Recent changes in the national Current Employment Statistics survey

*The conversion of the survey to the North American Industry
Classification System (NAICS) will provide statistics
that better reflect today's high-technology
and service-providing industries; other important changes
are a shift to a probability-based sample
and the incorporation of concurrent seasonal adjustment*

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The Current Employment Statistics (CES) survey for the national series underwent a number of important changes with the release of May 2003 preliminary data on June 6 of that year. First and foremost, the CES survey converted to the 2002 North American Industry Classification System (NAICS) from the 1987 Standard Industrial Classification System (SIC). With the release of national data in June 2003, all CES data—both the current and the historical series—are now based on NAICS.

The CES survey also completed the transition to a probability-based sample design from a quota-based sample design. Yet another change to the national series was the introduction of concurrent seasonal adjustment, in which seasonal factors are calculated each month to produce seasonally adjusted data series.

This article covers changes as they occurred in the national CES series. The Bureau of Labor Statistics has a separate CES State and Area program that provides employment, hours, and earnings statistics for States and metropolitan areas.[1] The State and Area program converted to NAICS with the release of preliminary January 2003 data in March 2003.[2]

Overview of the CES program

The CES survey is a sample survey of business establishments that is conducted each month. Preliminary national data are released 3 weeks after the reference period. Businesses report the number of employees, hours worked, and earnings of workers on their payrolls who received pay for the pay period that includes the 12th day of the month. The CES program then calculates estimates of the number of nonfarm jobs, average hours, and earnings by industry for the Nation, States, and major metropolitan areas. Estimates from the CES survey are benchmarked once a year to universe counts provided by the Covered Employment and Wages program (commonly known as the ES-202).

The CES program publishes estimates of all employees, women workers, and production workers in the goods-producing industries and nonsupervisory workers in the service-providing industries. In addition, average weekly hours, average hourly earnings, and average weekly earnings of the production or nonsupervisory workers are calculated; other derivative series are also published. CES data serve as timely statistics that are widely followed and much anticipated as indicators of current economic trends.

Difference between NAICS and SIC

NAICS is an improvement over the SIC system, which was last revised in 1987. NAICS varies from the SIC system chiefly in its method of classification and coding structure; it also provides a comparable industry classification system for the countries of North America.

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A new classification system for the NAFTA trading partners. NAICS is a new industry classification system that was devised by the statistical agencies of the United States, Mexico, and Canada. NAICS provides industry comparability among the North American Free Trade Agreement (NAFTA) trading partners. The developers of NAICS also sought to provide comparability with the two-digit level of the International Standard Industrial Classification (ISIC), Revision 3.

The U.S. Economic Classification Policy Committee represented the United States in the negotiations with the other countries. The committee, which was established by the Office of Management and Budget and was directed to create a new industry classification system, consists of members from the Census Bureau, the Bureau of Economic Analysis, and the Bureau of Labor Statistics.

Classification based on production processes. NAICS is based on a unifying classification concept: establishments should be grouped together according to their production processes. Under the SIC system, establishments were not grouped together on the basis of any single economic concept; rather, they were grouped together in accordance with various of their characteristics, such as inputs used in production, or by type of customer. An example of this approach to production-oriented classification is that retail bakeries were found in retail trade under the SIC system. Under NAICS, by contrast, retail bakeries are found in manufacturing, along with commercial bakeries. Both types of establishments share similar production processes, so both are found within *food manufacturing* in NAICS.

NAICS emphasis on new, emerging, service-providing, and high-tech industries. One goal in creating NAICS was to recognize industries that are new, emerging, or considered to be high-technology industries. The SIC system, which was developed in the 1930s and was last updated in 1987, did not recognize these industries; in fact, a criticism of the system is that it does not reflect the current economy.

In NAICS, a sector for the production and distribution of all types of information includes new classifications for industries in telecommunications and industries that came about due to the emergence of the Internet, such as Internet service providers and Internet-only publishing and broadcasting. In addition, a number of high-tech industries, such as semiconductors and electronic components manufacturing and cellular and other wireless carriers, are identified in NAICS.

Another goal in the development of NAICS was to provide increased detail in the service-providing area; this detail is reflected in the large number of sectors now found there: of the 19 nonagricultural sectors in the system, 16 are found in the service-providing area.

Coding structure. NAICS uses a six-digit coding structure to classify establishments. The first two digits represent the

sector, the third digit the subsector. The fourth digit designates the industry group, the fifth the NAICS industry. The sixth digit represents the national industry and is used for detail that is specific to individual countries. For most sectors, comparability between the three countries is found at the five-digit level.

Sectors and supersectors. Within the nonagricultural portion of NAICS, there are 3 sector groups in the goods-producing domain and 16 in the service-providing area. The Economic Classification Policy Committee has further aggregated NAICS sectors into groupings called *supersectors*. The CES program has reconstructed data for the national series back to 1939 for the sectors, supersectors, and higher aggregations listed in exhibit 1. Under NAICS, the CES program has aggregations for durable goods and nondurable goods within manufacturing, as it had under the SIC system. The CES program continues to classify all publicly owned establishments in government, with aggregations by Federal, State, and local government ownership.

NAICS 2002. The first version of NAICS was *NAICS 1997*, a version that was not implemented by BLS programs. The second version, *NAICS 2002*, is the version that the CES program and all other BLS programs will use to classify their data.[3] *NAICS 2002* incorporated increased comparability among the United States, Mexico, and Canada for the construction sector, as well as increased detail in the information sector for Internet-related activities and more U.S. detail within retail trade. In addition, the United States restructured wholesale trade to incorporate the differences between merchant wholesalers, business-to-business electronic markets, and wholesale trade agents and brokers.

The U.S. Economic Classification Policy Committee and its counterparts in Canada and Mexico plan to reevaluate the NAICS structure for possible revisions every 5 years. Currently, the committee is considering revisions for 2007.

Change in treatment of auxiliary units. Auxiliary units are worksites within a company that serve primarily other establishments within that company. Auxiliary units provide services such as management or warehousing for the parent company. Under the SIC system, auxiliary establishments carried the code for the primary activity of the parent. For example, a warehouse for a manufacturer of power tools was coded *power driven hand-tools*, even though it was not actually manufacturing the tools, but was engaged solely in warehousing them. Under NAICS, this establishment would instead receive the code for *general warehousing and storage*. Thus, under NAICS, the information the establishment provided to the Bureau would be included, not in statistics for manufacturing, but in data for the warehousing industry. Also, NAICS has a brand-new sector 55, *management of companies and enterprises*, that encompasses establishments engaged in managing companies.

Exhibit 1.	Higher levels of aggregation for the CES national program, by NAICS industry	
Aggregation level		**BLS NAICS** tabulating code
Total nonfarm		00–000000
Total private..		05–000000
Goods-producing industries		06–000000
Service-providing industries		07–000000
Private service-providing industries		08–000000
Natural resources and mining		10–000000
NAICS 1133, logging		10–113300
Sector 21, mining		10–210000
Construction, sector 23		20–000000
Manufacturing, sectors 31, 32, and 33		30–000000
Durable goods (Includes NAICS 321, 327, 331, 332, 333, 334, 335, 336, 337, 339)		31–000000
Nondurable goods (Includes NAICS 311, 312, 313, 314, 315, 316, 322, 323, 324, 325, 326)		32–000000
Trade, transportation, and utilities		40–000000
Sector 42, wholesale trade		41–420000
Sectors 44–45, retail trade		42–000000
Sectors 48–49, transportation and warehousing		43–000000
Sector 22, utilities		44–220000
Information, sector 51		50–000000
Financial activities		55–000000
Sector 52, finance and insurance..		55–520000
Sector 53, real estate and rental and leasing		55–530000
Professional and business services		60–000000
Sector 54, professional and technical services		60–540000
Sector 55, management of companies and enterprises		60–550000
Sector 56, administrative and waste services		60–560000
Education and health services		65–000000
Sector 61, educational services		65–610000
Sector 62, health care and social assistance		65–620000
Leisure and hospitality		70–000000
Sector 71, arts, entertainment, and recreation		70–710000
Sector 72, accommodations and food services		70–720000
Other services, sector 81		80–000000
Government		90–000000
Federal Government		90–910000
State government		90–920000
Local government		90–930000

Conversion of CES national series to NAICS

A number of important steps took place in order to convert the CES national series from SIC to NAICS. Specifically, the CES reporting units received NAICS codes, the CES estimating cells were defined, and the reconstruction method was devised.

NAICS codes on the Longitudinal Database. The first step in converting to NAICS was the assignment of NAICS codes to records residing in the BLS Longitudinal Database (LDB), a universe file of business establishments derived from Unemployment Insurance tax records. The BLS Covered Employment and Wages program (also known as the ES-202) obtains data from the approximately 8 million employers covered by State unemployment insurance laws. The LDB contains these universe data back to 1990, and records are linked over time according to their LDB number. Since the LDB is a universe, it serves as a sampling frame for many BLS surveys. The Bureau and its State partners assigned NAICS codes to the records on the LDB file over a multiyear period by contacting employers and collecting information on their industrial activities. The units that were part of the CES sample had these NAICS codes added to their CES records. The NAICS-coded LDB then served as a source for the reconstruction of the CES series under NAICS.

Reconstruction methodology. The CES program used the March 2001 microdata from the LDB to reconstruct the national CES series under NAICS for previous years.[4] The LDB file carries SIC and NAICS codes on its records. Ratios established for March 2001 were used to map employment from SIC to NAICS in order to form the NAICS-based history for each series. An example of the reconstruction for NAICS series 326210, *tires*, in manufacturing, is as follows: according to March 2001 data from the LDB, 99.1 percent of employment in SIC 3011, *tires and inner tubes*, makes up 90.1 percent of the employment for NAICS series 326210, *tires*, and 3.5 percent of the employment in SIC 7534, *automotive and tire repair shops*, makes up 9.9 percent of the employment in the same NAICS series. These ratios were used to reconstruct the series back to its starting date of 1990. For 2001 forward, the data for all NAICS series were produced in accordance with standard sample-based estimation and benchmarking techniques.[5]

An analogous procedure was used to reconstruct the average weekly hours, average hourly earnings, and average weekly earnings series for production or nonsupervisory workers. NAICS series were produced from a weighted average of the SIC component series, with NAICS-to-SIC ratios for March 2001 employment used as the weights.

New levels for hours and earnings, women workers, and production or nonsupervisory workers were set to the probability sample averages. Because of this shift in levels, all non-all-employees series were subject to change—even those similar in content between the two classification systems.[6]

Criteria for national CES series. CES estimates are made at what is called the basic estimating cell level. Basic cells are defined by NAICS code. (For construction, public education, and public general administration, stratification is done by geographic location also.) More aggregated levels, known as summary cells, include the basic cells that come beneath them.

In order to devise the estimating cell structure under NAICS for the national program, sample and universe counts by NAICS code were reviewed for their suitability in meeting certain criteria. The following criteria were deemed necessary for publication of a NAICS series at the national level: a universe employment level (from the ES-202) of at least 10,000 and a minimum sample size of 70 reporting units in the ES-202 file or minimum sample coverage of at least 50 percent of the universe employment level. Variance was used as a secondary criterion.[7]

The CES national program is producing data for all two-, three-, and four-digit NAICS levels, plus supersectors and higher level aggregates. At the four-digit level, a few series were combined because they could not meet the criteria on their own. Approximately half of NAICS-defined series are available at the five- and six-digit levels; some similar series

were combined at these levels to meet publication criteria and increase the number of cells published.

National CES series under NAICS

Under NAICS, the CES program will continue to produce data for all datatypes that were provided under the SIC.[8] To summarize the differences, the service-providing area is somewhat more detailed under NAICS, there is a small change in scope in the private sector, and the national series have a reconstructed history for all datatypes going back to at least 1990. A number of newly identified sectors and industries also are available under NAICS.

Change in number of national CES series. The number of national CES series under NAICS is about the same as the number of series that were produced under the SIC system. (See table 1.) However, the distribution of the CES series between the goods-producing and service-providing domains has changed under NAICS. The goods-producing industries comprise natural resources and mining, construction, and manufacturing. The service-providing area encompasses the rest of the economy. (See exhibit 1.) Under NAICS, approximately 40 percent of the CES series are found in the goods-producing domain, 60 percent in the service-providing domain. Under the SIC system, there was a fairly even distribution of series between the two domains. This shift goes along with one of the goals of NAICS: offering increased detail in the service-providing industries.

Small change in scope in the private sector. The private sector comprises nongovernment establishments in the nonfarm economy. Under NAICS, a few industries are in agriculture that were not categorized in agriculture under the SIC. One such industry is *logging*. The CES survey will continue to

Table 1. Number of national CES series, NAICS and SIC

NAICS		SIC	
Descriptor	Number of estimating cells	Descriptor	Number of estimating cells
Total	1,188	Total	1,240
Goods-producing	477	Goods-producing	640
Service-providing	709	Service-producing	598
Aggregate levels[1]	5	Aggregate levels[2]	5
Supersector	11	–	...
Sector, two-digit	22	Division	9
Subsector, three-digit	85	Major group, two-digit	70
Industry group, four-digit	276	Industry group, three-digit	347
NAICS industry, five-digit	507	Industry, four-digit	760
U.S. industry, six-digit	264	–	...
Government	22	Government	42

[1] Includes total nonfarm, total private, goods-producing, service-providing, and private service-providing.
[2] Includes total nonfarm, total private, goods-producing, service-

producing, and private service-producing.

NOTE: Dash indicates no SIC counterpart of NAICS-level descriptor.

include logging in its scope, in the *natural resources and mining* supersector under NAICS. Part of a very small SIC industry for animal services has been moved into agriculture and is no longer included in the scope of the CES survey. The survey also continues to exclude the self-employed and workers employed by private households.

Historical data. For CES national series, all sector (two-digit), supersector, and aggregate levels above the supersector level have a reconstructed history going back to 1939, the current starting date of the total nonfarm series under the SIC system. All other national NAICS series have historical data going back to at least 1990 for all datatypes. Those series from the three-, four-, five-, and six-digit levels which are closely related to an SIC series have a history going further back in time.

CES analysts calculated the degree of interchangeability between the SIC and NAICS series in order to find those series with close relationships between the two classification systems. Interchangeability is the product of the percent of employment from a given CES series that was converted to a NAICS series and the percent of employment in a given NAICS series that came from a given SIC series.[9] The CES program has reconstructed history under NAICS for those national series with a 90-percent or greater degree of interchangeability. The quantity of historical data available depends on the quantity of data available for the corresponding SIC series. (See exhibit 2 for a list of series with pre-1990 history.)

New sectors and notable new series. Under NAICS, the national CES series has several new sectors within the service-providing area.[10] Also, a number of new series within NAICS were not found under the SIC system or were not easily identified. For example, NAICS has a new industry for *offices of real estate appraisers*.[11] Under the SIC system, these types of establishments were lumped into the industry *real estate agents and managers*.

1. *Construction.* Within construction, there is more detail within the *residential building* area than there was under the SIC system. New U.S. industries are *new single-family general contractors, new multifamily general contractors*, and *residential remodelers*.

2. *Manufacturing.* Under NAICS, manufacturing gains a new subsector for *computer and electronic products* that includes computer and peripheral equipment, communications equipment, audio and video equipment, semiconductors and electronic components, electronic instruments, and magnetic media. There are new U.S. industries for *semiconductor machinery* manufacturing and manufacturing of *printed circuit assemblies*. Manufacturing gains *dental laboratories* from health services under the SIC system and *retail bakeries* from

retail trade. Publishing industries move to the information sector under NAICS.

3. *Wholesale and retail trade.* With respect to trade industries, there was a fresh look at what should be regarded as wholesale trade and what should be considered retail trade. In the SIC system, the classification focused on the class of customer; with NAICS, the focus is on the method of selling. With this new approach, some businesses formerly classified in wholesale trade were moved to retail trade and conversely.

    With regard to wholesale trade, NAICS recognizes the differences in production processes between wholesalers that take title to the goods they sell and those which do not. On the one hand, there are groupings for merchant wholesalers—traditional wholesalers that take title to the goods they sell. On the other hand, there are separate categories for business-to-business electronic markets, and agents and brokers—wholesalers that do not take title to the goods they sell.

    There are new industries in retail trade that were not recognized under the SIC system. *Convenience stores* and *gasoline stations with convenience stores* are separate industries in NAICS. Other new industries include *cosmetic and beauty supply stores* and *optical goods stores*. Growing types of general merchandise stores are found in the industries *discount department stores* and *warehouse clubs and supercenters*. The growth in electronic commerce is recognized with an industry for *electronic shopping and mail order houses*.

4. *Transportation and warehousing.* Trucking now has distinctions between *general freight trucking, long-distance, truckload* and *general freight trucking, long-distance, less-than-truckload*. All types of warehousing and storage activities are found here that would have been coded as auxiliaries under the SIC system.

5. *Utilities.* Electric power generation is categorized into *hydroelectric power generation, fossil fuel electric power generation*, and *nuclear and other electric power generation*.

6. *Information.* The new information sector was created to bring together establishments that create and disseminate all types of informational and cultural products. Thus, establishments within information not only create and develop these products, but also provide the means for their distribution, whether in printed matter, in broadcast form, in motion pictures, or over the Internet. Included in this sector are publishing and broadcasting activities (except over the Internet), *Internet publishing and broadcasting, software publishers*, *motion picture and*

Exhibit 2. CES national series with history before 1990

BLS NAICS tabulating code	Industry	Beginning month and year of publication for all-employees series[1]
00–000000	Total nonfarm	1939
05–000000	Total private	1939
06–000000	Goods-producing	1939
07–000000	Service-providing	1939
08–000000	Private service-providing	1939
10–000000	Natural resources and mining	1939
10–113300	Logging	1947
10–210000	Mining	1958
10–211000	Oil and gas extraction	1972
10–212100	Coal mining	1985
20–000000	Construction	1939
20–236100	Residential building	1985
20–238000	Specialty trade contractors	1976
30–000000	Manufacturing	1939
31–000000	Durable goods	1939
31–321214	Engineered wood members and trusses	1972
31–321991	Manufactured and mobile homes	1972
31–327000	Nonmetallic mineral products	1951
31–327213	Glass containers	1958
31–327215	Glass products made of purchased glass	1972
31–327320	Ready-mix concrete	1972
31–331210	Iron, steel pipe, and tube from purchased steel	1972
31–331511	Iron foundries	1958
31–332111	Iron and steel forging	1958
31–332311	Prefabricated metal buildings and components	1972
31–332720	Turned products and screws, nuts, and bolts	1958
31–332721	Precision turned products	1958
31–332722	Bolts, nuts, screws, rivets, and washers	1958
31–332991	Ball and roller bearings	1958
31–333200	Industrial machinery	1972
31–333912	Air and gas compressors	1972
31–333922	Conveyors and conveying equipment	1972
31–334400	Semiconductors and electronic components	1985
31–334413	Semiconductors and related devices	1972
31–334511	Search, detection, and navigation instruments	1985
31–334512	Automatic environmental controls	1958
31–334513	Industrial process variable instruments	1972
31–334515	Electricity and signal testing instruments	1972
31–335110	Electric lamp bulbs and parts	1972
31–335200	Household appliances	1972
31–335221	Household cooking appliances	1972
31–335222	Household refrigerators and home freezers	1958
31–335312	Motors and generators	1972
31–335313	Switchgear and switchboard apparatus	1958
31–335910	Batteries	1972
31–335930	Wiring devices	1972
31–335931	Current-carrying wiring devices	1972
31–336212	Truck trailers	1964
31–336311	Carburetors, pistons, rings, and valves	1972
31–336321	Vehicular lighting equipment	1982
31–336370	Motor vehicle metal stamping	1972
31–336412	Aircraft engines and engine parts	1982
31–336600	Ship and boat building	1939
31–336611	Ship building and repairing	1939
32–000000	Nondurable goods	1939
32–311411	Frozen fruits and vegetables	1972
32–311500	Dairy products	1958
32–311511	Fluid milk	1982
32–311600	Animal slaughtering and processing	1976
32–311615	Poultry processing	1972
32–313100	Fiber, yarn, and thread mills	1958
32–322130	Paperboard mills	1972
32–324110	Petroleum refineries	1947
32–325300	Agricultural chemicals	1972
32–325613	Polishes and other sanitation goods and surface active agents	1972
32–326220	Rubber and plastics hose and belting	1972
40–000000	Trade, transportation, and utilities	1939
41–420000	Wholesale trade	1939
41–423930	Recyclable materials	1982

See footnote at end of exhibit.

Exhibit 2. Continued—CES national series with history before 1990

BLS NAICS tabulating code	Industry	Beginning month and year of publication for all-employees series[1]
42–000000	Retail trade	1939
42–441100	Automobile dealers	1972
42–441110	New car dealers	1972
42–441120	Used car dealers	1972
42–441210	Recreational vehicle dealers	1985
42–446110	Pharmacies and drug stores	1972
42–448140	Family clothing stores	1958
42–448200	Shoe stores	1958
42–453930	Manufactured and mobile home dealers	1972
42–454200	Vending machine operators	1982
43–000000	Transportation and warehousing	1972
43–482000	Rail transportation	1947
43–485200	Interurban and rural bus transportation	1947
43–485310	Taxi service	1985
43–485400	School and employee bus transportation	1972
43–485500	Charter bus industry	1972
44–220000	Utilities	1964
50–000000	Information	1939
50–511110	Newspaper publishers	1947
50–512130	Motion picture and video exhibition	1972
50–515100	Radio and television broadcasting	1958
50–515110	Radio broadcasting	1982
50–515120	Television broadcasting	1982
55–000000	Financial activities	1939
55–524200	Insurance agencies, brokerages, and related services	1985
55–531100	Lessors of real estate	1972
55–532100	Automotive equipment rental and leasing	1985
55–532230	Video tape and disc rental	1985
60–000000	Professional and business services	1939
60–541940	Veterinary services	1982
60–561300	Employment services	1985
65–000000	Education and health services	1939
65–611100	Elementary and secondary schools	1972
65–611300	Colleges and universities	1958
65–621100	Offices of physicians	1972
65–621200	Offices of dentists	1982
65–621300	Offices of other health practitioners	1985
65–621600	Home health care services	1985
65–622100	General medical and surgical hospitals	1958
65–624300	Vocational rehabilitation services	1972
65–624400	Child day care services	1985
70–000000	Leisure and hospitality	1939
70–713950	Bowling centers	1985
70–721000	Accommodations	1972
70–721100	Traveler accommodations and other longer-term accommodations	1972
70–721200	RV parks and recreational camps	1972
80–000000	Other services	1939
80–812210	Funeral homes and funeral services	1972
80–812920	Photofinishing	1982
80–813910	Business associations	1982
80–813920	Professional organizations	1972
80–813930	Labor unions and similar labor organizations	1982
90–000000	Government	1939
90–910000	Federal	1939
90–911000	Federal, except U.S. Postal Service	1939
90–916220	Federal hospitals	March 1975
90–919110	Department of Defense	1939
90–919120	U.S. Postal Service	1939
90–919999	Other Federal Government	March 1975
90–920000	State government	1955
90–921611	State government education	1955
90–922000	State government excluding education	1955
90–922622	State hospitals	1972
90–922920	State government general administration	1972
90–922999	Other State government	1972
90–930000	Local government	1955
90–931611	Local government education	1955
90–932000	Local government excluding education	1955
90–932622	Local hospitals	1972

[1] January unless otherwise indicated.

sound recording industries, *telecommunications*, and Internet service providers and related activities.

7. *Finance and insurance.* Newly identified industries in finance and insurance include *credit card issuing*, *sales financing*, *financial transaction processing and clearing*, and *investment advice.*

8. *Real estate and rental and leasing.* This new sector includes not only real estate activities, but all types of rental and leasing. There are categories for *lessors of residential buildings*, *lessors of nonresidential buildings*, and *miniwarehouse and self-storage unit operators.*

9. *Professional and technical services.* This new sector comprises establishments that perform professional, scientific, and technical activities; it requires labor that is highly skilled and educated. Included are legal activities, accounting and bookkeeping, architectural and engineering activities, *specialized design services*, computer systems design and computer facilities management, management and consulting, scientific research, advertising, and *veterinary services.*

10. *Management of companies and enterprises.* Included in this sector are establishments that manage, administer, or oversee other establishments within a company; these types of establishments were treated as auxiliaries under the SIC system. An example of an establishment that belongs in this category is the corporate headquarters of a corporation. The sector also includes bank and nonbank holding companies that hold or own the securities of another company in order to influence decisions or exercise some other kind of control over the company.

11. *Administrative and waste services.* This sector consists of establishments that perform support services for others. Included are temporary help and professional employer organizations (employee leasing), all types of travel arrangement services, security guards and security systems, *janitorial services*, and *landscaping services.* Some newly identified industries are *telemarketing bureaus*, *collection agencies*, *packaging and labeling services*, and *convention and trade show organizers.* Also, there are now separate industries for *hazardous waste treatment and disposal* and *nonhazardous waste treatment and disposal.* Other new categories in waste services are *remediation services* and *materials recovery facilities and other waste management services.*

12. *Educational Services.* This sector includes not only colleges and elementary and secondary schools, but all types of training activities and educational institutions, such as *management training*, *technical and trade schools*, and *fine arts schools.*

13. *Health care and social assistance.* This sector brings together the activities of health care and social assistance, activities that have become increasingly related to each other as the population has aged. Within the health care and social assistance sector, physicians are separated at the six-digit level into *offices of physicians, except mental health* and *offices of mental health physicians.* There are new industries for HMO *medical centers*, *freestanding emergency medical centers*, and *blood and organ banks.* New categories are found within *nursing and residential care facilities*, such as *residential mental and substance abuse care*, *continuing care retirement communities*, and *homes for the elderly.*

14. *Arts, entertainment, and recreation.* All types of cultural activities and sports are included in this sector. There are categories for *theater, dance, and other performing arts companies*; *sports teams and clubs*; *racetracks*; *casinos, except casino hotels*; and *skiing facilities.*

15. *Accommodations and food services.* This sector brings together hotels and other lodging places and eating and drinking places. Within accommodations, there are new classifications for *casino hotels* and *bed-and-breakfast inns.* Food services are broken out into *full-service restaurants*; *limited-service eating places*, such as fast-food restaurants, cafeterias, and snackbars; *food service contractors*; *caterers and mobile food services*; and *drinking places, alcoholic beverages.*

16. *Other services.* Included in this sector are industries that engage in the repair and maintenance of machinery and equipment, including automobiles, electric equipment, commercial machinery, and household machinery. The sector also includes *personal and laundry services* and *membership associations and organizations.*

Changes to supersector employment levels. The data for NAICS supersectors are not comparable to the same-named SIC divisions. The composition of employment in NAICS supersectors at the national level, on the basis of March 2001 data, is shown in table 2. Read from left to right, the table shows the SIC divisions that contributed to each supersector's employment. Thus, the new natural resources and mining supersector receives 12.7 percent of its employment from manufacturing under the SIC system; this supersector

Table 2.	Composition of employment of NAICS supersectors, and distribution of employment from SIC divisions, March 2001							
	SIC divisions							
NAICS supersectors	**Mining**	**Construction**	**Manufacturing**	**Transportation and public utilities**	**Wholesale trade**	**Retail trade**	**Finance, insurance, and real estate**	**Services**
Natural resources and mining:								
Employment	515,895	(¹)	75,136	(¹)	(¹)	(¹)	(¹)	(¹)
Percent	87.3	–	12.7	–	–	–	–	–
Construction:								
Employment	16,927	6,288,743	(¹)	(¹)	(¹)	(¹)	86,317	78,928
Percent	.3	97.2	–	–	–	–	1.3	1.2
Manufacturing:								
Employment	(¹)	(¹)	16,502,531	(¹)	31,444	147,887	(¹)	128,670
Percent	–	–	98.2	–	.2	.9	–	.8
Trade, transportation, and utilities:								
Employment	(¹)	1,028	70,766	4,360,015	6,592,520	14,381,315	(¹)	125,292
Percent	–	.0	.3	17.1	25.8	56.3	–	.5
Information:								
Employment	(¹)	(¹)	751,927	1,670,345	(¹)	1,224	9,221	1,262,674
Percent	–	–	20.3	45.2	–	.0	.2	34.2
Financial activities:								
Employment	(¹)	(¹)	(¹)	37,900	(¹)	25,055	6,881,809	671,353
Percent	–	–	–	.5	–	.3	90.4	8.8
Professional and business services:								
Employment	15,660	66,252	613,021	657,832	155,220	373,538	431,577	14,172,829
Percent	.1	.4	3.7	4.0	.9	2.3	2.6	86.0
Education and health services:								
Employment	(¹)	(¹)	4,421	101,245	(¹)	(¹)	(¹)	14,602,041
Percent	–	–	.0	.7	–	–	–	99.3
Leisure and hospitality:								
Employment	(¹)	(¹)	(¹)	24,052	(¹)	8,147,235	8,403	3,402,214
Percent	–	–	–	.2	–	70.3	.1	29.4
Other services:								
Employment	(¹)	(¹)	12,805	5,145	(¹)	6,207	103,269	3,614,016
Percent	–	–	.3	.1	–	.2	2.8	96.5

¹Less than 1,000.

NOTE: Dash indicates not calculated because employment is less than 1,000.

consists mainly of the logging industry. Note, too, that manufacturing under NAICS is not the same as it was under the SIC system; the major differences are that logging activities and publishing were moved to other categories and dental laboratories and retail bakeries were relocated from the service-producing industries.

The new information supersector gains 20.3 percent of its employment from manufacturing, mainly publishing industries. Information also pulls communications from transportation and public utilities, while software publishing, information services including libraries, data processing, and Internet-related activities come from services.

Financial activities gains rental services from services. Leisure and hospitality takes over eating and drinking places from retail trade, accounting for 70.3 percent of the supersector's employment, and receives lodging places from services.

New series code structure on LABSTAT. The series code structure on LABSTAT, the data repository for the Bureau, has changed to accommodate NAICS. As shown in the following example, for series CEU3133151101, the prefix, or first two letters of the series identifier, has changed to CE, to identify

NAICS series for the national CES survey:[12]

Positions	*Value*	*Name of field*
1–2	CE	prefix
3	U	seasonal adjustment code
4–11	31331511	industry code
12–13	01	datatype code

The industry code has expanded to accommodate the longer NAICS code. The fields that indicate whether the data are or are not seasonally adjusted and what the datatype is (all employees, average hourly earnings, and so on) remain unchanged. The SIC series, EE, will remain in the LABSTAT database, but will not be updated.

Other changes released with NAICS

With the conversion to NAICS in the CES national series, the CES program also completed the multiyear process of changing to a probability-based sample, incorporated concurrent seasonal adjustment, and changed the scope and estimation method for the Federal Government series.

Completion of probability sample redesign. With the introduction of NAICS-coded service industries and the release of May 2003 preliminary data in June 2003, the CES program finished the implementation of the probability sample redesign of the national series. Formerly, the series used a quota-based design for all private industries. Toward the completion of the redesign, groups of industries had been phased in with the three previous benchmark releases: wholesale trade in June 2000, the goods-producing industries (mining, construction, and manufacturing) in June 2001, and transportation and public utilities; finance, insurance, and real estate; and retail trade in June 2002.

The final stage of implementing the probability sample resulted in some series-level shifts for (1) production workers and other nonsupervisory workers, (2) women workers, (3) average weekly hours, (4) average hourly earnings, and (5) in manufacturing, average overtime hours. New levels for these series were computed from NAICS probability sample averages. Even NAICS industries that are very close, or identical in composition, to an SIC series were subject to changes in level. When the redesign methodology was incorporated for industries under the SIC system, the first month's redesign estimate had been linked to the final month's estimate produced under the quota sample design so that breaks in series would not occur.[13]

Concurrent seasonal adjustment. With the release of June 2003 CES survey data, the CES program moved to concurrent seasonal adjustment for its national series. In concurrent seasonal adjustment, seasonal factors are developed each month, using the most current data.[14] The CES program uses X-12 ARIMA software (developed by the U.S. Census Bureau) to produce the seasonal factors. Each month, 10 years of historical data are input into the X-12 ARIMA program, along with all new and revised estimates. Previously, current observations were not applied every month; instead, projected factors were calculated just twice a year and applied to the next 6 months of unadjusted data.

The CES data are seasonally adjusted so that they can be analyzed without the effects of movements that regularly occur in certain months of the year, such as hiring in September for students' return to schools. With the normal seasonal patterns removed, the trends can be analyzed for growth or contraction and any irregular movements. Because the CES data serve as a very important economic indicator, it is imperative that the seasonal adjustment methodology give the most accurate picture of movements in the data.

BLS research has shown that there are many advantages to concurrent seasonal adjustment.[15] First, because concurrent seasonal adjustment uses the most recent information available as an input, revisions to the CES data are expected to be smaller than they were under the previous practice of projecting seasonal factors 6 months ahead. Also, with the conversion to NAICS, just 2 years of sample-based NAICS estimates are available. Concurrent seasonal adjustment allows more current NAICS-based estimates to be used in the calculation. These additional observations are important, because the ARIMA program places heavier weight on recent, as opposed to past, observations.

Federal Government scope. The scope and definition of the Federal Government series have changed slightly with the release of NAICS-based data. Previously, the CES national series for the Federal Government was based on counts of employees provided by the Office of Personnel Management (OPM); Federal Government employment was not estimated from a sample. The OPM counts of Federal Government employees are for the end of the month; by contrast, the reference period for all other CES series is the pay period that includes the 12th day of the month. In addition, the OPM counts exclude some workers, mainly Department of Defense employees paid from nonappropriated funds.

With the release of the May 2003 CES data, Federal Government employment estimates were produced from a sample; the estimates will be benchmarked annually to Unemployment Insurance tax records, an approach that is consistent with current CES practices used to produce other estimates.[16] The new series includes the workers paid from nonappropriated funds who were excluded from the OPM counts; it will continue, however, to exclude the military, as well as employees from the Central Intelligence Agency, the National Security Agency, and the Defense Intelligence Agency. The Federal Government historical series has been adjusted to reflect this change in scope.

WITH THE RELEASE OF DATA IN JUNE 2003, the CES survey for the national series underwent its most significant changes ever since the Bureau of Labor Statistics began collecting monthly data on employment and payrolls in 1915. The movement to NAICS will provide data that better reflect today's economy, with an emphasis on new, emerging, high-technology, and service-providing industries. In addition to the conversion to NAICS, the CES program completed the transition to a probability-based sample and now incorporates concurrent seasonal adjustment for the national series. All these changes will provide more accurate and relevant statistics on employment, hours, and earnings of the Nation's workers. ☐

Notes

[1] Data users should keep in mind that the national estimates are independently derived and that the State and Area estimates are derived individually by each State. Thus, the sum of the States' employment totals does not, in general, add up to the national total; in other words, neither of the two totals is forced to equal the other.

[2] See Molly E. Barth, "Recent changes in the State and Area Current Employment Statistics survey," this issue, pp. 14–19.

[3] See *North American Industry Classification System, United States, 2002* (Executive Office of the President, Office of Management and Budget, 2002). For more information on the implementation of NAICS in other BLS programs, see James A. Walker and John B. Murphy, "Implementing the North American Industry Classification System at BLS," *Monthly Labor Review*, December 2001, pp. 15–21.

[4] See Barth, this issue, pp. 14–19, for information on the State and Area series reconstruction.

[5] Ratios were applied for professional and business services, education and health services, leisure and hospitality, and other services through February 2002, because the probability sample was not fully enrolled in 2001.

[6] For more details on the reconstruction methodology, see "BLS Establishment Estimates Revised to Incorporate March 2002 Benchmarks," *Employment and Earnings* (Bureau of Labor Statistics, June 2003), pp. 3–19; on the Internet at **http://www.bls.gov/web/cesbmart.htm**.

[7] For information on the publication criteria for the State and Area series, see Barth, this issue, pp. 14–19.

[8] A *datatype* is the type of data requested—for example, data on all employees. A complete list of datatype codes is given on the Internet at **http://ftp.bls.gov/pub/time.series/ce/ce.datatype**.

[9] For example, 97.26 percent of employment in *sporting goods and bicycle shops*, SIC 5941, went to *sporting goods stores*, NAICS 451110. The employment from the SIC industry makes up 97.45 percent of the employment in NAICS 451110; therefore, the two series are 94.78 percent interchangeable ($.9726 \times .9745 = .9478$).

[10] For details regarding State and Area published levels, see Barth, this issue, pp. 14–19.

[11] In the industry citations that follow, italics denote official CES industry titles.

[12] The seasonal adjustment code is s for seasonally adjusted, u for unadjusted (not seasonally adjusted); a list of industry codes is given on the Internet at **http://www.bls.gov/ces/cesseriespub.htm**. (See Barth, this issue, pp. 14–19, for the corresponding changes to the State and Area code structure.)

[13] For a description of the probability sample redesign for the State and Area series, see Barth, this issue, pp. 14–19.

[14] For details on seasonal adjustment of State and Area data, see Barth, this issue, pp. 14–19.

[15] Jurgen Kropf, Christopher Manning, Kirk Mueller, and Stuart Scott, "Concurrent Seasonal Adjustment for Industry Employment Statistics," paper presented at Joint Statistical Meetings of the American Statistical Association, the International Biometric Society, the Institute of Mathematical Statistics, and the Statistical Society of Canada, New York, August 11–15, 2002.

[16] For further information on the estimation of Federal Government statistics, see the technical notes in *Employment and Earnings* (Bureau of Labor Statistics, June 2003).

NAICS 2002

The U.S. Department of Commerce, National Technical Information Service (NTIS) has available the *North American Industry Classification System 2002*.

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