Editor's Overview

THIS TWELFTH ISSUE OF THE *International Productivity Monitor*, published by the Centre for the Study of Living Standards, differs from past issues. Five of the six articles address one topic, namely the impact of the Boskin Commission after one decade on price measurement. A final article discusses the role of information technology in the US growth resurgence.

In December 1996, the Boskin Commission released its final report, *Toward a More Accurate Measure of the Cost of Living*, prepared for the US Senate Finance Committee. The Commission investigated possible sources of bias in the US Consumer Price Index (CPI) and concluded that the CPI in 1995-96 was upward biased by 1.1 percentage points per year. This startling finding had important ramifications for price measurement in both the United States and throughout the world. The articles in this symposium, by leading researchers in the price measurement field, examine from different perspectives the impact of the Boskin Commission after one decade.

In his brief introduction to the symposium, **Jack E. Triplett** of Brookings Institution, and organizer of the session at the January 2006 annual meeting of the American Economic Association where these papers were originally presented, highlights the importance of price measurement for reliable productivity estimates. For Triplett, accurate price indexes are essential for reliable productivity measurement. Indeed, he points out that a one percentage point upward bias in price changes results in a one percentage point downward bias in real output growth and by consequent productivity growth. An upward bias in price indexes implies that productivity growth is being underestimated.

In the first article in the symposium, **Robert J. Gordon** from Northwestern University, one of the five members of the Boskin Commission, summarizes the report's methods, findings, and recommendations, and then reviews the comments and criticisms that appeared soon after the report was issued. Changes in CPI methodology are also summarized and assessed, as is recent research on related issues. Gordon sharply distinguishes two questions. First, with what we know now, what should the Commission have concluded about CPI bias in 1995-96? Second, what is the bias now after the many improvements introduced into the CPI since the Commission's report?

On the first question, Gordon notes that his own recent research on apparel and rental housing indicates a substantial downward bias in the CPI over much of the twentieth century, diminishing in size after 1985. Incorporating these findings into the Boskin matrix would reduce its 0.6 percentage point annual upward bias due to quality change and new products to a smaller 0.4 point bias. However, this is more than offset by the stunning discrepancy over 2000-06 in the chain-weighted C-CPI-U compared to the traditional CPI-U, indicating that the Commission greatly understated the magnitude of upper level substitution bias, that is the substitution between broad consumer expenditure categories. This retrospective evaluation suggests that the bias estimate for 1995-96 should have been 1.2 to 1.3 percentage points, not 1.1 points.

Gordon estimates that the upward bias in the CPI has declined from the revised 1.2-1.3 percentage points in the Boskin era to about 0.8 points today. Yet he notes that the Boskin report,

like most contemporary studies of quality change, failed to accord sufficient importance to the value of new products and increased longevity. Allowing for these, he concludes that the current upward bias in the US CPI is at least 1.0 percentage points per year.

In the second article in the symposium **John S. Greenlees**, Associate Commissioner of Prices and Living Conditions at the US Bureau of Labor Statistics (BLS), provides a BLS response to the Boskin Commission from the perspective of ten years following the release of the report. Greenlees documents the research on price indexes done at the BLS in the first half of the 1990s that pointed to upward CPI bias, and discusses how these results attracted the attention of the US Senate, leading to the appointment of the Boskin Commission in 1995.

Greenlees provides a detailed discussion of the methodological changes to the CPI made by the BLS between 1996 and 2002 in three areas corresponding to the categories of bias identified by the Commission: upper and lower level substitution bias, quality change and new products, and outlet bias. A key change in the first area was the introduction of a chained CPI (C-CPI-U) that captured consumer substitution as much as possible. This was the first official superlative CPI produced by a statistical agency in the world. In the second area, the BLS has introduced more hedonic models to capture quality change, but the overall quantitative impact has been small. The BLS has also recognized the need to use a product and outlet sample that was as representative as possible of current consumer spending patterns. Viagra was quickly included in the CPI.

Greenlees concludes that the Boskin Commission, by forcing the BLS to scrutinize the strengths and limitations of its CPI procedures and by highlighting and publicizing the budgetary impacts of the CPI, paved the way for various CPI improvements.

In the third article in the symposium, **Jack E. Triplett** of the Brookings Institution begins by highlighting the extremely salutatory effect the Boskin Commission has had on international price statistics, promoting open discussion of price measurement issues, engendering dialogue between statistical agencies and users, and encouraging research. Less positive in Triplett's view has been the Boskin Commission's popularization of "guestimates," through its widely cited 1.1 percentage point CPI bias figure. Triplett characterizes a guestimate as a number produced when one does not have research results, but he does acknowledge that without its guestimate the report would have likely had minimal impact.

Triplett argues that the Commission ignored the possibility that quality improvements could actually produce a net downward bias to CPI components because the implicit quality adjustments inherent in the BLS procedures may over-adjust. Triplett points out that the motivation for the appointment of the Boskin Commision was highly political, namely a desire to reduce Social Security expenditures by indexing benefits to a lower rate of increase than the CPI. He feels that a mix of politics and statistics seldom produces an output that is favourable to economic statistics. For Triplett, it would have been preferable to separately address the distinct issues of CPI measurement and principles for allocation of resources to the dependent population.

In the fourth article in the symposium, **Ernst R. Berndt** from MIT provides a political economy interpretation of the rise and fall of public interest in price measurement, placing these developments in the context of the attempt by Congress and the White House to deal with growing deficits in the early to mid-1990s. He provides a detailed discussion of initiatives since the Boskin Commission, such as the National Academy of Sciences panel, to improve CPI measurement.

Berndt examines the thorny issue of the CPI for health care, with particular reference to the Boskin Commission recommendation that BLS move from pricing health care inputs to pricing health care outcomes. Because of the formidable measurement challenges in adjusting medical care expenditures for changes in outcome quality, little progress has been made in this area. Berndt concludes that the BLS has responded constructively to the recommendations from the various price measurement initiatives. By implementing many of the methodological changes suggested, the BLS has reduced net CPI inaccuracy and increased professional confidence in the reliability of the CPI.

In the fifth and final article in the symposium, **Martin Neil Baily** of the Institute for International Economics, and a former Chair of the US Council of Economic Advisors, discusses the policy implications of the Boskin Commission. He begins by offering support for the type of the back-of-the-envelope calculations of CPI bias that the Commission used so effectively to attract public attention to its report. In the area of quality adjustment, however, Baily criticizes the Boskin Commission for what he calls "premature extrapolation," that is moving too quickly from a limited number of examples to a broad conclusion.

Baily stresses the importance of high-quality data for policy decisions. He observes that a better allocation of existing resources can improve economic statistics, suggesting that the creation of a unified statistical agency in the United States, like Statistics Canada, would streamline data collection and analysis. In terms of the issue of Social Security solvency, Baily argues that use of the CPI to adjust social security benefits downward is not a preferred option. Echoing Triplett, Baily concludes that the Commission should have advised Congress that it did not have an adequate scientific basis to recommend a specific quantitative adjustment to the CPI index used to adjust federal programs.

The US economy has enjoyed a remarkable rebound in productivity and output growth in the last decade. In the sixth and final article in the issue, **Daniel E. Sichel** of the Federal Reserve Board reviews the book *Information Technology and the American Growth Resurgence* by Dale Jorgenson, Mun Ho, and Kevin Stiroh, which provides a detailed analysis of this rebound. Sichel begins by noting that the book can be considered a "Users' Guide" to growth accounting and is highly recommended in this regard. The basic story as told by Jorgenson et al. and to which Sichel is sympathetic is as follows. In the mid-1990s the constant-quality prices of semiconductors fell substantially, leading to rapid declines in the price of Information Technology (IT) capital goods. Firms responded by substituting capital purchases toward IT capital, resulting in a surge in IT capital deepening and labour productivity growth.

Sichel reviews in an even-handed manner the critiques that have been put forward of the growth accounting methodology from which Jorgenson et al. derive their results. His bottom line is that while many of the critiques make valuable points, there is currently no alternative methodology to growth accounting that offers such a comprehensive framework for assessing the sources of economic growth. Sichel notes that one limitation of the book is that it provides no analysis of the post-2000 US productivity growth acceleration, which has taken place in a period when rapid IT capital deepening was not occurring.