NAICS Detail for Earlier Years: Conversion of GDP by Industry
BEA Advisory Committee Meeting
May 14, 2004

Overview

- BEA plans to provide estimates for 65 NAICS industries for 1987-1997 in the Fall.
- Estimates before 1987 will be provided for 10-20 broad industry groups next Spring.

Background

- Most researchers view NAICS as an improved industry classification system.
- A major downside is the lack of time series consistency before 1998.
- Researchers have expressed the need for longer NAICS industry time series.
- A fundamental problem is lack of source data on a NAICS basis before 1997.
    - GDP by Industry uses source data from a wide variety of programs.
    - Alternatives to the regular estimation methodology must be developed.

What Others Have Done

- FRB overcame the source data problem for the industrial production index by reclassifying microdata in manufacturing economic censuses going back to 1963.
    - These results can only be used for the manufacturing sector.
    - Reclassified microdata are generally not available for nonmanufacturing.
    - BEA is using the FRB results for manufacturing to evaluate its procedures.
- BLS has converted employment and earnings for detailed industries back to 1990 using ratios derived from dual-coded microdata for 2001.
    - Conversion of ES-202 data may be forthcoming later this year.
    - BEA will also use the BLS data to evaluate its procedures.

BEA Approach: Nominal Estimates

- Plan to convert selected variables back to 1987: Gross output, intermediate inputs, value added, compensation of employees, taxes on production and imports, and gross operating surplus (no underlying detail will be provided).
- Revised NIPA estimates for government for 1987-1997 from the NIPA comprehensive revision can be used directly, as in the regular methodology.
- Convert the 62 revised private sector SIC-based estimates for 1987-1997 from the GDP-by-Industry comprehensive revision to 61 private NAICS industries.
- Conversion is based on matrices that show how much of each two-digit SIC-based estimate should be allocated to each of the published 3-digit NAICS industries.
    - Many of the published SIC-based estimates map nearly one-to-one to published NAICS industries.
    - Conversion matrices vary over time to reflect changes in the SIC composition of NAICS industries.

- Benchmark concordance for 1997 derived from the benchmark input-output (I-O) accounts maps selected key data items for about 800 NAICS private industries to the corresponding two-digit SIC-based estimates.
    - Level of I-O detail means that most matches are one-to-one.
    - NAICS auxiliaries are allocated to SIC industries based on auxiliary allocations in the benchmark I-O accounts.
    - Benchmark concordance is backcast annually to 1987 using SIC-based shipments, sales, and receipts that match for the most part on a one-to-one basis.
    - Shipments, sales, receipts works best for converting gross output. Other extrapolation variables may be needed for compensation and operating surplus.

BEA Approach: Real Estimates

- Plan to develop real estimates for gross output, intermediate inputs, and value added for 65 industries. Prefer to use the double-deflation method for real value added.
- Preliminary tests indicate that the "conversion" approach used for the nominal estimates does not work as well for real variables.
- Real gross output estimates will be computed by deflating converted nominal gross output estimates.
    - Detailed price indexes have been matched at the detailed industry level along with the shipments, sales, and receipts extrapolators.
    - Fisher aggregation will be used to compute gross output price indexes for the 65 published industries.
- Development of NAICS-based price indexes for intermediate inputs is much more difficult:
    - Important to allow the composition of inputs by industry to vary over time.
    - May need to consider rough conversions of previous I-O tables for evidence of such change.
- Develop a modified double-deflation method for computing real value added by industry.

Time Frame and Timing

- Provide nominal and real estimates for 65 detailed industries back to 1987 in Fall 2004.
- Investigate possibilities for providing estimates for years before 1987 in Spring 2005.
    - Most likely would be for nominal and real value added only.
    - Gross output and intermediate inputs estimates would not be computed.
    - Would be at a higher level of aggregation (e.g., 10-20 industry groups)

Issues for the Committee

- Should we consider alternatives to the double-deflation method for computing real value added by industry if we cannot develop adequate intermediate input price indexes on a NAICS basis?
- How important are estimates at the detailed industry level as opposed to the summary industry level for years before 1987?