

**Improving Measurement of
Employment, Hours and Earnings
in the Service Sector**

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1. **Background.** Among the difficult and perplexing measurement problems relating the service sector, those regarding the measurement of employment, hours, and earnings would seem to be rather simple and straight-forward. For example, when placed along side of the issue of measuring product and prices in services, it would seem that counting positions and enumerating the working conditions of service sector workers should be a matter expeditiously handled.

2. Nonetheless, the difficulties have been formidable. The difficulties stem from many of the same sources that have bedeviled measurement of other service sector economic phenomena – the sheer number, small size and extreme volatility of service establishments; the difficulty of appropriate economic classification; and the newness of some of the activities. Thus, even though evidence of a growing service sector for which sufficient data was not available has been mounting for decades, little was done in the United States to create additional employment, hours, and earnings data on the service sector until the mid-to late-1980s.

3. **Purpose.** This paper addresses the program of the U.S. government to redress the information imbalance between the goods and service sectors, traces the impetus for the expansion of data on the service sector, elaborates the factors that had limited the ability of the U.S. Bureau of Labor Statistics and its cooperating State agencies to improve data, and summarizes recent accomplishments of the U.S. government under the auspices of the so-called "Boskin Initiative" to improve availability and access to data on employment, hours, and earnings in the service sector.

4. **Service Sector Coverage.** Throughout the post-World War II period, there has been a substantial employment shift in the U.S. economy from goods-producing to service-producing industries. The underlying theme of industry employment shifts has been playing for decades. At the middle of the century, 41 percent of all nonfarm jobs were in the goods-producing sector. By 1990, that proportion had declined to 23 percent. Over this period, though the goods-producing sector experienced a decline in its share of jobs, the number of jobs remained relatively stable, falling during recessions and rising again during subsequent recoveries. The service sector, on the other hand, survived recessionary years relatively well and, in most cases, even continued to add jobs.

5. Despite these shifts, the U.S. government continues to this day to publish substantially more detailed coverage of the goods-producing than the service-producing sectors. This disparity was not the result of an unmindful or uncaring attitude on the part of the statisticians.

6. Some progress over the past two decades should be noted. Indeed, as a result of an overall modernization of the major employment survey operation begun in the early 1980's, the U.S. government was able to build survey samples and estimation procedures to publish data on 82 additional service sector industries in 1984. With that extension, service sector data on employment, hours, and earnings were published for 105 industries at the 3-digit Standard Industrial Classification level, and 53 industries at the 4-digit SIC level. Still, this detail was available for only 54 percent of the 3-digit industries and 14 percent of the 4-digit service-producing industries, in contrast to coverage of 81 percent and 42 percent for goods-producers.

7. This situation was representative of the status of coverage of the service sector in statistical programs throughout the U.S. government in the late-1980's. In the late-1980's there was a break-through in attention to these shortcomings, with three proximate causes which we can identify:

(a) The revision of the Standard Industrial Classification structure in 1988 caused and enabled a large-scale reclassification effort;

(b) An increasing volume of concern on the part of groups such as the American Economic Association and the National Academy of Sciences; and

(c) The specific impetus for improvement provided by a working group of the cabinet-level Economic Policy Council on improving the quality of economic statistics.

8. A working group on improving the quality of economic statistics was established in April 1989 under the chair of Michael J. Boskin, Chairman of the President's Council of Economic Advisors. It developed a package of recommendations for improving economic statistics which was approved by President Bush in November 1989. The initiatives -- officially called the Federal Economic Initiative (FEI) and informally known as the Boskin Initiatives -- fell into seven broad areas:

(a) Modernizing the National and International Economic Accounts to improve their accuracy, breadth, and international comparability.

(b) Increasing the coverage of the service sector.

(c) Separating quality and inflation changes in price data;

(d) Improving the establishment and household data surveys;

(e) Preparing for future statistical workforce needs

(f) Sharing of statistical data.

9. Given the budget cycle in the U.S., the first of the improvement programs were funded and put in place in October 1991. Subsequent projects are, at the time of this writing, scheduled to begin in October 1992, with a time horizon for the improvement effort (in the case of the employment, hours, and earnings program) extending to 1997.

10. Employment, Hours, and Earnings Improvements. The initial priority is to expand coverage of employment in the service sector. In most cases, this requires (a) improvements to the business list for better identification of service sector establishments, (b) refinement of samples to improve the representativeness of the service sector, (c) implementation of programs to assure that reports are received and processed in a timely manner, (d) redesign of estimation procedures, and (e) enhancement of analysis and publication programs.

11. The goal is to develop and publish employment, hours, and earnings estimates for 110 additional service sector industries, a 50 percent increase in published service sector industry detail by 1996. This enhancement, based on expansion and refocusing of the survey sample, will provide users with a full profile of service sector employment. The new industries will be phased in over a five year period. An additional 30 are being added in 1992, and others will be added each year, reaching 110 new industries by 1995. The specific plan and milestones are shown below:

Publication Expansion of Service-Sector Employment and Earnings Data	
1991	Introduce 10 new industries with 40 new employment & earnings series
1992	Introduce 20 new industries with 80 new employment & earnings series and begin system development work
1993	Introduce 27 new industries with 115 new employment & earnings series and continue system development work
1994	Introduce 27 new industries with 115 new employment & earnings series and continue system development work
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Bottom Line (1991-1995):	
	111 new service sector industries (50%- increase in published service sector industry detail)
	465 new service sector employment & earnings series (50' increase in published service data series)

12. Though the service sector is separately targeted in terms of expansion of publication detail, it also constitutes an important aspect of overall efforts to improve accuracy in the initial monthly employment estimates from the business survey under the Boskin Initiative. A major aspect of the improvement program is to introduce automated data collection methodology to speed up receipt of reports from business establishments. This will increase substantially the proportion of establishments included in the preliminary estimates released at the beginning of each month, thereby eliminating sizeable revisions.

13. The lack of timely receipt of information from the service sector, thus the relative lack of representation of this sector in the initial monthly estimates of employment, hours, and earnings, has been a problem for some time. By the time of "first closing", when the Bureau makes its initial survey-based estimates (2-3 weeks after the week of

reference), the reports from about 57 percent of all 370,000 reporting establishments have been received and processed. These reports represent about 47 percent of all sample employment.

14. Sample receipts for much of the service sector have lagged those of the goods sector. For example, 63 percent of manufacturing but only 51 percent of the retail trade sample is received by first closing.

15. The approach to improving this aspect of service sector data quality relies on automation and technological advances. With an initial focus on larger reporters (250 or more employees), the Bureau is converting mail reporters to Touch-tone Data Entry (TTDE) reporting. By the end of September, 1992, the BLS had converted 22,800 reporters to this faster and more accurate method of reporting. The first closing response rate for large service sector employers advanced by 10% over the first year of the Boskin initiative.

16. The result of this Initiative will be a smaller revision in the estimates of service sector employment, hours, and earnings caused by the receipt of additional sample returns. Policy makers will then have more accurate data to monitor the economy and the accuracy of the national accounts, industrial production index, and other indicators based on the BLS monthly estimates will be improved.

17. In addition to improvements in the survey of employment, hours, and earnings, BLS is pursuing improvements in several other major programs under the Boskin initiative. These are briefly described below:

(a) Prices. In the Price programs, the Federal Economic Initiative (FEI) provides funds for two broad purposes, expansion of service sector price indexes in the Producer Price and International Price programs, and improvement of data quality.

-- In the Producer Price Program, service sector expansion will include Health Services and part of commercial real estate. Here, indexes for hospitals will be introduced in 1993, indexes for physicians will be introduced in 1994, and indexes for commercial real estate will be introduced later, probably in 1996.

-- In the International Price Program, service sector expansion will complete coverage for transportation industries. Indexes are scheduled for export tramp services in 1995 and for export ocean ports, export airports, and export ocean liner services in 1996.

-- The improvement in data quality in FEI is focused primarily on the Producer Price Index program and more specifically at industries producing high technology products. This effort is broad in scope, requiring new approaches to sampling, data collection, repricing, and quality adjustment. The first goal, already completed, was to place selected high-tech industries on a two-year resampling cycle rather than the average six-year cycle for

the rest of the PPI industries. The second part of the effort is to develop sophisticated econometric quality adjustment techniques; this effort is just getting underway.

(b) Household survey data on services. Another goal is to improve unemployment measures in the labor force survey, which yields information on the demographics of the service sector workforce and their labor force status, through application of automated data collection techniques. The Bureau of Labor Statistics and the Census Bureau are continuing the comprehensive multiyear redesign of the Current Population Survey. In addition to the drawing of a new sample to incorporate up-to-date population information, the redesign will involve the development, testing and introduction of a new questionnaire, improvements in the longitudinal capability of the survey, and a better data processing system. Adoption of the new questionnaire requires the use of computer-assisted interviewing. The new questionnaire will improve the accuracy of the data collected by permitting more complex patterns in questionnaire format. This proposal will fund the purchase of laptop computers to be used in data collection, staff support for the development of the central control system, and research to document the effects of computer-assisted interviews on the data.

(c) Business directory. A final goal is to enhance the Business Establishment List (BEL) project to improve the BLS business directory, or universe file. BLS will improve its universe file, a comprehensive list of U.S. business units used as the sampling frame for all BLS establishment surveys. Currently, the Bureau is engaged in a multi-year BEL project to improve the file structure, local identifiers, and coding of business establishments. The project involves: 1) improved coding of multi-location businesses, 2) more frequent updating of the entire list, and 3) improved methods for the handling of newly formed establishments and those who go out of business.

18. A concordance between company organizational structures and individual business establishments will be developed to permit analysis of the employment effects of mergers and acquisitions. Establishments will be tracked longitudinally so that analysis of changing business formation can be undertaken. The Business Establishment List project is a Federal-State cooperative program in which the State Employment Security agencies are working with BLS to improve and expand the basic file and its structures. Initial results of this effort will be produced in FY 1993 with the publication of new enterprise statistics, including statistics on employment and wage changes in single versus multiple establishment enterprises, and statistics detailing employment and wages by enterprise size class.

19. Summary. The Boskin Initiative is an important framework for improving coverage and quality of data on the service sector. It will lead to improvements in the quality of nearly every survey program conducted by the Bureau of Labor Statistics that provides information on the service sector.