

Appendix B
IMPROVING THE QUALITY
OF
ECONOMIC STATISTICS

Improving the Quality of Economic Statistics

The Council of Economic Advisers has by the nature of its basic mission always been intensely interested in the quality of economic statistics. Economic statistics are critical to the Council's analyses of policy issues, advice to the President, forecasts on the economic outlook, and production of this *Report*. The Council also has an important role in the dissemination of economic statistics through the monthly publication of *Economic Indicators* and Appendix C of this annual *Report*.

The Council and other agencies have become increasingly concerned with the quality of economic statistics, and a number of reports in the 1980s addressed problems with key statistics. In addition to members of the Federal statistical system, numerous professional organizations including the American Economic Association, the National Association of Business Economists, and the National Academy of Sciences, as well as the Congress have become concerned over the quality, timeliness, accuracy, methodological soundness, and comparability of economic statistics.

NUMBERS THAT MOVE THE ECONOMY

Although the United States has one of the finest statistical systems in the world, changes in the structure of the U.S. economy are making it increasingly difficult to track the course of the economy accurately. Accurate measurement is critical, because the "core" economic statistics have such a large impact on the economy. Statistics provided by the Federal Government alter private and public spending patterns, move markets, and drive government policy. Private contracts and orders, investment decisions, cost-of-living adjustments, the Federal budget, and monetary policy are all based on the economic information produced by the Federal statistical system.

Many analysts question the accuracy of measurement of even the most basic variables, such as output and inflation. This perceived decline in the quality of the basic national economic statistics series is particularly disturbing. Maintaining and improving these "core" statistics will be increasingly important as the Nation moves into the 1990s.

TRACKING ECONOMIC ACTIVITY IN TODAY'S ECONOMY

MEASURING PRODUCTIVITY, OUTPUT, AND PRICES

Measuring output involves measuring both increases in quantity and quality. The most serious problem in measuring output in our rapidly evolving economy is in estimating improvements in quality. When the Nation primarily produced things such as steel and wheat, output was easy to count—tons of steel and bushels of wheat. Today, a larger share of output is produced in sectors where increases in output are often in the form of improved quality and convenience: consider the impact of 24-hour automatic teller machines and of desktop and laptop computers. Measurement problems are most severe in rapidly growing industries such as services and microelectronics, and it is likely that real output growth in these industries is underestimated.

In some industries, output is now estimated by labor input. If total hours worked rises by 1 percent, then output is estimated to rise by 1 percent. The result is that productivity (output per hour worked) is assumed constant, so that measured productivity growth is automatically zero.

In other industries, output is estimated by dividing net sales by a price index. Unfortunately, in industries with rapid rates of innovation, it is difficult to separate pure price increases from those arising from improvements in product quality or service. For example, if problems in identifying and measuring quality changes cause the rate of pure price increase to be overstated, the measure of real output will be understated, and the overall rate of inflation will be overstated.

Price indexes that appropriately adjust for quality change can be quite important. When the Department of Commerce introduced a new computer price index that adjusted for quality change, it *raised* the average annual growth rate of real gross national product (GNP) between 1982 and 1988 from 3.8 to 4.1 percent, raising the level of real GNP by \$70 billion in 1988. Correspondingly, the new computer price index *lowered* the average annual rate of inflation (as measured by the GNP implicit price deflator) from 3.6 to 3.3 percent over this period.

In other industries, the statistical system may not have kept pace with changes in the economy. In the airline industry, deregulation produced lower fares, and passenger miles increased by more than 60 percent in the 1980s, yet reported output growth has been below average, and productivity—as measured by value-added per hour worked—has been declining. Part of the problem may be the result of the difficulties in developing real—price-adjusted—measures of output during a period when the fare structure was chang-

ing rapidly. Today less than 10 percent of tickets are sold at full price; in 1976, 85 percent of travelers paid full price.

It is hardest to measure output in the service-producing sector, where many problems arise: rapid innovation, frequent changes in pricing, and difficulties in accurately measuring and defining sales and units of output. Industries such as finance, insurance, and real estate, which are among the fastest growing in the economy as measured by sales and employment, are only average in terms of measured GNP growth. And despite rapid innovation, based in part on revolutionary advances in computation and communications, productivity in these sectors, as measured by value-added per hour worked, fell in the 1980s.

The increasing importance of the service-producing sector relative to the goods-producing sector has not only increased the difficulty of measuring total output, but has also increased the difficulty of collecting data on output. It is easier and less expensive to collect data in manufacturing industries dominated by large firms than in service industries dominated by small firms. For example, by surveying three firms in the auto industry it was possible to obtain data on more than \$150 billion in sales in 1987; whereas it would have required surveying all of the 189,000 firms in the eating and drinking industry to obtain data on \$150 billion in sales.

Finally, while the economy as a whole has gained from deregulation in transportation and services, Federal statistics have suffered. Deregulation has helped to increase competition, spur growth, and lower prices, but it has meant that data once available from regulators must be collected directly, in many cases from a larger number of firms.

MEASURING INVESTMENT, SAVING, AND WEALTH

The problems in economic statistics are not limited to output and inflation, but extend to other areas ranging from saving and wealth to income and poverty.

Investment and saving rates are critical factors in economic growth, international trade flows, economic stability, and the evolution of national wealth. Understandably, U.S. rates of saving and investment, particularly in relation to other countries, have been central to the debate on tax, budget, and trade policies. Yet estimates of U.S. saving and investment are not internationally comparable and may be seriously misleading.

The United States is one of only a few major industrialized countries in the world where national income accounts classify government expenditures on bridges, highways, and other investments as consumption rather than investment, which renders international comparisons of national saving and investment rates difficult. U.S. statistical conventions also use historical rather than replacement

costs to value international assets. Since most U.S. investments abroad were purchased some time ago, while most foreign investments in the United States have been made in recent years, U.S. assets abroad are undervalued relative to foreign assets in the United States.

MEASURING INCOME AND POVERTY

Estimates of the level and distribution of real family income and of the extent and nature of poverty drive political debates and decisions about social policy and the safety net. Yet the poverty index we use is based on research that was done in the 1950s and 1960s and may not be well suited to the 1990s. Although most major statistical series are revised every 5 years to reflect current price, consumption, and production patterns, the official poverty measure has not had a significant revision in over 25 years.

The Bureau of the Census in recent years has produced experimental measures of poverty that partly correct for well-known problems with the official poverty thresholds and with the definition and measurement of income. These adjustments significantly affect estimates of the level and trends in income and poverty. For example, depending on the definition of income, Census estimates of the poverty rate can vary widely (e.g., by as much as 10 percentage points). A case in point involves the estimated rate of price inflation. Using a consistent measure of price change can lower the poverty estimate by 1.5 percentage points. It also shows real family income rising, albeit slowly, rather than falling during the 1970s.

Nevertheless, our basic understanding of appropriate measures of poverty remains far from complete. Additional research on relevant prices, consumption patterns, and family composition in the 1990s is needed to improve our understanding of the level and distribution of economic need in this country.

IMPROVING ECONOMIC STATISTICS

The President has established a working group on improving the economic statistics. The working group is chaired by Michael J. Boskin, Chairman of the President's Council of Economic Advisers, and includes representatives of many of the major producers and users of economic statistics in the Federal Government. In its work thus far, the group has: surveyed the statistical agencies to assess existing plans and priorities; gathered suggestions for further improvements from the agencies and from the community of users inside the Administration, in the Congress, and outside government; and developed a recommended package of the highest priority improvements in economic statistics.

In developing its initial recommendations, the working group concentrated on developing priorities to resolve the inevitable con-

flicts between the various improvement goals, such as those between accuracy and timeliness. The resulting recommendations focus on proposals that address well-known measurement errors, that are in areas important to public policy, that are cost-effective, and that can generally be completed in a reasonable period of time.

Based on the working group's recommendations, the President has approved a multi-year initiative to improve economic statistics:

- This initiative will build on the data improvement efforts already underway at the statistical agencies. Wherever possible it will complement ongoing plans for improvement by reprioritizing, using alternative methods, or revising the existing timetable for improvements.
- The President has approved the initial set of recommendations developed by a working group. These recommendations include both short- and long-term improvements, and focus on the most important steps required to maintain and improve the "core" economic statistics in three major areas of policy concern: a) productivity, output, and prices; b) investment, saving, and wealth, and; c) employment, income, and poverty.
- The statistical agencies have reprogrammed funds during fiscal 1990 to address the priorities identified by the working group, and the relevant agencies are currently developing specific plans to implement the working group's improvements.
- The fiscal 1991 budgets for the relevant statistical agencies include additional funds to begin to implement some of the recommendations.
- The statistical agencies will report back to the working group with their detailed plans to implement its recommendations.
- The working group will develop a comprehensive long-term program to improve the economic statistics. In addition to developing options to fully implement the working group recommendations made to date, the program will consider organizational, methodological, and other overall improvements, as well as the resources required to implement them. It will present options to the Economic Policy Council for possible recommendations to the President.

As the Administration proceeds with this initiative, it will continue to work in close cooperation with the Congress, the private sector, international organizations, and the community of data users.

