

Introducing the North American Industry Classification System

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Since the 1930s, Economic Census data have been published based on the Standard Industrial Classification (SIC) system, developed and maintained by the Office of Management and Budget (OMB). The decision by OMB to replace the SIC with the new North American Industry Classification System (NAICS) has had a profound effect on planning, data collection, data processing, and publication activities of the Economic Census. It was necessary to design new and different forms, expand the kinds of questions included on the forms, canvass a larger number of companies to request classification information, and develop a process for recoding over five million business establishments to a NAICS basis.

On April 9, 1997, the Office of Management and Budget (OMB) announced its decision to adopt the North American Industry Classification System (NAICS pronounced Nākes) as the industry classification system used by the statistical agencies of the United States. NAICS replaces the 1987 Standard Industrial Classification (SIC).

NAICS is a unique, all-new system for classifying business establishments. It is the first economic classification system to be constructed based on a single economic concept. Economic units that use like processes to produce goods or services are grouped together. This "production-oriented" system means that statistical agencies in the United States will produce data that can be used for measuring productivity, unit labor costs, and the capital intensity of production; constructing input-output relationships; and estimating

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employment-output relationships and other such statistics require that inputs and outputs be used together.

NAICS is the first-ever North American industry classification system. The system was developed by the Economic Classification Policy Committee (ECPC), on behalf of the OMB, in cooperation with Statistics Canada and Mexico's Instituto Nacional de Estadística, Geografía e Informática (INEGI) to provide comparable statistics across the three countries. For the first time, government and business analysts, using the system, will be able to compare directly industrial production statistics collected and published in the three countries. In addition to providing the means to compare data across the three North American countries, NAICS also provides for increased comparability with the International Standard Industrial Classification System (ISIC, Revision 3), developed and maintained by the United Nations.¹

NAICS responds to increasing and serious criticism about the SIC. It reflects the structure of today's economy in the United States, Canada, and Mexico, including the emergence and growth of the service sector and new and advanced technologies. It is a flexible system that allows each country to recognize important industries below the level at which comparable data will be shown for all three countries.

The recognition of NAICS United States as the official classification system to be used by the U.S. statistical agencies is the culmination of a multi-year review by the ECPC of economic classifications, business data users, and future information needs. The ECPC established seven interagency subcommittees, representing nineteen federal government agencies, to create the new system in consultation with U.S. data users and in cooperation with staff from the statistical agencies of Canada and Mexico.

DEVELOPMENT OF NAICS

The SIC, used since the 1930s, was developed by an Interdepartmental Committee on Industrial Statistics, established by the Central Statistical Board of the United States. Its charge was "to develop a plan of classification of various types of statistical data by industries and to promote the general adoption of such classification as the standard classification of the Federal Government."² That List of Industries for manufacturing, published in 1938, and the 1939 List of Industries for nonmanufacturing industries, completed in 1939, became the first Standard Industrial Classification (SIC) for the United States.

The SIC was established to promote uniformity and comparability of data collected and published by agencies within the U.S. government, state agencies, trade associations, and research organizations. It was developed as an establishment based industry classification system that classified each establishment (defined as a single physical location at which economic activity occurs) according to its primary activity. The SIC covered the entire field of economic activities by defining industries in accordance with the composition and structure of the economy.

Since the 1930s, the SIC has been revised periodically to reflect changes in the economic structure of the United States. New industries were added and small, declining industries deleted or combined with other activities. However, the overall structure of the SIC remained essentially unchanged since the 1930s. The SIC was last revised in 1987, when approximately 20 new service industries were added to the SIC and a few

new industries were added to manufacturing to reflect technological changes occurring in that sector.

By the early 1990s, many data users and analysts were criticizing the SIC as outmoded and not reflective of the economy of the United States. The adoption of the North American Free Trade Agreement underscored the need not only to develop a new system, but also to develop that system in cooperation with Canada and Mexico. In early 1992, OMB established the ECPC, comprised of representatives from the Bureau of Economic Analysis that chaired the committee, the Bureau of the Census, and the Bureau of Labor Statistics, and charged it with a “fresh slate” examination of economic classifications to determine if a new system should be developed and whether or not that new system should be based on an economic concept. The ECPC developed issue papers and consulted with the statistical agencies of Canada and Mexico regarding their interest in developing a common system among the three countries. In July 1994, OMB announced its intention to develop a new system, based on a production-oriented concept and in cooperation with INEGI and Statistics Canada. The ECPC solicited proposals for new industries from data users and in consultation with INEGI and Statistics Canada developed NAICS.^{3, 4}

HOW IS NAICS DIFFERENT FROM THE SIC?

NAICS is based on a consistent, economic concept. Establishments that use the same or similar processes to produce goods or services are grouped together. The SIC, developed in the 1930s and revised periodically over the past 50 years, was not based on a consistent economic concept. Some industries are demand based while others are production based.

NAICS recognizes the changing and growing services-based economy of the United States and its North American neighbors. NAICS includes 1,169 industries of which 565 are service-based industries. The SIC had 1,004 industries, of which 416 were service-related industries. Three hundred and fifty eight new industries are recognized in NAICS, 250 of which are services producing industries. There are 20 sectors in NAICS of which 16 are services related. The SIC had 10 divisions, of which five were service-related. Table 1 shows the relationship between NAICS sectors and SIC Divisions.

NAICS provides for comparable statistics among the North American countries. In addition, it provides for more comparable information with ISIC. The SIC did not.

NAICS is a six-digit system that provides for comparability among the three countries at the five-digit level. The SIC was a four-digit system that was not linked in any way to the systems of Canada and Mexico. A six-digit system was adopted for NAICS to provide for increased flexibility in the system. NAICS allows each country to recognize activities that are important in the respective countries, but may not be large enough or important enough to recognize in all three countries. The sixth digit is reserved for this purpose.

The nomenclature of the groupings within the system is different in NAICS. NAICS calls the highest level of aggregation in the system a sector; the SIC referred to this grouping as a division. Other changes have been made to the nomenclature as shown in Table 2.

Table 1
NAICS vs. SIC Sectors

<i>NAICS SECTORS</i>	<i>SIC DIVISIONS</i>
Agriculture, Forestry, Hunting, and Fishing	Agriculture, Forestry, Hunting, and Fishing
Mining	Mining
Utilities	Transportation, Communications and Public Utilities (pt)
Construction	Construction
Manufacturing	Manufacturing
Wholesale Trade	Wholesale Trade
Retail Trade	Retail Trade
Accommodation and Food Services	
Transportation and Warehousing	Transportation, Communications, and Public Utilities (pt)
Information	Services
Professional, Scientific, and Technical Services	
Administrative Support; Waste Management and Remediation Services	
Educational Services	
Health Care and Social Assistance	
Arts, Entertainment, and Social Assistance	
Other Services (except Public Administration)	
Finance and Insurance	Finance, Insurance, and Real Estate
Real Estate and Rental and Leasing	
Public Administration	Public Administration
Management of Companies and Enterprises	

WHAT ARE SOME OF THE IMPORTANT CHANGES IN NAICS?

Manufacturing

The Manufacturing sector is reorganized and resequenced to achieve comparability with Canada and Mexico. Seventy-nine new industries are recognized and another 186 are revised. In all, there are 473 NAICS industries in manufacturing as compared with 459 in the 1987 SIC. The most significant change to manufacturing is the creation of the Computer and Electronic Product Manufacturing subsector. This new subsector brings together those establishments engaged in the production of computers, computer peripherals, communications equipment, similar electronic products, and the components for such products. The subsector was created because of the economic significance these industries have obtained, because their rapid growth suggests that the products of these industries will

Table 2
NAICS vs. SIC: Structure and Nomenclature

<i>NAICS</i>		<i>SIC</i>	
2-digit	Sector	Division	Letter
3-digit	Subsector	Major Group	2-digit
4-digit	Industry Group	Industry Group	3-digit
5-digit	NAICS Industry	Industry	4-digit
6-digit	National IndustryN/	N/A	N/A

become even more important to the economies of the North American countries, and because the production processes of the establishments in these industries are fundamentally different from the production processes for other machinery and equipment.

Information

Perhaps the most important change in NAICS is the recognition of a new Information sector. This new sector includes those establishments that create, disseminate, or provide the means to distribute information. It also includes establishments that provide data processing services. Industries included in this new sector are newspaper, book, and periodical publishers, previously included in the manufacturing sector in the SIC; software publishers, previously included in services; broadcasting and telecommunications producers and distributors, previously included with utilities and transportation; and motion picture and sound recording industries, information services, and data processing services, previously included in services.

There are 34 industries included in this new sector, 20 of which are new. Some of the new industries include paging, cellular and other wireless telecommunications, and satellite telecommunications.

Health and Social Assistance

This new sector recognizes that it is sometimes difficult to distinguish between the boundaries of health care and social assistance; therefore, NAICS groups these industries together in a new Health and Social Assistance sector. The industries are grouped in order from those providing the most intensive type of health care to those providing minimal health care with social assistance to those providing only social assistance.

There are 39 industries in this new sector, 27 of which are new. Some of the new industries include HMO Medical Centers, Family Planning Centers, Diagnostic Imaging Centers, Continuing Care Retirement Communities, and Community Food Services.

Retail and Wholesale Trade

NAICS redefines the boundaries between Retail and Wholesale Trade. The new NAICS definition emphasizes what the establishment does, rather than to whom it sells. Retailers are defined as those establishments that sell merchandise, generally without transformation, and attract customers using methods such as advertising, point-of-sale location, and display of merchandise. A store retailer has a selling place open to the public; merchandise on display or available through sales clerks; facilities for making cash or credit card transactions; and services provided to retail customers.

Wholesale establishments, on the other hand, are primarily engaged in selling or arranging the purchase or sale of: (a) goods for resale, (b) capital or durable nonconsumer goods, and (c) raw and intermediate materials and supplies used in production. Wholesalers normally operate from a warehouse or office and are characterized by having little or no display of merchandise. In addition, neither the design nor the location of the premises is intended to solicit walk-in traffic. Wholesalers also do not normally use advertising directed to the general public.

The 1987 SIC defined retailers as those establishments that sold primarily to consumers while wholesalers were those establishments that sold primarily to business customers. The distinction between the boundaries of the two SIC divisions was based on class of customer rather than the selling characteristics of the establishment.

Another major change to the retail trade sector is the removal of restaurants from retail trade. Restaurants are combined with accommodations to form a new sector in NAICS, Accommodation and Foodservices. Restaurants accounted for about 10% of retail trade as defined by the 1987 SIC.

Auxiliary Establishments

Auxiliary establishments are those establishments that primarily produce support services for other establishments of the enterprise. Generally, these support services are not intended for use outside of the enterprise. In NAICS, these establishments are classified according to the establishment's primary activity, that is if the establishment is providing data processing services for the enterprise, the establishment is classified in NAICS 51421, Data Processing Services, or if the establishment is the head office of the enterprise, it is classified in the new NAICS industry 551113, Corporate, Subsidiary, and Regional Managing Offices. In the 1987 SIC, each of these establishments was classified according to the primary activity of the establishment for which the support activity was performed. In the above example, if the support unit primarily served an automobile manufacturing establishment, then the support establishment was classified as an automobile manufacturer.

The SIC, however, treated the production of goods for other establishments of the same enterprise differently. If a manufacturing establishment produced goods for use within the enterprise, the manufacturing establishment was classified according to its primary activity, not the primary activity of the establishment it served. This different treatment of service producing versus manufacturing auxiliary establishments was inconsistent and NAICS recognized this inconsistency. NAICS classifies auxiliary establishments based on what they do, not on whom they serve. The production oriented concept of NAICS mandated this change.⁵

This change will result in significant shifts in employment data. In 1992, Census data showed over 1,000,000 auxiliary employees assigned to manufacturing and over 840,000 auxiliary employees assigned to retail trade. These employees will most likely move to either the Management of Companies and Enterprises sector; the Warehousing and Storage subsector; the Computer Systems Design and Related Services subsector; the Accounting, Tax Preparation, Bookkeeping and Payroll Services subsector; or some other services related subsector. For the 1997 Economic Census, these auxiliary establishments will be dual coded by primary activity and by whom they serve. The data will be shown separately to provide data users with the necessary links to prior information.

IMPLEMENTING NAICS IN THE 1997 ECONOMIC CENSUS

The Economic Census is the first program in the Census Bureau to implement NAICS. Staff began planning for NAICS implementation even before the final structure of NAICS was approved. It was necessary to make decisions on content of the Census, forms design, and areas of responsibility before the final structure was set. These early planning sessions

ensured that NAICS-based Economic Census data could be published in January 1999, giving data users their first glance at the economy according to NAICS.

1997 Economic Census Content

The 1992 Economic Census included activities accounting for about 98% of Gross Domestic Product. Activities excluded were agriculture (the Census of Agriculture covered agricultural related activities, except for agricultural services; forestry; and fishing, hunting and trapping); large certificated air carriers; railroad transportation; U.S. Postal Service; elementary and secondary schools; colleges and universities; political organizations; and religious organizations. Based on funding expectations, it was determined early in the census planning process that the scope of the 1997 Economic Census would remain the same as 1992. Even though NAICS moved activities from sectors that were covered by the census to sectors that were not and from sectors that were not previously covered by the census to those that were traditionally covered, funding constraints would not permit an expansion into previously uncovered areas. Therefore, activities such as veterinary services and landscape services that were moved from agricultural services to professional and support services are not included in the 1997 Economic Census. Conversely, logging, which was moved from manufacturing to agriculture, continues to be covered, at least for the 1997 Census.

Refile Survey

In January 1996, a Refile Survey was conducted to collect information necessary to ensure that establishments were mailed the correct Economic Census form. Establishments included in the refile were those: (1) for which the Bureau did not have enough information to assign a NAICS code and (2) which might be moving to a different sector in NAICS. Both conditions had to be met to be included in the refile survey. For example, NAICS includes bakeries that bake on the premise in manufacturing while those that do not bake on the premise remain in retail. In the 1987 SIC, all bakeries were included in retail trade. There was no information in the business register file to determine if bakeries would remain in retail (not baking on premises) or move to manufacturing (baking on premises). Retail bakeries met both of the conditions to be included in the refile survey. Likewise, the redefinition of wholesale and retail trade meant that establishments would be moving between the two sectors based on their method of selling. Like retail bakeries, the business register did not contain the information necessary to determine in which sector selected retail/wholesale establishments should be included.

Seventeen discrete forms tailored to different activities were designed and mailed to 215,000 single establishment companies that met the above criteria. Specific questions pinpointing new or redefined NAICS activities were asked to ensure proper NAICS coding of the establishment so that it would receive the correct census form.

Multi-establishment companies that met the criteria for inclusion in the refile survey were queried via the 1996 Report of Organization survey. Approximately 60,000 multi-establishment companies received this form. For establishments whose activities were affected by NAICS, companies were asked the same type of questions included on the

single-establishment company form. Based on the information provided in that survey, the correct NAICS code and, thus, the correct census form were determined.

Over 90% of establishments canvassed by the Refile Survey responded. As a result of that refile survey, the following changes were identified:

- Almost 16,000 merchant wholesalers were reclassified as retailers;
- Some 2,200 retailers were reclassified as wholesalers;
- Approximately 2,100 retail bakeries were moved from retail to manufacturing;
- About 315 tire rebuilding and recapping establishments were moved from wholesale to manufacturing;
- Almost 2,200 pawn shops were moved from retail to finance; and
- Over 3,500 ambulance service establishments were moved to health services from transportation.

Forms Design and Mail-Out

Over 450 separate forms, tailored to individual industries, were designed for collecting information in the census. These forms look much like the 1992 forms in that 1987-based SIC codes are used to collect the data. However, all of the forms include information needed to recode the establishment to a NAICS basis. In the manufacturing sector, additional detailed product codes were added; in the retail/wholesale sector, new merchandise and commodity lines were added, along with additional check boxes requesting kind of business and type of activity information; and, in the services sector, additional check boxes and source of receipts data were added, all to ensure that the proper NAICS code could be assigned once the data were received.

Approximately 5.2 million business establishments were mailed some type of census form. To reduce reporting burden, short, easy-to-complete forms with preprinted check box questions designed to obtain detailed classification information were mailed on November 3, 1997 to about 1.4 million small business establishments. Another 200,000 small, birth (new) establishments were mailed these short classification forms the end of November. Firms that received these forms were single-establishment companies, generally with less than 10 employees if a manufacturer and less than five employees if nonmanufacturing, for which no classification information was available. The primary goal of these classification forms was to assign a correct NAICS code. Data for these establishments are obtained from administrative records data reported to other government agencies. In 1992, only about 500,000 classification forms were sent; the adoption of NAICS and the need to assign a new classification code to each business establishment, whether large or small, almost tripled the number of these forms that were mailed.

Twenty-eight different classification forms, tailored to individual industries, were developed. There were 26 services forms used, one general form, and one manufacturing form. Even though only one manufacturing form type was used, it was a custom imprinted form with about 500 variations to the questions asked.

The remaining establishments received one of the approximately 425 longer Economic Census forms. These forms were mailed during the week of December 15 and were due back to the Bureau on February 15.

Recoding Establishments to a NAICS Basis

The Census Bureau developed a unique system for implementing NAICS into the Economic System. The “bridge code system” links the information collected in the 1992 Economic Census to the 1997 Economic Census data that will be published based on NAICS. Bridge codes facilitate the collection and publication of data on both a NAICS and SIC basis, allowing the Census Bureau to create the bridge tables in which both NAICS and SIC data are published.

An example will better explain the system. SIC industry 7299, Miscellaneous Personal Services, was split into some of the following NAICS industries as follows:

- Diet and Weight Reducing Services (NAICS 812191);
- Formal Wear and Costume Rental (NAICS 53222);
- Babysitting Services (NAICS 62441);
- Personal Care Services (NAICS 812199); and
- All Other Miscellaneous Personal Services, NEC (NAICS 81299).

Bridge codes were created within SIC 7299 to implement these NAICS changes. The first four digits of the bridge code relate to the SIC, in this case 7299. Then a unique two digit code was added to the end that relates to the NAICS industry. Bridge code 729970 was assigned to diet and weight reducing services while 729996 represents babysitting services. Any establishment assigned the bridge code 729970 belongs in SIC 7299 and NAICS 812191, while any establishment assigned bridge code 729996 belongs in SIC 7299 and NAICS 62441. These unique codes permits the Census Bureau to publish the Economic Census data on both a NAICS and SIC basis and relate individual establishments to both systems. Table 3 illustrates the bridge codes for each of these 1987 SIC 7299 activities.

Bridge codes were developed using Table 2 as published in the *Federal Register* notice announcing the adoption of NAICS. For each activity that was moved in NAICS, a bridge code was established. In all, almost 5,000 bridge codes were developed to process and publish the census.

PUBLISHING NAICS BASED DATA IN THE ECONOMIC CENSUS

The forms are designed and in the mail and processing systems are complete and waiting. The final curtain on NAICS implementation in the Economic Census will fall when the last bridge table is published in the year 2000. For the first time, data users will have a

Table 3
SIC 7299

<i>Bridge</i>	<i>Description</i>	<i>NAICS</i>	<i>Description</i>
729970	Diet and Weight Reducing Services	812191	Diet and Weight Reducing Centers
729980	Formal Wear and Costume Rental	53222	Formal Wear and Costume Rental
729996	Babysitting Services	62441	Child Day Care Services
729998	Personal Care Services	812199	Other Personal Care Services
729999	All Other Miscellaneous Personal Care Services	81299	All Other Personal Services

look at data based on a restructured industry classification system that was designed to reflect the growing and changing economy of the United States as the year 2000 approaches.

The first glimpse of NAICS based data will be published in early 1999 in a new census report, the *1997 Economic Census Advance Report*. That report will provide information on employment, payroll, receipts, and number of establishments on both a NAICS (sector, subsector, and industry group level) and SIC (division, major group, and industry group) basis.

Beginning in early 1999, geographic and industry data will be published on a NAICS basis only. These reports will provide NAICS data down to the six-digit U.S. industry detail level. A new *Comparative Statistics Report*, scheduled for release in January 2000, will show information on employment, payroll, receipts, and number of establishments on an SIC basis. The *Bridge Between NAICS and SIC Report*, to be issued in March 2000, will include data on a six-digit NAICS by four-digit SIC and four-digit SIC by six-digit NAICS. The tables in this report will provide the link needed to compare data between the two systems.

IMPLEMENTING NAICS IN THE CURRENT PROGRAMS OF THE CENSUS BUREAU

Planning is underway for implementing NAICS in the current programs of the Census Bureau. All current surveys, including the Annual Survey of Manufactures, Annual Survey of Communications Services, and Monthly Retail Sales, will be converted to NAICS beginning with data year 1998. A detailed time schedule has been developed for this implementation. It is shown below:

Manufacturing surveys:

- | | |
|---|----------------|
| • Annual Survey of Manufactures | Data year 1998 |
| • Current Industrial Reports | Data year 1998 |
| • Manufactures Shipments, Inventories,
and Unfilled Orders | Data year 2001 |

Services surveys:

- | | |
|---------------------------|---|
| • Annual Surveys | Data year 1999 (collect
both 1998 and 1999 data) |
| • Retail Trade Monthly | Data year 2001 |
| • Wholesale Trade Monthly | Data year 2001 |

Other Programs:

- | | |
|-------------------------------|---------------------|
| • County Business Patterns | Data year 1998 |
| • Quarterly Financial Report | Data year 2000/2001 |
| • Annual Capital Expenditures | Data Year 1999 |

There are a number of issues under review concerning implementation into the current programs. In the services area, these issues center around the content of the annual current services programs. With the addition of eight new service sectors and 250 new industries, the program must be completely redesigned. Plans include a new Information survey, but the structure and content of the remaining program have not been determined yet.

One of the most important issues in the monthly programs, especially the indicators program that includes retail/wholesale trade and the manufactures shipments, inventories, and unfilled orders survey is the development of a time series necessary to seasonally adjust the data. Decisions on these and other issues will be made by the fall of 1998, in consultation with both public and private data users.

CONCLUSION

The introduction of NAICS into both the Economic Census and current economic programs will have a profound effect on statistics published by the Census Bureau. For the first time, data will be available on the Information sector, service industries never before identified in the SIC will be measured, and statistics published by the Census Bureau will be on a consistent basis with industry data provided by Canada and Mexico's statistical offices. NAICS is forward looking and flexible, anticipating increasing globalization and providing enhanced industry comparability among the NAFTA trading partners while recognizing important national industries and providing for periodic updates through three country review. NAICS recognizes the structural and technological changes occurring in the economies of the three North American countries and provides the means to measure these changes. The Economic Census will provide the very first look at these changes.

NOTES AND REFERENCES

1. The *International Standard Industrial Classification of All Economic Activities, Revision 3* is available from the Statistical Office of the United Nations, New York, New York.
2. Esther Pierce, "History of the Standard Industrial Classification:" (Washington, D.C. Executive Office of the President Office of Statistical Standards, U.S. Bureau of the Budget) (mimeograph).
3. For a detailed discussion of the development of NAICS, see the *Federal Register* (April 9, 1997), pp. 17288–17478.
4. For information regarding purchase of the NAICS Canada and NAICS Mexico manual, contact Statistics Canada, Ottawa, Ontario, Canada, and INEGI, Aguascalientes, Mexico.
5. A complete explanation of the treatment of auxiliaries in all three countries is contained in the paper "The Treatment of Auxiliary Establishments in Industry Classification Systems," by Paula Young and Jack Triplett of the Bureau of Economic Analysis. This paper can be accessed via the Census Internet site <www.census.gov/naics>.