneficiaries of that program to be compensated for changes in such environmental and social factors. Nor do these issues appear to have been raised when Congress debated the indexation of various tax parameters during the 1980s. Taking account of such conditions, particularly those that lie outside of the markets for goods and services, would be an interesting exercise in its own right, but would appear to extend well beyond the original intent of the Congress.

A considerable professional consensus already exists for at least two actions that would almost surely bring the CPI into closer alignment with a true cost-of-living index. First, we should move away from the concept of a fixed marketbasket at the upper level of aggregation, and move toward an aggregation formula that takes into account the tendency of consumers to alter the composition of their purchases in response to changes in relative prices. The BLS already calculates such an index on an experimental basis with a lag of about a year. If the Bureau adopts the Boskin Commission's recommendation that it publish a "best practice" version of the CPI with a lag of a year, it should, without question, build that index on the foundation of a variable marketbasket.

There is a somewhat more difficult issue as to whether the concept of a variable marketbasket can be applied in "real time," that is, with the same degree of timeliness that characterizes the current CPI. It is not possible to implement the textbook versions of any of the so-called "superlative" index formulas in real time, because those formulas require contemporaneous data on expenditures, and those data are not presently available until about a year after the fact. However, this hardly forecloses the possibility of implementing an <u>approximation</u> to a superlative formula, and work should continue on the development of such an approximation.

A second area that will require attention is the aggregation of prices at the most detailed level of the index. This is a highly technical area, and an important example of how research by the staff at the BLS has advanced our knowledge. Without going into the details of the matter, it is sufficient to say that a selective move away from the current aggregation formula is warranted, and would probably make a modest further contribution to bringing the index more in line with the concept of a cost-of-living index.

Beyond these rather limited steps, most of the needed developments will require time, effort, and quite possibly additional resources. It is important that the Congress provide the Bureau with sufficient resources to pursue the agenda vigorously. These are difficult problems, and cannot be solved tomorrow or next week. But with adequate support and diligent effort, the pace of improvement should quicken. Moreover, an accelerated pace of BLS activity, and heightened congressional interest should galvanize analysts outside the government to contribute to the research effort.

Where will this longer-term effort be required? One of the key areas, by all accounts, is quality adjustment. As the Bureau has rightly noted, they do indeed already employ a variety of methods to control for quality change, but available evidence suggests that these are not sufficient to the task. Unfortunately, making improvements on this front will be difficult: Each item will have to be considered on its own, and there may well be limited transfer of knowledge from one item to the next.

Another key area on the longer-term agenda will be the estimation of the value of new products to consumers. Significant innovations, such as the personal computer, the cellular telephone, and the heart bypass operation create value for consumers, even at their typically high initial prices; moreover, this value is even greater at the much lower prices that often prevail when new products are, in fact, introduced into the CPI. A true cost-of-living index would reflect this value and its implication for the true rate of growth of the cost of living. The CPI does not reflect it, and accordingly fails to capture a significant offset to price rises in other products. Deriving an estimate of this value and building it into the CPI will not be an easy undertaking. But conceptually, it is unquestionably the right direction to be heading, and some recent research suggests that it could measurably affect the index.

Over time, we will need to investigate alternative sources of data. Already, there is interesting work being done to develop techniques for processing data collected from bar-code scanners at the check-out counter. Scanner data will allow the BLS to track not just a small sample of products, but virtually the entire universe of products in selected lines of business and, perhaps most importantly, virtually the universe of transactions, regardless of whether those transactions happen on a weekday, at night, or on a holiday.

We should also move to improve our understanding of the value that consumers place on their own time. Absent such knowledge, it will be impossible for the BLS to estimate the value of many goods and services that mainly serve to enhance convenience and save time.

Finally, we will have to attempt to build an understanding of why consumers shop at the places they do: What characteristics of an outlet are important, and how much so? Location, hours of operation, inventory, and quality of service all are likely influences on the value that consumers place on their shopping experience, and all will be important in helping the BLS to develop a more sophisticated statistical method for dealing with the appearance of new consumer outlets, including those that operate over the Internet.

Even if the BLS moves aggressively, some upward bias will almost surely remain in the CPI, at least for the next several years. Two years ago, in testimony before this committee, I suggested that a workable structure for dealing with this situation might involve a two-track approach. That suggestion still seems to me to make sense. The first track would involve action by the BLS to address those aspects of the bias that can be dealt with in relatively short order, say within the next year. The second track would involve the establishment of an independent national commission to set annual cost-of-living adjustment factors for federal receipt and outlay programs. The Commission would examine available evidence on a periodic basis, and estimate the bias in the CPI taking into account both the latest research on the sources and magnitudes of the bias, and any corrective actions that had been taken by the BLS. This type of approach would have the benefit of being objective, nonpartisan, and sufficiently flexible to take full account of the latest information. Moreover, there is no reason why the two tracks could not proceed in parallel.

Without the second track, we are implicitly assuming, contrary to overwhelming evidence, that the most accurate estimate of the bias is zero. There has been considerable objection that such a second track procedure would be a political fix. To the contrary, assuming zero for the remaining bias is the <u>political</u> fix. On this issue, we should let evidence, not politics, drive policy.

We have an overarching national interest in building a better measure of consumer prices and in implementing more rational indexation procedures. Through these efforts, we are most likely to ensure that the original intent of the relevant pieces of legislation will be fulfilled in insulating taxpayers and benefit recipients from the effects of ongoing changes in the cost of living. At present this objective is not being met.