

The Relationship Between The 1990 Census and Census 2000 Industry and Occupation Classification Systems

Technical Paper #65
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Under Special Contract with the U.S. Census Bureau

October 30, 2003

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For electronic versions of these items, see the following files:

TechPaper2000Cover.doc	Cover page.
TechPaper2000Contents.doc	This Table of Contents.
TechPaper2000Text.doc	The Technical Report itself, including Appendices.
TechPaper2000Tab1.xls	Table 1.
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The Relationship Between the 1990 Census and Census 2000 Industry and Occupation Classification Systems

INTRODUCTION

This paper describes the changes in the industry and occupation classification systems used in the 1990 Census of Population and Housing (1990 Census) and the classification systems used in Census 2000. As a result of these changes, many 2000 industry detailed categories and major groups and most 2000 occupation detailed categories and major groups are not comparable to similar categories and groupings in the 1990 and earlier censuses.

The Census Bureau provides data on industries and occupations at several different levels of detail on various data products (also called data sets), which change from census to census. For Census 2000 data analysts can find industry and occupation tables on data sets called Summary File (SF)-3, SF-4, the Equal Employment Opportunity (EEO) File, and Public Use Microdata Samples (PUMS). These products are similar to counterparts produced from the 1990 Census. Some of these 1990 and 2000 products are available on the Census Bureau's website called *American FactFinder* (see factfinder.census.gov).

For Census 2000 the tables found on SF-3 present the industry and occupation data in very aggregated groupings. These tables include "profiles," which show only 13 industry and 6 occupation groups, and "detailed tables," which show 20 industry and 33 occupation groups. In the SF-4 tables the level of detail increases to 90 unique industry and 93 unique occupation categories. The EEO File and "5-percent" PUMS provide data for 471 detailed occupation categories, and finally, the "1-percent" PUMS shows the most detail possible: 509 occupations and 265 industries. For more information about these Census 2000 products and how they compare to their 1990 counterparts, see "Sources of Industry and Occupation Data" below.

Even though the *American FactFinder* and other sources provide data for both the 1990 Census and Census 2000, data analysts cannot compare the industry and occupation categories directly across the two census years. The wording of the categories is different, and, even when the words *appear* to be the same, the definitions of the categories are sometimes different. For example, major parts of "Retail trade" and "Entertainment and recreation services" were defined differently in 1990 than in 2000, even though these words appear in industry tables from both censuses. Another example, "Managers" and "Farming occupations" were defined differently in 1990 than in 2000, even though these words appear in occupation tables from both censuses. These differences were caused by the revisions to the North American Industry Classification System (NAICS) and to the Standard Occupational Classification (SOC). The Census 2000 industry and occupation categories were derived from these two standard classifications, respectively. See the "History" section below for more details.

This report is designed to help analysts compare 1990 and 2000 census data from any of these data products by quantifying the relationship between the two sets of classification systems. Included are detailed tables called "crosswalks," which show the proportional flows for individual industry and occupation categories between the two census years, and tables comparing the different groupings found on SF-3, SF-4, the EEO File, and the PUMS. The Census Bureau derived these proportions from a sample

of actual responses from the 1990 Census and from the *Census 2000 Classified Index of Industries and Occupations*. See the section on the "Creation of the Crosswalks" for more information.

The crosswalks in this report enable analysts to convert the 1990 data at any level of detail into the newer Census 2000 classifications. In theory, it is also possible to convert the 2000 categories into those for 1990 in order to make reverse comparisons over time. This paper does not provide the means to do this reverse conversion for two reasons. First, the conversion factors used in these crosswalks were based on a sample of cases from each category in the 1990 Census; these records were re-coded into the 2000 classifications. This sample, however, did not provide enough cases for each 2000 category (especially for occupations) to make an accurate and meaningful conversion from 2000 back to 1990. Second, the Census Bureau prefers to move forward to the present and express the labor force of 1990 in 2000 terms, since Census 2000 is more up-to-date.

Ideally, different crosswalks could be created based on many different variables, including geography, sex, and race. For example, changes in industrial and occupational distributions are different in New York compared to Kansas, and are different for men and women. To create many different crosswalks depending on all characteristics, however, would require a very large sample controlled for all these variables. Neither financial nor human resources are available to create and analyze such a large sample. For this reason, all the crosswalks shown in this paper are national in scope and treat both sexes and all races equally.

Nevertheless, data users may want to do similar comparisons for sub-national geographic areas, such as states, counties, etc., especially for large groupings of industries and occupations such as those shown on Census 2000 SF-3. For this reason, the Census Bureau is also providing SF-3 "Templates," which contain the conversion factors used to create the U.S. crosswalks that accompany this paper. Using these Templates, data users can apply national conversion factors to any 1990 industry or occupation data from SF-3. Data users, however, will have to apply the same conversion factors and distributions to all levels of geography, both sexes, and all other characteristics, even though this is not a perfect method for comparing industry and occupation data in all circumstances.

HISTORY

From 1940 to 1990, the basic structure of the industry classification system used in the censuses of population was generally the same. The census system in each of these years was based on the structure of the Standard Industrial Classification (SIC) updated during each decade and used throughout the federal government during that time period. The occupation classification system had a similar structure from 1940 to 1960. For 1970 the occupation classification was enlarged by almost 50 percent from 297 categories in 1960 to 441 categories in 1970 because of requests from data users for more detail. The 1980 system had 503 categories, an increase of 14 percent from 1970. The 1980 occupation classification also was a major departure from earlier censuses because of the adoption of the Standard Occupational Classification (SOC) by federal agencies, which became the model for the 1980 census classification. The 1990 system had 501 categories, also based on the 1980 SOC. There was not much change, therefore, between the 1980 and 1990 census occupational classifications. The Census Bureau has from time to time published technical papers containing crosswalk tables that convert the industry and occupation data from one of these past censuses to the classification systems of the previous or subsequent census.¹

¹ Previous examples are Census Bureau Technical Paper 59: *The Relationship Between the 1970 and 1980 Industry and Occupation Classification Systems* (issued February 1989); Technical Paper 26: *1970 Occupation and Industry Classification*

After 1990, however, the crosswalks provided in this paper became necessary even more than in previous censuses, because for the first time both the standard industry and occupation classifications underwent major revisions in the same decade. The 1987 Standard Industrial Classification (SIC) was replaced in 1997 by the North American Industrial Classification System (NAICS), and the 1980 Standard Occupational Classification (SOC) was replaced in 1998 by a completely revamped SOC. The 1998 SOC then evolved into a slightly modified update in 2000. The 1997 NAICS and 2000 SOC, respectively, provided the structure for the Census 2000 Industry and Occupation Classifications. The major differences between the 1997 NAICS and 2000 SOC and their previous counterparts became equally major differences between the 1990 Census and Census 2000 classifications. When data users look at census data from 1990 to 2000, therefore, they are faced with apparent changes in the industrial and occupational distributions of the workforce that are due more to classification revisions than to real changes in the workforce itself. Data users need ways to sort out the classification revisions from the real changes. The crosswalks provide them with the means to do so.

REVISIONS TO THE INDUSTRIAL CLASSIFICATION

As mentioned earlier, the Census 2000 industrial classification system was based on the structure of the 1997 NAICS. The NAICS replaced the previously used SIC because rapid changes in the U.S. and world economies brought the SIC under increasing criticism. In July 1992, the Office of Management and Budget (OMB) established the Economic Classification Policy Committee (ECPC), and charged it with a “fresh slate” examination of economic classifications for statistical purposes. The ECPC ultimately joined with representatives from Mexico and Canada to develop the NAICS.

The NAICS provides common industry definitions and replaces the previous industrial classifications for all three North American countries. It groups establishments into industries based on the activities in which they are primarily engaged. It is a comprehensive system covering the entire field of economic activities, producing and non-producing. Two classification principles that had the most impact on the differences between the SIC and NAICS are as follows²:

1. NAICS was erected on a production-oriented or supply-based conceptual framework. This means that producing units that use identical or similar production processes are grouped together in the NAICS.
2. The system gives special attention to developing production-oriented classifications for (a) new and emerging industries, (b) service industries in general, and (c) industries engaged in the production of advanced technologies.

The resulting NAICS arranged industries into 20 sectors, compared to 10 divisions used by the 1987 SIC, and 1,170 detailed categories for the United States. The Census Bureau then aggregated these detailed NAICS categories into 265 detailed census categories within the same 20-sector framework of the NAICS.

Systems in Terms of Their 1960 Occupation and Industry Elements (issued July 1972); and Technical Paper 18: *Changes Between the 1950 and 1960 Occupation and Industry Classification* (issued 1968).

² See Bernan Press: *North American Industry Classification System, United States, 1997* (published 1998).

In the change from the 1990 Census to the Census 2000 industrial classification, there were many detailed categories and parts of detailed categories that shifted between the 1990 and 2000 published data. The people in these categories, in effect, “moved” from one category to another as a result of classification change, rather than due to a real change in the workforce. The adjustments made to the 1990 data in this paper account for these movements of people in these categories, and thereby make the 1990 data comparable to the 2000 data.

The following are some major differences between the 1987 SIC and 1997 NAICS, which in turn are reflected as major differences between the 1990 and 2000 census data:

1. The category “Landscape and horticultural services” was part of the group “Agriculture, forestry, and fishing” in the 1990 classification. Most of the people in this category went to “Landscaping services,” which is part of the “Administrative, support, and waste management services” sector in the 2000 classification.
2. The categories for “Newspaper publishing and printing” and other publishing industries were part of the “Manufacturing, nondurable goods” group in 1990. Most of the people in these industries went to “Newspaper publishers” and “Publishing except newspapers and software,” which are part of the “Information” sector in 2000.
3. People working in travel agencies and bureaus went from the “Transportation” group in 1990 to the “Administrative, support, and waste management” sector in 2000.
4. The “Communications and other public utilities” group in 1990 split primarily into two sectors in 2000: “Utilities” and “Information.”
5. The category “Eating and drinking places” was part of “Retail trade” in 1990. Most of the people in this category went to “Restaurants and other food services” and “Drinking places, alcoholic beverages,” both of which are part of the “Accommodation and food services” sector in 2000.
6. The “Finance, insurance, and real estate” group in 1990 split primarily into two sectors in 2000: “Finance and insurance” and “Real estate, and rental and leasing.”
7. The 1990 group “Business and repair services” split into many parts in the 2000 classification. Many people shifted from this 1990 group into the 2000 sectors “Information,” “Professional, scientific, and technical services,” “Administrative, support, and waste management services,” and “Other services (except public administration).”
8. The “Personal services” group in 1990 split primarily into two sectors in 2000: “Administrative, support, and waste management services” and “Other services.”
9. The category “Theatres and motion pictures” was part of the “Entertainment and recreation services” group in 1990. Most of the people in this category went to “Motion pictures and video industries,” “Sound recording industries,” and “Radio and television broadcasting and cable,” all of which are in the “Information” sector in 2000.
10. The 1990 group “Other professional and related services” split into many parts in the 2000 classification. Many people shifted from this 1990 group into the 2000 sectors “Arts,

entertainment, and recreation,” “Health care and social assistance,” “Professional, scientific, and technical services,” and “Other services.”

REVISIONS TO THE OCCUPATIONAL CLASSIFICATION

The Census 2000 occupational classification system was based on the structure of the 2000 SOC. The 2000 SOC replaced the 1980 SOC to reflect the dramatic changes in the nation’s labor force over the previous two decades. In 1994, the OMB established the Standard Occupational Classification Revision Policy Committee (SOCRPC), and charged it with identifying the major statistical uses of occupational classifications, and creating a classification system that reflects the current occupational structure in the United States. More than 15 federal government agencies participated in this process.

Like the 1980 SOC, the new classification covers all occupations in which work is performed for pay or profit, including work performed in family-operated enterprises by family members who are not directly compensated. Occupations are classified based on work performed and on required skills, education, training, and credentials³. The SOCRPC decided, however, to rearrange the entire structure of the classification rather than to start with the old SOC and simply try to make improvements. For the new SOC, the SOCRPC chose to arrange the world of work into “job families,” in which people who work together are classified together. The end result was truly a major change from the past.

The principle behind the concept of “job families” in the new SOC was to place people who worked together in the same group, regardless of their skill levels. Based on this concept, many occupations that used to be called professionals and technicians now appear together in the same group. For example, physicians, registered nurses, and medical laboratory technicians are all in the same SOC and census major group in 2000. This arrangement differs from that of the old SOC, where these levels of occupations were separate.

On the other hand, while first-line supervisors are found in the same major groups as the workers they supervise, higher management levels are not. Managers are in their own major group. For example, farm managers and self-employed farmers are now under the group for “Managerial occupations” instead of the group for “Farming, fishing, and forestry occupations,” where they were classified in the past.

The resulting 2000 SOC arranged occupations into 23 major groups, compared to 22 divisions used by the 1980 SOC, and 821 detailed categories. The Census Bureau then aggregated these detailed SOC categories into 509 detailed census categories within the same 23-major group framework of the SOC.

In the change from the 1990 Census to the Census 2000 occupational classification, there were many detailed categories and parts of detailed categories that shifted between the 1990 and 2000 published data. The people in these categories, in effect, “moved” from one category to another as a result of classification change rather than due to a real change in the workforce. The adjustments made to the 1990 data in this paper account for these movements of people in these categories, and thereby make the 1990 data comparable to the 2000 data.

The following are some of the major differences between the 1980 and 2000 SOC, which in turn are reflected as major differences between the 1990 and 2000 census data:

³ See Bernan Associates: *Standard Occupational Classification Manual: 2000*; October 2000.

1. There is an increased number of occupations formerly called “professional” and “technical,” especially healthcare and computer-related occupations; the professional and technical occupations are classified together within major groups rather than kept separate from each other.
2. There is an increase in management and service-related occupations.
3. Conversely, there is a decrease in the number of clerical, maintenance, and production occupations.
4. There is no longer a distinction between officials/managers in public administration and officials/managers in the private sector.
5. Farmers and farm managers are now with management occupations rather than with other farming occupations.
6. There is no longer a separate group for private household workers; they are now in different groups with similar occupations.
7. Helpers are now in the same major groups as the occupations they help.

CREATION OF THE CROSSWALKS

General Approach

There are two basic methods for creating crosswalks that we can use to examine the flows from each industry and occupation code in one classification, e.g., 1990, into each code in the other classification, e.g., 2000.

One helpful way to look at these flows is to examine the industry and occupation “titles” found in the *Alphabetical and Classified Indexes of Industries and Occupations* published for both censuses. The matching of industry and occupation titles provides information about the intended, or “ideal,” changes from each industry and occupation code of one classification into each industry and occupation code of the other classification. Coding error is minimal. However, this matching does not provide data on the distribution of actual *people* being moved from one category to another.

The other method is to “double-code” a sample of census data into both the 1990 and 2000 industry and occupation classifications. This process puts each person in the sample into both classification sets. This process thereby provides information on the proportion of actual workers that went from one census category into another. But unfortunately, any coding process involves coding error. In both censuses, these errors average about 7-8 percent for detailed industry codes, and 10-12 percent for occupation codes. These errors contaminate the comparisons across classifications, because they create false combinations of 1990 and 2000 codes.

Given that both the double-coded samples and the index titles methods have advantages and disadvantages by themselves, therefore, the crosswalks presented in this paper attempt to merge the best of both methods. The Census Bureau used information from both sources to calculate conversion factors,

apply those factors to census data from the 1990 Census categories, make those categories comparable to the Census 2000 categories, and redistribute the 1990 data based on these factors.

Census 2000 Classified Indexes

For every census the Census Bureau has maintained lists of very detailed industry descriptions and occupation titles in its *Alphabetical and Classified Indexes of Industries and Occupations*. The indexes developed for Census 2000 contain more than 21,000 industry lines and 31,000 occupation lines. Each index was an update of the corresponding index from the previous census; for each census, obsolete industries and occupations were removed, and new ones were added.

Because the 2000 indexes were derived from the 1990 versions, therefore, all the industry and occupation titles that carried over from 1990 to 2000 contained both the 1990 and 2000 census codes. In effect, each of these industry and occupation lines was “double-coded” into both census classifications. This process is similar in concept to the “double-coding” described above for a sample of census responses.

The classified indexes sort the industry and occupation lines by census code. Before Census 2000 was conducted, the Census Bureau cross-tabulated the number of lines assigned to each 1990 census code by the number of lines assigned to each 2000 census code. The resulting matrix provided a first look at the distributions of each 1990 code into the new 2000 classification systems, and vice versa.

When Census Bureau staff examined the 1990-2000 distributions in this matrix, they found a number of anomalies. That is, some lines assigned to a 1990 code were apparently going to 2000 categories that were logically inconsistent with the 1990 categories. This examination uncovered errors in the indexes that the Census Bureau could correct before using those materials for processing actual census responses. Once the appropriate index lines were corrected, the cross-tabulation of 1990 by 2000 codes was re-done. The result was a set of “crosswalks” of detailed industries and occupations **expected** to go from each 1990 category to each 2000 category.⁴

We use the word “expected” here because three situations could have an effect on the actual distributions of industries and occupations between census classifications in tabulated data:

1. The crosswalks based on the index show the distribution of industry and occupation **titles**, but not necessarily the distribution of **people** using those titles. For example, the index might show that half of the titles for a specific 1990 occupation category went to a new 2000 category (and the other half went to a different 2000 category). But if one of those occupation titles was very common and was actually reported by 90 percent of the people in the 1990 category, then a far greater percentage than 50 percent of the people in the 1990 category went to the new (first) 2000 category. Example 2 for Table 2 under the section “Explanation of the Tables”, provides a real example of how the distribution of people can differ from the distribution of occupational titles for the same 1990 category.
2. The index crosswalk was based only on industry and occupation titles that were common to both the 1990 and 2000 indexes. New lines added to the 2000 indexes were not coded back to the 1990 classifications. Therefore, people who reported one of the new titles could get a 2000 code that

⁴ The crosswalk of occupation index titles is available from the Census Bureau as an Access database. This database provides tables that show the distributions of occupation titles from the 1990 Census classification to the SOC to the Census 2000 classification, and vice versa.

would have been assigned to an “unexpected” 1990 category if the title had existed in the 1990 index.⁵

3. The 2000 occupation index was affected by changes to the 2000 industry classification that occurred, in turn, as a result of the new NAICS. Many occupational titles can go to different occupation categories, depending on the industry in which that occupation is found. For example, a “chaser” in the logging industry goes to a different occupation category (“logging workers”) than a “chaser” in a finance company (the category for “bill and account collectors”). The assignment of these titles from the index depends, therefore, on what the Census Bureau calls “industry restrictions” provided for each line in the index. Changes to these industry restrictions caused by changes in the NAICS had subtle effects on the distributions between 1990 and 2000 occupation categories that are not always reflected in the occupation index crosswalks.

In addition to showing the number of lines in the indexes going from one category to another, the index crosswalks also computed the expected percentage of each 1990 category going to each 2000 category. These distributions of numbers and percentages provided information that helped determine the accuracy of the double-coding of the sample of 1990 industry and occupation responses, as described below.

Double-coded 1990 Census Sample

The 1990 Census Sample used for this project was selected so that it would contain at least 200 records for each 1990 3-digit industry and occupation code assigned to the “experienced civilian labor force (ECLF).” The experienced civilian labor force, for purposes of this analysis, consists of all non-military individuals who were either employed or unemployed at the time of the census enumeration, and who provided a description of their current job, or (if unemployed) their most recent job held in the 5 years prior to the census.

Some small occupation categories had fewer than 200 people coded nationwide, so all records for those codes were taken. Each individual code, therefore, had a sample that represented all the people in the ECLF assigned to that code in the 1990 census. The entire sample contained 146,686 records, of which 48,784 were used for the analysis of the industry classifications, and 97,902 were used for analyzing the occupation classifications.

Each record contained the industry and occupation codes originally assigned in the 1990 Census. Over the next 10 years, all the records in sample were re-coded several times, still using the 1990 classifications, by the Census Bureau’s current survey coders and Census 2000 coders in its Jeffersonville, Indiana Processing Office (the National Processing Center, or NPC), and by staff in the Census Bureau’s headquarters in Suitland, Maryland. For each record in sample, the “majority code,” in other words, the industry or occupation code assigned most frequently among the multiple codes, was considered “correct” for initial analysis purposes.

The Census 2000 coding staff at the NPC then re-coded each record in sample twice using the Census 2000 classifications. Lack of resources at the time prevented a third coding, which would have provided a

⁵ Note that in every census a code is assigned to every response, even if the respondent’s specified industry or occupation is not listed in the index. Sometimes coding staff can derive a code from other information that the respondent provides, or simply from an educated judgment. In census processing, this kind of coding-with-judgment is usually performed in a step called “problem referral.”

“majority” choice in most cases when coders assigned different codes to the same records. So the first of the two codes assigned was used for initial analysis purposes.

The selected 1990 and 2000 codes were then cross-tabulated against each other, creating a matrix of 1990-by-2000-code combinations similar in concept to the cross-tabulation of codes assigned to the index lines described in the section above. The distributions of responses to these 1990-by-2000 combinations were then compared to their 1990-by-2000 counterparts created from the 2000 classified index.

These comparisons exposed the fact that coding errors can contaminate the analysis of changes in the labor force from the 1990 classifications to the 2000 systems. Remember that the index crosswalks provided a set of expected changes from 1990 to 2000. The distributions of actual responses, however, often did not match the expected distributions as measured by the index. Many combinations of 1990 and 2000 codes appearing in the 1990 Census Sample did not appear at all in the index crosswalk, and made no logical sense together.

Census Bureau staff identified and examined many of the worst discrepancies between the two sets of distributions. Once again, this examination revealed errors in the index that caused coding errors, but were not caught in the original review of the index described above. Fortunately, this first review of the Census Sample occurred before the Census 2000 processing, so the indexes could be repaired in time for the actual census. At the same time, these coding errors plus others that were not caused by the index were corrected in the 1990 Census Sample.

After the census was completed, staff revisited the 1990 Census Sample and once again compared its 1990-2000 distributions (after the revisions resulting from the first review) to those found in the index crosswalks. This comparison instigated a second review of the sample, particularly for those 1990 codes that showed the largest discrepancies between the sample and the index. Over 18,000 of the 146,000+ records in sample were reviewed. This examination corrected more coding errors and deleted records containing responses that were judged to be too vague to code accurately. Most of these deletions had no clear “majority” among the multiple codes assigned over the years since 1990. There were over 5300 records corrected or deleted.

Calculation of the Conversion Factors

Because the index crosswalk represented the expected distribution of the 1990 categories into the 2000 classifications, this source became the starting point for determining which 1990 to 2000 code combinations were “legitimate.” In other words, the starting assumption was that the combination of 1990-2000 codes among the index titles ideally should drive the assignment of those codes to actual census responses.

This assumption, initially eliminated records in the 1990 Census Sample that contained 1990-2000 code combinations that did not appear in the index crosswalk. In other words, the corollary to this assumption was that any records in the 1990 Census Sample that did not contain a “legitimate” 1990-2000 code combination must contain coding errors that make the records ineligible for inclusion in the computation of conversion factors. The factors used to adjust or redistribute the 1990 tabulated data into the 2000 classifications should not make non-logical conversions based on errors in the sample that created those factors.

The second review of the 1990 Census Sample, however, revealed exceptions to this assumption. As described above in the section about the 2000 Classified Indexes, there are legitimate reasons why 1990-2000 code combinations can appear in a sample of responses that do not appear in the indexes of industry and occupation titles. When the review uncovered these exceptions, the records containing those exceptions were restored to the sample, and their 1990-2000 code combinations were deemed “legitimate,” after all.

Using the revised list of legitimate 1990-2000 code combinations, the 1990 Census Sample records for each 1990 code containing these combinations were used to re-tabulate the percentages of each 1990 category going to each 2000 category. These percentages became the conversion factors applied to the entire 1990 ECLF as shown in the tables that accompany this paper.

To a large extent, the analysis of the occupation data shown in this study followed up on a similar analysis done by staff at the Bureau of Labor Statistics (BLS),⁶ who used the same double-coded index of occupations, and the earlier version of the double-coded 1990 occupation sample before the last round of corrections to the sample. Their methodology eliminated many more combinations of 1990 and 2000 codes, particularly when the sample providing those combinations was very small. The final conversion factors shown in this Census Bureau report are much more detailed, and sometimes differ substantially from those shown in the BLS study.

Explanation of the Tables

Tables 1-3 and 8-9 in this report show 1990 census data for the total civilian labor force in terms of the 1990 and 2000 census classification structures. Tables 4-7 and 10-11 show data for the employed. The conversion factors described above are reflected in all the tables, even those that do not display the detailed factors.

Tables 1 and 2 include all the categories assigned to the labor force in each census:

1990 industry: 236
 2000 industry: 265
 1990 occupation: 501
 2000 occupation: 509

Table 1 shows the number of people from the 1990 ECLF in each 1990 detailed census industry category, the number of these people that would be assigned to each 2000 detailed census industry category, and the conversion factors that led to this redistribution of each 1990 category to each 2000 category. Table 2 is the corresponding occupation table. These tables display both a code and a description of each category for both censuses.

Example 1 (Table 1). 1990 Census industry category 272, “Primary aluminum industries (manufacturing)” split into two Census 2000 categories: 73.3 percent went to 2000 category 268, “Aluminum production and processing,” and 26.7 percent went to category 277, “Foundries.”

Example 2 (Table 2). 1990 Census occupation category 106, “Physicians’ assistants,” split into three Census 2000 categories: 35.4 percent went to 2000 category 311, “Physician assistants,” 41.7 percent

⁶ Eck, Alan: Memorandum to Tom Nardone, “Observations on 2000 Census of Population based occupational employment estimates.” Bureau of Labor Statistics internal report, January 24, 2002.

went to category 340, “Emergency medical technicians (EMTs) and paramedics,” and 22.9 percent went to category 365, “Medical assistants and other healthcare support occupations.” Note that this is a good example of a 1990 category for which the 1990 double-coded sample provided a different distribution of **people** than the census index provided of occupational **titles**. The index predicted a 60-20-20 percent distribution of the 1990 Census category 106 to Census 2000 categories 311, 340, and 365, respectively. But the 1990 sample revealed that a much larger proportion of people (41.7 versus 20 percent) in this 1990 category described themselves as EMTs or paramedics instead of as physician assistants, which put them in Census 2000 category 340 instead of 311.

When only one 2000 category appears for a 1990 category in Table 1 and 2, then that entire 1990 category went into a single 2000 category. The conversion factor is 100 percent. Note, however, that the two categories may not necessarily be exactly equivalent. In other words, even though an entire 1990 category went into a single 2000 category, the reverse may not be true. For example, two 1990 categories could merge into one 2000 category; in this example the 2000 category would be equivalent to the combination of the two 1990 categories.

Example 3 (Table 1). 1990 Census industry category 011, “Agricultural production, livestock” went entirely (100 percent) into Census 2000 category 018, “Animal production.” Note, however, that the reverse is **not** true. Most of 2000 category 018 came from 1990 category 011, but some of it came from 1990 category 030, “Agricultural services, n.e.c.,” and from category 032, “Fishing, hunting, and trapping.”

Example 4 (Table 2). 1990 Census occupation category 003, “Legislators,” went entirely (100 percent) into Census 2000 category 003, “Legislators.” The 1990 and 2000 categories, in this example, are truly equivalent: all of the 1990 category went to one 2000 category and the 2000 category came entirely from the one 1990 category. This, by the way, is the only category where the code (003) is the same for both censuses.

In summary, data users sometimes want to know if there are categories between the classifications that are comparable. To help analysts sort out those categories that are the most comparable from 1990 to 2000, the last column in Tables 1 and 2 (comp. score) may show a code from 1 to 3 that designates the following levels:

- 1 = Directly comparable (conversion factor = 100 percent); 96 of the 236 1990 industry codes and 180 of the 501 1990 occupation codes received this score.
- 2 = Estimated to be 95-99.99 percent comparable; 46 industry and 82 occupation codes received this score.
- 3 = Estimated to be 90-94.99 percent comparable; 28 industry and 40 occupation codes received this score.

The code will appear on the lines that display the code combinations with conversion factors equal to 90 percent or higher.

Table 3 is very similar to Table 2, but the 501 occupation categories shown on the 1990 Census Equal Employment Opportunity (EEO) File are distributed into only the 471 civilian occupation categories shown on the Census 2000 EEO File and 5% PUMS (plus one more category for the unemployed who

were not classified by occupation). For Census 2000 the smallest of the 505 detailed civilian occupation categories had to be aggregated into the 471 to avoid the possible disclosure of information about individual respondents. The “smallest” categories are defined as those with fewer than 10,000 people coded nationwide in 2000.

Example 5 (Table 3): For the EEO File and the 5% PUMS, three detailed categories shown in Table 2, 121 – “Mathematicians,” 123 – “Statisticians,” and 124 – “Miscellaneous mathematical occupations,” were combined into one aggregate category, also numbered 124 – “Miscellaneous mathematical science occupations, including mathematicians and statisticians.” As a result, Table 3 shows that the 1990 Census category 067, “Statisticians,” goes entirely (100 percent) into the Census 2000 aggregate category (124). This is a different result from that shown in Table 2, which displays all the detailed categories without any aggregation. For this report, aggregate category codes are shown in parentheses, such as (124), to distinguish them from the detailed categories with the same numeric code.

Tables 4 and 5 convert the 72 industry categories and 94 occupation categories found on the 1990 product called STF-4 to the 90 industry categories and 93 occupation categories found on the equivalent 2000 product called SF-4.

Tables 6 and 7 convert the 20 industry categories and 13 occupation categories found on the 1990 product called STF-3 to the 20 industry categories and 33 occupation categories found on the equivalent 2000 product called SF-3.

Note: the conversion factors and numbers shown in Tables 6 and 7 differ from and replace preliminary counterparts that the Census Bureau published on its website early in 2003. The revisions were due primarily to coding corrections in the double-coded 1990 Census Sample used as the basis for calculating the conversion factors. See the sections above, “Double-coded 1990 Census Sample” and “Calculation of the Conversion Factors,” for more details.

Tables 8 and 9 take all the information provided in Tables 1 and 2 for industry and occupation, respectively, redistribute the 1990 detailed categories into the 2000 detailed categories, and present the adjusted 1990 data side-by-side with the Census 2000 data for the same categories. Since the adjusted 1990 data are stated in 2000 terms, the two sets of data are comparable. Tables 8 and 9 also show the percent change in the labor force from 1990 to 2000 for each detailed category, and for every aggregate category, subtotal, and grouping shown in the various Census 2000 files and publications.

Similarly, Tables 10 (industry) and 11 (occupation) take all the information provided in Tables 4 through 7, redistribute the 1990 Census groupings found on Summary Tape Files 3 and 4 into the Census 2000 groupings found on Summary Files 3 and 4, and present the adjusted 1990 data next to the comparable Census 2000 data for the same categories. Note that these tables present data for the employed instead of the total civilian labor force. Since these figures are derived from Tables 4 through 7, they also reflect revisions made to the conversion factors since similar data appeared on the Census website early in 2003.

DATA HIGHLIGHTS

The data in this section come from Tables 8 and 9. These tables show that the number of people in the civilian labor force increased by 11.5 percent from 123.5 million in 1990 to 137.7 million in 2000.

Industries and occupations showing a percent increase significantly larger than 11.5 percent, therefore, grew at a faster rate than average. The following are highlights of the industry and occupation categories that showed the most change from 1990 to 2000, after adjusting the 1990 data into the 2000 classifications.

Industry

1. Small, new, and residual categories can be affected the most by definition changes. For example, the industry category showing the largest percent increase is “Other information services” (873.8 percent). This is a residual category (code 678) in the “Information” sector of the 2000 classification that did not exist as a separate category in 1990. It includes long-established industries such as news reporting services, news syndicates, press associations, and wire news services; most of these industries were classified as “Business services” (code 741) in 1990. Many relatively new industries, however, are also included in “Other information services,” which may have dramatically swelled the numbers in this 2000 category when compared to 1990. These new industries include internet access providers, online information access services, database information retrieval systems, and other “dot-coms.”
2. The industry category with the next largest percent increase is “Management of companies and enterprises” (547.1 percent). This category is a brand new sector created in the 1997 NAICS. It is supposed to comprise business establishments that hold the securities of companies for the purpose of owning a controlling interest, and establishments that administer, oversee, and manage their overall company or enterprise. This category did not exist as a separately identified category or group in the 1990 Census. In both the 1990 Census and in Census 2000, respondents tended not to provide the kind of information needed to distinguish workers in the management establishment of a larger corporation or enterprise from those that work in the production or service-providing establishments of the same company. As a result, this sector is probably underreported in both censuses, and the apparently huge increase may be an artifact of this underreporting.
3. Other categories with high percentage increases, each doubling or more from 1990 to 2000, were: “Other administrative and other support services” (208.1 percent); “Computer systems design and related services” (199.7 percent); “Home health care services” (136.1 percent); “Professional and commercial equipment and supplies, wholesale” (120.8 percent); “Radio, TV, and computer sales, retail” (103.5 percent); and “Electronic shopping and mail order houses, retail” (102.8 percent).⁷
4. The categories showing the greatest losses, each losing more than 60 percent of its numbers from 1990 to 2000 were: “Resin, synthetic rubber and fibers, and filaments manufacturing” (-76.3 percent); “Electric and gas and other combination utilities” (-67.7 percent); “Metal ore mining” (-64.2 percent); and “Ordnance manufacturing” (-61.1 percent).

Occupation

1. As you might expect, the major occupation group with the largest percent increase from 1990 to 2000 was the one for “Computer specialists,” which more than doubled from 1990 to 2000 (122.2 percent increase). Within this group several detailed categories showed huge increases, some over 1000 percent: “Database administrators” (1773.4 percent increase); “Computer support

⁷ Increases and decreases may not be statistically significantly different from each other.

specialists” (1174.9 percent); “Network systems and data communications analysts” (1022.6 percent); “Network and computer systems administrators” (514.8 percent); and “Computer software engineers” (194.5 percent), among others.

2. Another occupation showing an increase of over 1000 percent was the residual category “Physical scientists, all other” (1131.4 percent). This apparent increase, however, may be more due to a coding anomaly than to a real change in the number of physical scientists. Often in the census, respondents do not provide enough information for accurate assignment to a category. In 1990, if a person said he or she was a “scientist” without specifying exactly what kind of scientist, the response was assigned to a processing step called “problem referral,” where a coder had to make a judgment about the correct code to assign, based on the industry or other information provided. These unspecified responses were probably spread among several categories for scientists. In 2000, however, the new SOC and the Census index assigned **all** unspecified scientists to the category for “Physical scientists, all other.” This decision to simplify the coding process probably inflated the number of people assigned to the residual category for physical scientists in Census 2000.
3. In the group “Production occupations,” a computer-related occupation with a very large increase was “Computer control programmers and operators” (731.5 percent). Although this occupation is not part of the “Computer specialists” major group, many workers in this category develop programs to control machining or processing by automatic machine tools, equipment, or systems. In other words, the change in this occupation category may reflect an increase in the use of robotics and other automated processes in production-type industries, and the need for people who can program and operate those processes.
4. Other categories with high percentage increases, each tripling or more from 1990 to 2000, were: “Financial examiners” (482.8 percent); “First-line supervisors/managers of correctional officers (360.7 percent); “Physician assistants” (356.7 percent)⁸; “First-line supervisors/managers of personal service workers (337.9 percent); and “Industrial production managers” (226.7 percent).
5. Most Census 2000 products do not show data for occupation categories with fewer than 10,000 people nationwide. Among the categories *over* this threshold in 2000, the ones showing the greatest losses from 1990 to 2000 were: “Aircraft structure, surfaces, rigging, and systems assemblers” (-81.1 percent); “Railroad brake, signal, and switch operators” (-69.7 percent); “Textile, apparel, and furnishings workers, all other” (-61.6 percent); and “Textile cutting machine setters, operators, and tenders”(-60.9 percent).

ACCURACY AND RELIABILITY OF THE DATA

As from any sample, the proportions (conversion factors) shown in the comparability tables are subject to sampling error, especially when the numbers for a detailed category are very small. Furthermore, since the base sample is from 1990, it reflects the industrial and occupational composition of the labor force at that time. Because industries and occupations change over time, the sample may be less useful for other time periods. Surveys and other databases may measure the industrial and occupational distribution of the labor force differently from the decennial census. Therefore, although the conversion factors contained in this

⁸ This category includes emergency medical technicians and paramedics.

paper can be used for other data sources, the conversion may not be as accurate as for the data from the 1990 census. Remember also the point described earlier in this paper that these factors will vary in accuracy for each sex, race, geographic area, or other characteristic.

The data presented in this report are based on a 146,686 case sample of the 1990 census experienced civilian labor force. These data are estimates of the values that would have been obtained if the study had been made on all people in the 1990 experienced civilian labor force.

The deviation of a sample estimate from the average of all possible samples is called the sampling error. The standard error of a survey estimate is a measure of the variation among the estimates from all possible samples and thus, is a measure of the precision with which an estimate from a particular sample approximates the average result of all possible samples. A sample estimate and its estimated standard error may be used to construct confidence intervals about the estimate.

The Census Bureau provides, in many of its reports and in documentations to its data sets, extensive information and formulas that analysts can use to calculate standard errors and confidence intervals. One such source of this information is Chapter 8 in the documentation for Census 2000 Summary File 3. You can find this documentation at <http://www.census.gov/prod/cen2000/doc/sf3.pdf>.

SOURCES OF INDUSTRY AND OCCUPATION DATA

The Census Bureau's website www.census.gov includes a section called *American FactFinder*, which provides a wealth of data from the last two decennial censuses and from its American Community Survey, which is conducted between the censuses. The following data sets and tables provide industry and occupation data from the decennial censuses.

Note that in all the census products listed here, there is a trade-off between levels of geography and the amount of detail found for industry and occupation categories. For example, Census 2000 SF-3 provides data for very small geographic areas such as census tracts and block groups, but you will find data for only 20 industry and 33 occupation groups. On the other extreme, the Census 2000 1-percent PUMS provides the full detail of 265 industry and 509 occupation categories, but only for very large geographic areas such as entire states, metropolitan areas, and other areas with a minimum population of 400,000.

On *American FactFinder*:

Census 2000:

2000 Summary File (SF) 3; see:

Table DP-3. Profile of Selected Economic Characteristics: 2000

Table QT-P27. Occupation by Sex: 2000

Table QT-P28. Occupation by Sex – Percent Distribution: 2000

Table QT-P29. Industry by Sex: 2000

Table QT-P30. Industry by Sex – Percent Distribution: 2000

Table P49. Sex by Industry for the Employed Civilian Population 16+ Years

Table P50. Sex by Occupation for the Employed Civilian Population 16+ Years

Table P51. Sex by Industry by Class of Worker for the Employed Civilian Population 16+ Years

2000 Summary File (SF) 4; see:

Table DP-3. Profile of Selected Economic Characteristics: 2000 (with race detail)

Table QT-P27. Occupation by Sex: 2000 (with race detail)
 Table QT-P28. Occupation by Sex – Percent Distribution: 2000 (with race detail)
 Table QT-P29. Industry by Sex: 2000 (with race detail)
 Table QT-P30. Industry by Sex – Percent Distribution: 2000 (with race detail)
 Table PCT85. Sex by Industry for the Employed Civilian Population 16+ Years
 Table PCT86. Sex by Occupation for the Employed Civilian Population 16+ Years
 Table PCT87. Sex by Industry by Class of Worker for the Employed Civilian Population 16+ Years

1990 Census:

1990 Summary Tape File (STF) 3; see:
 Table DP-3. Labor Force Status and Employment Characteristics: 1990
 Table P077. Industry
 Table P078. Occupation

Other products available from the Census Bureau:

Census 2000:

2000 EEO Special File: all tables⁹
 2000 5-percent Public Use Microdata Samples (PUMS)
 2000 1-percent Public Use Microdata Samples (PUMS)

1990 Census:

1990 Summary Tape File (STF) 4; see:
 Table PB61. Sex by Industry
 Table PB62. Sex by Industry by Class of Worker
 Table PB63. Sex by Occupation
 1990 EEO File: all tables
 1990 5-percent Public Use Microdata Samples (PUMS)
 1990 1-percent Public Use Microdata Samples (PUMS)

APPENDICES

The following appendices provide more information related to this paper.

Appendix A: 1990 Census Industrial Classification

Appendix B: 1990 Census Occupational Classification

Appendix C: Census 2000 Industrial Classification, with NAICS Equivalent

Appendix D: Census 2000 Occupational Classification, with SOC Equivalent

Appendix E: Bibliography of Related Texts and Reports

Appendix F: Glossary of Terms and Abbreviations Used in This Paper

⁹ The Census Bureau produced the Census 2000 EEO Special File as a “special tabulation” under contract with a consortium of four other federal agencies. For more information about the content and development of this file, see the documentation provided with this product.

APPENDIX A.
1990 CENSUS OF POPULATION INDUSTRIAL CLASSIFICATION SYSTEM

(Numbers in parentheses are the 1987 SIC codes)

1990
CENSUS
CODE

AGRICULTURE, FORESTRY, AND FISHERIES

- 010 Agricultural production, crops (01)
- 011 Agricultural production, livestock (02)
- 012 Veterinary services (074)
- 020 Landscape and horticultural services (078)
- 030 Agricultural services, n.e.c. (071, 072, 075, 076)
- 031 Forestry (08)
- 032 Fishing, hunting, and trapping (09)

MINING

- 040 Metal mining (10)
- 041 Coal mining (12)
- 042 Oil and gas extraction (13)
- 050 Nonmetallic mining and quarrying, except fuels (14)

- 060 **CONSTRUCTION** (15, 16, 17)

MANUFACTURING

Nondurable Goods

Food and kindred products

- 100 Meat products (201)
 - 101 Dairy products (202)
 - 102 Canned, frozen, and preserved fruits and vegetables (203)
 - 110 Grain mill products (204)
 - 111 Bakery products (205)
 - 112 Sugar and confectionery products (206)
 - 120 Beverage industries (208)
 - 121 Miscellaneous food preparations and kindred products (207, 209)
 - 122 Not specified food industries
 - 130 Tobacco manufactures (21)
- Textile mill products
- 132 Knitting mills (225)
 - 140 Dyeing and finishing textiles, except wool and knit goods (226)
 - 141 Carpets and rugs (227)
 - 142 Yarn, thread, and fabric mills (221-224, 228)
 - 150 Miscellaneous textile mill products (229)

**CENSUS
CODE**

MANUFACTURING - *Continued*

Nondurable goods - *Continued*

- Apparel and other finished textile products
- 151 Apparel and accessories, except knit (231-238)
- 152 Miscellaneous fabricated textile products (239)
- Paper and allied products
- 160 Pulp, paper, and paperboard mills (261-263)
- 161 Miscellaneous paper and pulp products (267)
- 162 Paperboard containers and boxes (265)
- Printing, publishing, and allied industries
- 171 Newspaper publishing and printing (271)
- 172 Printing, publishing, and allied industries, except newspapers (272-279)
- Chemicals and allied products
- 180 Plastics, synthetics, and resins (282)
- 181 Drugs (283)
- 182 Soaps and cosmetics (284)
- 190 Paints, varnishes, and related products (285)
- 191 Agricultural chemicals (287)
- 192 Industrial and miscellaneous chemicals (281, 286, 289)
- Petroleum and coal products
- 200 Petroleum refining (291)
- 201 Miscellaneous petroleum and coal products (295, 299)
- Rubber and miscellaneous plastics products
- 210 Tires and inner tubes (301)
- 211 Other rubber products, and plastics footwear and belting (302-306)
- 212 Miscellaneous plastics products (308)
- Leather and leather products
- 220 Leather tanning and finishing (311)
- 221 Footwear, except rubber and plastic (313, 314)
- 222 Leather products, except footwear (315-317, 319)

Durable Goods

- Lumber and wood products, except furniture
- 230 Logging (241)
- 231 Sawmills, planing mills, and millwork (242, 243)
- 232 Wood buildings and mobile homes (245)
- 241 Miscellaneous wood products (244, 249)
- 242 Furniture and fixtures (25)
- Stone, clay, glass, and concrete products
- 250 Glass and glass products (321-323)
- 251 Cement, concrete, gypsum, and plaster products (324, 327)
- 252 Structural clay products (325)
- 261 Pottery and related products (326)
- 262 Miscellaneous nonmetallic mineral and stone products (328, 329)

CENSUS
CODE

MANUFACTURING - *Continued*

Durable Goods - *Continued*

Metal industries

- 270 Blast furnaces, steelworks, rolling and finishing mills (331)
- 271 Iron and steel foundries (332)
- 272 Primary aluminum industries (3334, part 334, 3353-3355, 3363, 3365)
- 280 Other primary metal industries (3331, 3339, part 334, 3351, 3355,3357,3364,3366,3369, 339)
- 281 Cutlery, handtools, and general hardware (342)
- 282 Fabricated structural metal products (344)
- 290 Screw machine products (345)
- 291 Metal forgings and stampings (346)
- 292 Ordnance (348)
- 300 Miscellaneous fabricated metal products (341, 343, 347, 349)
- 301 Not specified metal industries

Machinery and computing equipment

- 310 Engines and turbines (351)
- 311 Farm machinery and equipment (352)
- 312 Construction and material handling machines (353)
- 320 Metalworking machinery (354)
- 321 Office and accounting machines (3578, 3579)
- 322 Computers and related equipment (3571-3577)
- 331 Machinery, except electrical, n.e.c. (355, 356, 358, 359)
- 332 Not specified machinery

Electrical machinery, equipment, and supplies

- 340 Household appliances (363)
- 341 Radio, TV, and communication equipment (365, 366)
- 342 Electrical machinery, equipment, and supplies, n.e.c. (361, 362,364, 367, 369)
- 350 Not specified electrical machinery, equipment, and supplies

Transportation equipment

- 351 Motor vehicles and motor vehicle equipment (371)
- 352 Aircraft and parts (372)
- 360 Ship and boat building and repairing (373)
- 361 Railroad locomotives and equipment (374)
- 362 Guided missiles, space vehicles, and parts (376)
- 370 Cycles and miscellaneous transportation equipment (375, 379)

Professional and photographic equipment, and watches

- 371 Scientific and controlling instruments (381, 382 exc. 3827)
- 372 Medical, dental, and optical instruments and supplies (3827, 384,385)
- 380 Photographic equipment and supplies (386)
- 381 Watches, clocks, and clockwork operated devices (387)
- 390 Toys, amusement, and sporting goods (394)
- 391 Miscellaneous manufacturing industries (39 exc. 394)
- 392 Not specified manufacturing industries

**CENSUS
CODE**

TRANSPORTATION, COMMUNICATIONS, AND OTHER PUBLIC UTILITIES

Transportation

- 400 Railroads (40)
- 401 Bus service and urban transit (41, except 412)
- 402 Taxicab service (412)
- 410 Trucking service (421, 423)
- 411 Warehousing and storage (422)
- 412 U.S. Postal Service (43)
- 420 Water transportation (44)
- 421 Air transportation (45)
- 422 Pipe lines, except natural gas (46)
- 432 Services incidental to transportation (47)

Communications

- 440 Radio and television broadcasting and cable (483, 484)
- 441 Telephone communications (481)
- 442 Telegraph and miscellaneous communications services (482, 489)

Utilities and sanitary services

- 450 Electric light and power (491)
- 451 Gas and steam supply systems (492, 496)
- 452 Electric and gas, and other combinations (493)
- 470 Water supply and irrigation (494, 497)
- 471 Sanitary services (495)
- 472 Not specified utilities

WHOLESALE TRADE

Durable Goods

- 500 Motor vehicles and equipment (501)
- 501 Furniture and home furnishings (502)
- 502 Lumber and construction materials (503)
- 510 Professional and commercial equipment and supplies (504)
- 511 Metals and minerals, except petroleum (505)
- 512 Electrical goods (506)
- 521 Hardware, plumbing and heating supplies (507)
- 530 Machinery, equipment, and supplies (508)
- 531 Scrap and waste materials (5093)
- 532 Miscellaneous wholesale, durable goods (509 exc. 5093)
- 540 Paper and paper products (511)
- 541 Drugs, chemicals and allied products (512, 516)
- 542 Apparel, fabrics, and notions (513)
- 550 Groceries and related products (514)
- 551 Farm-product raw materials (515)
- 552 Petroleum products (517)
- 560 Alcoholic beverages (518)
- 561 Farm supplies (5191)
- 562 Miscellaneous wholesale, nondurable goods (5192-5199)
- 571 Not specified wholesale trade

CENSUS
CODE

RETAIL TRADE

- 580 Lumber and building material retailing (521, 523)
- 581 Hardware stores (525)
- 582 Retail nurseries and garden stores (526)
- 590 Mobile home dealers (527)
- 591 Department stores (531)
- 592 Variety stores (533)
- 600 Miscellaneous general merchandise stores (539)
- 601 Grocery stores (541)
- 602 Dairy products stores (545)
- 610 Retail bakeries (546)
- 611 Food stores, n.e.c. (542, 543, 544, 549)
- 612 Motor vehicle dealers (551, 552)
- 620 Auto and home supply stores (553)
- 621 Gasoline service stations (554)
- 622 Miscellaneous vehicle dealers (555, 556, 557, 559)
- 623 Apparel and accessory stores, except shoe (56, except 566)
- 630 Shoe stores (566)
- 631 Furniture and home furnishings stores (571)
- 632 Household appliance stores (572)
- 633 Radio, TV, and computer stores (5731, 5734)
- 640 Music stores (5735, 5736)
- 641 Eating and drinking places (58)
- 642 Drug stores (591)
- 650 Liquor stores (592)
- 651 Sporting goods, bicycles, and hobby stores (5941, 5945, 5946)
- 652 Book and stationery stores (5942, 5943)
- 660 Jewelry stores (5944)
- 661 Gift, novelty, and souvenir shops (5947)
- 662 Sewing, needlework and piece goods stores (5949)
- 663 Catalog and mail order houses (5961)
- 670 Vending machine operators (5962)
- 671 Direct selling establishments (5963)
- 672 Fuel dealers (598)
- 681 Retail florists (5992)
- 682 Miscellaneous retail stores (593, 5948, 5993-5995, 5999)
- 691 Not specified retail trade

FINANCE, INSURANCE, AND REAL ESTATE

- 700 Banking (60 exc. 603 and 606)
- 701 Savings institutions, including credit unions (603, 606)
- 702 Credit agencies, n.e.c. (61)
- 710 Security, commodity brokerage, and investment companies (62, 67)
- 711 Insurance (63, 64)
- 712 Real estate, including real estate-insurance offices (65)

CENSUS
CODE**BUSINESS AND REPAIR SERVICES**

- 721 Advertising (731)
- 722 Services to dwellings and other buildings (734)
- 731 Personnel supply services (736)
- 732 Computer and data processing services (737)
- 740 Detective and protective services (7381, 7382)
- 741 Business services, n.e.c. (732, 733, 735, 7383-7389)
- 742 Automotive rental and leasing, without drivers (751)
- 750 Automobile parking and carwashes (752, 7542)
- 751 Automotive repair and related services (753, 7549)
- 752 Electrical repair shops (762, 7694)
- 760 Miscellaneous repair services (763, 764, 7692, 7699)

PERSONAL SERVICES

- 761 Private households (88)
- 762 Hotels and motels (701)
- 770 Lodging places, except hotels and motels (702, 703, 704)
- 771 Laundry, cleaning, and garment services (721 exc. part 7219)
- 772 Beauty shops (723)
- 780 Barber shops (724)
- 781 Funeral service and crematories (726)
- 782 Shoe repair shops (725)
- 790 Dressmaking shops (part 7219)
- 791 Miscellaneous personal services (722, 729)

ENTERTAINMENT AND RECREATION SERVICES

- 800 Theaters and motion pictures (781-783, 792)
- 801 Video tape rental (784)
- 802 Bowling centers (793)
- 810 Miscellaneous entertainment and recreation services (791, 794, 799)

PROFESSIONAL AND RELATED SERVICES

- 812 Offices and clinics of physicians (801, 803)
- 820 Offices and clinics of dentists (802)
- 821 Offices and clinics of chiropractors (8041)
- 822 Offices and clinics of optometrists (8042)
- 830 Offices and clinics of health practitioners, n.e.c. (8043, 8049)
- 831 Hospitals (806)
- 832 Nursing and personal care facilities (805)
- 840 Health services, n.e.c. (807, 808, 809)
- 841 Legal services (81)
- 842 Elementary and secondary schools (821)
- 850 Colleges and universities (822)
- 851 Vocational schools (824)

CENSUS
CODE

PROFESSIONAL AND RELATED SERVICES - *Continued*

- 852 Libraries (823)
- 860 Educational services, n.e.c. (829)
- 861 Job training and vocational rehabilitation services (833)
- 862 Child day care services (part 835)
- 863 Family child care homes (part 835)
- 870 Residential care facilities, without nursing (836)
- 871 Social services, n.e.c. (832, 839)
- 872 Museums, art galleries, and zoos (84)
- 873 Labor unions (863)
- 880 Religious organizations (866)
- 881 Membership organizations, n.e.c. (861, 862, 864, 865, 869)
- 882 Engineering, architectural, and surveying services (871)
- 890 Accounting, auditing, and bookkeeping services (872)
- 891 Research, development, and testing services (873)
- 892 Management and public relations services (874)
- 893 Miscellaneous professional and related services (899)

PUBLIC ADMINISTRATION

- 900 Executive and legislative offices (911-913)
- 901 General government, n.e.c. (919)
- 910 Justice, public order, and safety (92)
- 921 Public finance, taxation, and monetary policy (93)
- 922 Administration of human resources programs (94)
- 930 Administration of environmental quality and housing programs (95)
- 931 Administration of economic programs (96)
- 932 National security and international affairs (97)

ACTIVE DUTY MILITARY

- Armed Forces
- 940 Army
- 941 Air Force
- 942 Navy
- 950 Marines
- 951 Coast Guard
- 952 Armed Forces, Branch not specified
- 960 Military Reserves or National Guard

EXPERIENCED UNEMPLOYED NOT CLASSIFIED BY INDUSTRY

- 992 Last worked 1984 or earlier

APPENDIX B
1990 CENSUS OF POPULATION OCCUPATIONAL CLASSIFICATION SYSTEM

(The numbers in parentheses refer to the 1980 Standard Occupational Classification codes.
 "Pt" means part. "N.e.c." means not elsewhere classified.)

1990
CENSUS
CODE

MANAGERIAL AND PROFESSIONAL SPECIALTY OCCUPATIONS

Executive, Administrative, and Managerial Occupations

003	Legislators (111)
004	Chief executives and general administrators, public administration (112)
005	Administrators and officials, public administration (1132-1139)
006	Administrators, protective services (1131)
007	Financial managers (122)
008	Personnel and labor relations managers (123)
009	Purchasing managers (124)
013	Managers, marketing, advertising, and public relations (125)
014	Administrators, education and related fields (128)
015	Managers, medicine and health (131)
016	Postmasters and mail superintendents (1344)
017	Managers, food serving and lodging establishments (1351)
018	Managers, properties and real estate (1353)
019	Funeral directors (pt 1359)
021	Managers, service organizations, n.e.c. (127, 1352, 1354, pt 1359)
022	Managers and administrators, n.e.c. (121, 126, 132-1343, 136-139)

Management Related Occupations

023	Accountants and auditors (1412)
024	Underwriters (1414)
025	Other financial officers (1415, 1419)
026	Management analysts (142)
027	Personnel, training, and labor relations specialists (143)
028	Purchasing agents and buyers, farm products (1443)
029	Buyers, wholesale and retail trade, except farm products (1442)
033	Purchasing agents and buyers, n.e.c. (1449)
034	Business and promotion agents (145)
035	Construction inspectors (1472)
036	Inspectors and compliance officers, except construction (1473)
037	Management related occupations, n.e.c. (149)

Professional Specialty Occupations

	Engineers, Architects, and Surveyors
043	Architects (161)
	Engineers
044	Aerospace (1622)

045	Metallurgical and materials (1623)
046	Mining (1624)
047	Petroleum (1625)
048	Chemical (1626)
049	Nuclear (1627)
053	Civil (1628)
054	Agricultural (1632)
055	Electrical and electronic (1633, 1636)
056	Industrial (1634)
057	Mechanical (1635)
058	Marine and naval architects (1637)
059	Engineers, n.e.c. (1639)
063	Surveyors and mapping scientists (164)
	Mathematical and Computer Scientists
064	Computer systems analysts and scientists (171)
065	Operations and systems researchers and analysts (172)
066	Actuaries (1732)
067	Statisticians (1733)
068	Mathematical scientists, n.e.c. (1739)
	Natural Scientists
069	Physicists and astronomers (1842, 1843)
073	Chemists, except biochemists (1845)
074	Atmospheric and space scientists (1846)
075	Geologists and geodesists (1847)
076	Physical scientists, n.e.c. (1849)
077	Agricultural and food scientists (1853)
078	Biological and life scientists (1854)
079	Forestry and conservation scientists (1852)
083	Medical scientists (1855)
	Health Diagnosing Occupations
084	Physicians (261)
085	Dentists (262)
086	Veterinarians (27)
087	Optometrists (281)
088	Podiatrists (283)
089	Health diagnosing practitioners, n.e.c. (289)
	Health Assessment and Treating Occupations
095	Registered nurses (29)
096	Pharmacists (301)
097	Dietitians (302)
	Therapists
098	Respiratory therapists (3031)
099	Occupational therapists (3032)
103	Physical therapists (3033)
104	Speech therapists (3034)
105	Therapists, n.e.c. (3039)
106	Physicians' assistants (304)
	Teachers, Postsecondary
113	Earth, environmental, and marine science teachers (2212)
114	Biological science teachers (2213)
115	Chemistry teachers (2214)

116	Physics teachers (2215)
117	Natural science teachers, n.e.c. (2216)
118	Psychology teachers (2217)
119	Economics teachers (2218)
123	History teachers (2222)
124	Political science teachers (2223)
125	Sociology teachers (2224)
126	Social science teachers, n.e.c. (2225)
127	Engineering teachers (2226)
128	Mathematical science teachers (2227)
129	Computer science teachers (2228)
133	Medical science teachers (2231)
134	Health specialties teachers (2232)
135	Business, commerce, and marketing teachers (2233)
136	Agriculture and forestry teachers (2234)
137	Art, drama, and music teachers (2235)
138	Physical education teachers (2236)
139	Education teachers (2237)
143	English teachers (2238)
144	Foreign language teachers (2242)
145	Law teachers (2243)
146	Social work teachers (2244)
147	Theology teachers (2245)
148	Trade and industrial teachers (2246)
149	Home economics teachers (2247)
153	Teachers, postsecondary, n.e.c. (2249)
154	Postsecondary teachers, subject not specified
	Teachers, Except Postsecondary
155	Teachers, prekindergarten and kindergarten (231)
156	Teachers, elementary school (232)
157	Teachers, secondary school (233)
158	Teachers, special education (235)
159	Teachers, n.e.c. (236, 239)
163	Counselors, educational and vocational (24)
	Librarians, Archivists, and Curators
164	Librarians (251)
165	Archivists and curators (252)
	Social Scientists and Urban Planners
166	Economists (1912)
167	Psychologists (1915)
168	Sociologists (1916)
169	Social scientists, n.e.c. (1913, 1914, 1919)
173	Urban planners (192)
	Social, Recreation, and Religious Workers
174	Social workers (2032)
175	Recreation workers (2033)
176	Clergy (2042)
177	Religious workers, n.e.c. (2049)
	Lawyers and Judges
178	Lawyers (211)
179	Judges (212)

	Writers, Artists, Entertainers, and Athletes
183	Authors (321)
184	Technical writers (398)
185	Designers (322)
186	Musicians and composers (323)
187	Actors and directors (324)
188	Painters, sculptors, craft-artists, and artist printmakers (325)
189	Photographers (326)
193	Dancers (327)
194	Artists, performers, and related workers, n.e.c. (328, 329)
195	Editors and reporters (331)
197	Public relations specialists (332)
198	Announcers (333)
199	Athletes (34)

TECHNICAL, SALES, AND ADMINISTRATIVE SUPPORT OCCUPATIONS

Technicians and Related Support Occupations

	Health Technologists and Technicians
203	Clinical laboratory technologists and technicians (362)
204	Dental hygienists (363)
205	Health record technologists and technicians (364)
206	Radiologic technicians (365)
207	Licensed practical nurses (366)
208	Health technologists and technicians, n.e.c. (369)
	Technologists and Technicians, Except Health
	Engineering and Related Technologists and Technicians
213	Electrical and electronic technicians (3711)
214	Industrial engineering technicians (3712)
215	Mechanical engineering technicians (3713)
216	Engineering technicians, n.e.c. (3719)
217	Drafting occupations (372)
218	Surveying and mapping technicians (373)
	Science Technicians
223	Biological technicians (382)
224	Chemical technicians (3831)
225	Science technicians, n.e.c. (3832, 3833, 384, 389)
	Technicians; Except Health, Engineering, and Science
226	Airplane pilots and navigators (825)
227	Air traffic controllers (392)
228	Broadcast equipment operators (393)
229	Computer programmers (3971, 3972)
233	Tool programmers, numerical control (3974)
234	Legal assistants (396)
235	Technicians, n.e.c. (399)

Sales Occupations

243	Supervisors and proprietors, sales occupations (40)
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	Sales Representatives, Finance and Business Services
253	Insurance sales occupations (4122)
254	Real estate sales occupations (4123)
255	Securities and financial services sales occupations (4124)
256	Advertising and related sales occupations (4153)
257	Sales occupations, other business services (4152)
	Sales Representatives, Commodities Except Retail
258	Sales engineers (421)
259	Sales representatives, mining, manufacturing, and wholesale (423, 424)
	Sales Workers, Retail and Personal Services
263	Sales workers, motor vehicles and boats (4342, 4344)
264	Sales workers, apparel (4346)
265	Sales workers, shoes (4351)
266	Sales workers, furniture and home furnishings (4348)
267	Sales workers; radio, TV, hi-fi, and appliances (4343, 4352)
268	Sales workers, hardware and building supplies (4353)
269	Sales workers, parts (4367)
274	Sales workers, other commodities (4345, 4347, 4354, 4356, 4359, 4362, 4369)
275	Sales counter clerks (4363)
276	Cashiers (4364)
277	Street and door-to-door sales workers (4366)
278	News vendors (4365)
	Sales Related Occupations
283	Demonstrators, promoters and models, sales (445)
284	Auctioneers (447)
285	Sales support occupations, n.e.c. (444, 446, 449)

Administrative Support Occupations, Including Clerical

	Supervisors, Administrative Support Occupations
303	Supervisors, general office (4511, 4513, 4514, 4516, 4519, 4529)
304	Supervisors, computer equipment operators (4512)
305	Supervisors, financial records processing (4521)
306	Chief communications operators (4523)
307	Supervisors; distribution, scheduling, and adjusting clerks (4522, 4524-4528)
	Computer Equipment Operators
308	Computer operators (4612)
309	Peripheral equipment operators (4613)
	Secretaries, Stenographers, and Typists
313	Secretaries (4622)
314	Stenographers (4623)
315	Typists (4624)
	Information Clerks
316	Interviewers (4642)
317	Hotel clerks (4643)
318	Transportation ticket and reservation agents (4644)
319	Receptionists (4645)
323	Information clerks, n.e.c. (4649)
	Records Processing Occupations, Except Financial
325	Classified-ad clerks (4662)
326	Correspondence clerks (4663)

327	Order clerks (4664)
328	Personnel clerks, except payroll and timekeeping (4692)
329	Library clerks (4694)
335	File clerks (4696)
336	Records clerks (4699)
	Financial Records Processing Occupations
337	Bookkeepers, accounting, and auditing clerks (4712)
338	Payroll and timekeeping clerks (4713)
339	Billing clerks (4715)
343	Cost and rate clerks (4716)
344	Billing, posting, and calculating machine operators (4718)
	Duplicating, Mail and Other Office Machine Operators
345	Duplicating machine operators (4722)
346	Mail preparing and paper handling machine operators (4723)
347	Office machine operators, n.e.c. (4729)
	Communications Equipment Operators
348	Telephone operators (4732)
353	Communications equipment operators, n.e.c. (4733, 4739)
	Mail and Message Distributing Occupations
354	Postal clerks, exc. mail carriers (4742)
355	Mail carriers, postal service (4743)
356	Mail clerks, exc. postal service (4744)
357	Messengers (4745)
	Material Recording, Scheduling, and Distributing Clerks
359	Dispatchers (4751)
363	Production coordinators (4752)
364	Traffic, shipping, and receiving clerks (4753)
365	Stock and inventory clerks (4754)
366	Meter readers (4755)
368	Weighers, measurers, checkers and samplers (4756, 4757)
373	Expeditors (4758)
374	Material recording, scheduling, and distributing clerks, n.e.c. (4759)
	Adjusters and Investigators
375	Insurance adjusters, examiners, and investigators (4782)
376	Investigators and adjusters, except insurance (4783)
377	Eligibility clerks, social welfare (4784)
378	Bill and account collectors (4786)
	Miscellaneous Administrative Support Occupations
379	General office clerks (463)
383	Bank tellers (4791)
384	Proofreaders (4792)
385	Data-entry keyers (4793)
386	Statistical clerks (4794)
387	Teachers' aides (4795)
389	Administrative support occupations, n.e.c. (4787, 4799)

SERVICE OCCUPATIONS

Private Household Occupations

- 403 Launderers and ironers (503)
- 404 Cooks, private household (504)
- 405 Housekeepers and butlers (505)
- 406 Child care workers, private household (506)
- 407 Private household cleaners and servants (502, 507, 509)

Protective Service Occupations

- Supervisors, Protective Service Occupations
 - 413 Supervisors, firefighting and fire prevention occupations (5111)
 - 414 Supervisors, police and detectives (5112)
 - 415 Supervisors, guards (5113)
- Firefighting and Fire Prevention Occupations
 - 416 Fire inspection and fire prevention occupations (5122)
 - 417 Firefighting occupations (5123)
- Police and Detectives
 - 418 Police and detectives, public service (5132)
 - 423 Sheriffs, bailiffs, and other law enforcement officers (5134)
 - 424 Correctional institution officers (5133)
- Guards
 - 425 Crossing guards (5142)
 - 426 Guards and police, exc. public service (5144)
 - 427 Protective service occupations, n.e.c. (5149)

Service Occupations, Except Protective and Household

- Food Preparation and Service Occupations
 - 433 Supervisors, food preparation and service occupations (5211)
 - 434 Bartenders (5212)
 - 435 Waiters and waitresses (5213)
 - 436 Cooks (5214, 5215)
 - 438 Food counter, fountain and related occupations (5216)
 - 439 Kitchen workers, food preparation (5217)
 - 443 Waiters'/waitresses' assistants (5218)
 - 444 Miscellaneous food preparation occupations (5219)
- Health Service Occupations
 - 445 Dental assistants (5232)
 - 446 Health aides, except nursing (5233)
 - 447 Nursing aides, orderlies, and attendants (5236)
- Cleaning and Building Service Occupations, except Household
 - 448 Supervisors, cleaning and building service workers (5241)
 - 449 Maids and housemen (5242, 5249)
 - 453 Janitors and cleaners (5244)
 - 454 Elevator operators (5245)
 - 455 Pest control occupations (5246)
- Personal Service Occupations
 - 456 Supervisors, personal service occupations (5251)

457	Barbers (5252)
458	Hairdressers and cosmetologists (5253)
459	Attendants, amusement and recreation facilities (5254)
461	Guides (5255)
462	Ushers (5256)
463	Public transportation attendants (5257)
464	Baggage porters and bellhops (5262)
465	Welfare service aides (5263)
466	Family child care providers (pt 5264)
467	Early childhood teacher's assistants (pt 5264)
468	Child care workers, n.e.c. (pt 5264)
469	Personal service occupations, n.e.c. (5258, 5269)

FARMING, FORESTRY, AND FISHING OCCUPATIONS

	Farm Operators and Managers
473	Farmers, except horticultural (5512-5514)
474	Horticultural specialty farmers (5515)
475	Managers, farms, except horticultural (5522-5524)
476	Managers, horticultural specialty farms (5525)
	Other Agricultural and Related Occupations
	Farm Occupations, Except Managerial
477	Supervisors, farm workers (5611)
479	Farm workers (5612-5617)
483	Marine life cultivation workers (5618)
484	Nursery workers (5619)
	Related Agricultural Occupations
485	Supervisors, related agricultural occupations (5621)
486	Groundskeepers and gardeners, except farm (5622)
487	Animal caretakers, except farm (5624)
488	Graders and sorters, agricultural products (5625)
489	Inspectors, agricultural products (5627)
	Forestry and Logging Occupations
494	Supervisors, forestry, and logging workers (571)
495	Forestry workers, except logging (572)
496	Timber cutting and logging occupations (573, 579)
	Fishers, Hunters, and Trappers
497	Captains and other officers, fishing vessels (pt 8241)
498	Fishers (583)
499	Hunters and trappers (584)

PRECISION PRODUCTION, CRAFT, AND REPAIR OCCUPATIONS

	Mechanics and Repairers
503	Supervisors, mechanics and repairers (60)
	Mechanics and Repairers, Except Supervisors
	Vehicle and Mobile Equipment Mechanics and Repairers
505	Automobile mechanics (pt 6111)
506	Automobile mechanic apprentices (pt 6111)
507	Bus, truck, and stationary engine mechanics (6112)
508	Aircraft engine mechanics (6113)

509	Small engine repairers (6114)
514	Automobile body and related repairers (6115)
515	Aircraft mechanics, exc. engine (6116)
516	Heavy equipment mechanics (6117)
517	Farm equipment mechanics (6118)
518	Industrial machinery repairers (613)
519	Machinery maintenance occupations (614)
	Electrical and Electronic Equipment Repairers
523	Electronic repairers, communications and industrial equipment (6151, 6153, 6155)
525	Data processing equipment repairers (6154)
526	Household appliance and power tool repairers (6156)
527	Telephone line installers and repairers (6157)
529	Telephone installers and repairers (6158)
533	Miscellaneous electrical and electronic equipment repairers (6152, 6159)
534	Heating, air conditioning, and refrigeration mechanics (616)
	Miscellaneous Mechanics and Repairers
535	Camera, watch, and musical instrument repairers (6171, 6172)
536	Locksmiths and safe repairers (6173)
538	Office machine repairers (6174)
539	Mechanical controls and valve repairers (6175)
543	Elevator installers and repairers (6176)
544	Millwrights (6178)
547	Specified mechanics and repairers, n.e.c. (6177, 6179)
549	Not specified mechanics and repairers
	Construction Trades
	Supervisors, Construction Occupations
553	Supervisors; brickmasons, stonemasons, and tile setters (6312)
554	Supervisors, carpenters and related workers (6313)
555	Supervisors, electricians and power transmission installers (6314)
556	Supervisors; painters, paperhangers, and plasterers (6315)
557	Supervisors; plumbers, pipefitters, and steamfitters (6316)
558	Supervisors, construction, n.e.c. (6311, 6318)
	Construction Trades, Except Supervisors
563	Brickmasons and stonemasons (pt 6412, pt 6413)
564	Brickmason and stonemason apprentices (pt 6412, pt 6413)
565	Tile setters, hard and soft (pt 6414, pt 6462)
566	Carpet installers (pt 6462)
567	Carpenters (pt 6422)
569	Carpenter apprentices (pt 6422)
573	Drywall installers (6424)
575	Electricians (pt 6432)
576	Electrician apprentices (pt 6432)
577	Electrical power installers and repairers (6433)
579	Painters, construction and maintenance (6442)
583	Paperhangers (6443)
584	Plasterers (6444)
585	Plumbers, pipefitters, and steamfitters (pt 645)
587	Plumber, pipefitter, and steamfitter apprentices (pt 645)
588	Concrete and terrazzo finishers (6463)
589	Glaziers (6464)
593	Insulation workers (6465)

594	Paving, surfacing, and tamping equipment operators (6466)
595	Roofers (6468)
596	Sheetmetal duct installers (6472)
597	Structural metal workers (6473)
598	Drillers, earth (6474)
599	Construction trades, n.e.c. (6467, 6475, 6476, 6479)
	Extractive Occupations
613	Supervisors, extractive occupations (632)
614	Drillers, oil well (652)
615	Explosives workers (653)
616	Mining machine operators (654)
617	Mining occupations, n.e.c. (656)
	Precision Production Occupations
628	Supervisors, production occupations (67, 71)
	Precision Metal Working Occupations
634	Tool and die makers (pt 6811)
635	Tool and die maker apprentices (pt 6811)
636	Precision assemblers, metal (6812)
637	Machinists (pt 6813)
639	Machinist apprentices (pt 6813)
643	Boilermakers (6814)
644	Precision grinders, filers, and tool sharpeners (6816)
645	Patternmakers and model makers, metal (6817)
646	Lay-out workers (6821)
647	Precious stones and metals workers (Jewelers) (6822, 6866)
649	Engravers, metal (6823)
653	Sheet metal workers (pt 6824)
654	Sheet metal worker apprentices (pt 6824)
655	Miscellaneous precision metal workers (6829)
	Precision Woodworking Occupations
656	Patternmakers and model makers, wood (6831)
657	Cabinet makers and bench carpenters (6832)
658	Furniture and wood finishers (6835)
659	Miscellaneous precision woodworkers (6839)
	Precision Textile, Apparel, and Furnishings Machine Workers
666	Dressmakers (pt 6852, pt 7752)
667	Tailors (pt 6852)
668	Upholsterers (6853)
669	Shoe repairers (6854)
674	Miscellaneous precision apparel and fabric workers (6856, 6859, pt 7752)
	Precision Workers, Assorted Materials
675	Hand molders and shapers, except jewelers (6861)
676	Patternmakers, lay-out workers, and cutters (6862)
677	Optical goods workers (6864, pt 7477, pt 7677)
678	Dental laboratory and medical appliance technicians (6865)
679	Bookbinders (6844)
683	Electrical and electronic equipment assemblers (6867)
684	Miscellaneous precision workers, n.e.c. (6869)
	Precision Food Production Occupations
686	Butchers and meat cutters (6871)
687	Bakers (6872)

688	Food batchmakers (6873, 6879)
	Precision Inspectors, Testers, and Related Workers
689	Inspectors, testers, and graders (6881, 828)
693	Adjusters and calibrators (6882)
	Plant and System Operators
694	Water and sewage treatment plant operators (691)
695	Power plant operators (pt 693)
696	Stationary engineers (pt 693, 7668)
699	Miscellaneous plant and system operators (692, 694, 695, 696)

OPERATORS, FABRICATORS, AND LABORERS

Machine Operators, Assemblers, and Inspectors

	Machine Operators and Tenders, except Precision
	Metal working and Plastic Working Machine Operators
703	Lathe and turning machine set-up operators (7312)
704	Lathe and turning machine operators (7512)
705	Milling and planing machine operators (7313, 7513)
706	Punching and stamping press machine operators (7314, 7317, 7514, 7517)
707	Rolling machine operators (7316, 7516)
708	Drilling and boring machine operators (7318, 7518)
709	Grinding, abrading, buffing, and polishing machine operators (7322, 7324, 7522)
713	Forging machine operators (7319, 7519)
714	Numerical control machine operators (7326)
715	Miscellaneous metal, plastic, stone, and glass working machine operators (7329, 7529)
717	Fabricating machine operators, n.e.c. (7339, 7539)
	Metal and Plastic Processing Machine Operators
719	Molding and casting machine operators (7315, 7342, 7515, 7542)
723	Metal plating machine operators (7343, 7543)
724	Heat treating equipment operators (7344, 7544)
725	Miscellaneous metal and plastic processing machine operators (7349, 7549)
	Woodworking Machine Operators
726	Wood lathe, routing, and planing machine operators (7431, 7432, 7631, 7632)
727	Sawing machine operators (7433, 7633)
728	Shaping and joining machine operators (7435, 7635)
729	Nailing and tacking machine operators (7636)
733	Miscellaneous woodworking machine operators (7434, 7439, 7634, 7639)
	Printing Machine Operators
734	Printing press operators (7443, 7643)
735	Photoengravers and lithographers (6842, 7444, 7644)
736	Typesetters and compositors (6841, 7642)
737	Miscellaneous printing machine operators (6849, 7449, 7649)
	Textile, Apparel, and Furnishings Machine Operators
738	Winding and twisting machine operators (7451, 7651)
739	Knitting, looping, taping, and weaving machine operators (7452, 7652)
743	Textile cutting machine operators (7654)
744	Textile sewing machine operators (7655)
745	Shoe machine operators (7656)
747	Pressing machine operators (7657)
748	Laundering and dry cleaning machine operators (6855, 7658)

- 749 Miscellaneous textile machine operators (7459, 7659)
- Machine Operators, Assorted Materials
- 753 Cementing and gluing machine operators (7661)
- 754 Packaging and filling machine operators (7462, 7662)
- 755 Extruding and forming machine operators (7463, 7663)
- 756 Mixing and blending machine operators (7664)
- 757 Separating, filtering, and clarifying machine operators (7476, 7666, 7676)
- 758 Compressing and compacting machine operators (7467, 7667)
- 759 Painting and paint spraying machine operators (7669)
- 763 Roasting and baking machine operators, food (7472, 7672)
- 764 Washing, cleaning, and pickling machine operators (7673)
- 765 Folding machine operators (7474, 7674)
- 766 Furnace, kiln, and oven operators, exc. food (7675)
- 768 Crushing and grinding machine operators (pt 7477, pt 7677)
- 769 Slicing and cutting machine operators (7478, 7678)
- 773 Motion picture projectionists (pt 7479)
- 774 Photographic process machine operators (6863, 6868, 7671)
- 777 Miscellaneous machine operators, n.e.c. (pt 7479, 7665, 7679)
- 779 Machine operators, not specified
- Fabricators, Assemblers, and Hand Working Occupations
- 783 Welders and cutters (7332, 7532, 7714)
- 784 Solderers and brazers (7333, 7533, 7717)
- 785 Assemblers (772, 774)
- 786 Hand cutting and trimming occupations (7753)
- 787 Hand molding, casting, and forming occupations (7754, 7755)
- 789 Hand painting, coating, and decorating occupations (7756)
- 793 Hand engraving and printing occupations (7757)
- 795 Miscellaneous hand working occupations (7758, 7759)
- Production Inspectors, Testers, Samplers, and Weighers
- 796 Production inspectors, checkers, and examiners (782, 787)
- 797 Production testers (783)
- 798 Production samplers and weighers (784)
- 799 Graders and sorters, exc. agricultural (785)

Transportation and Material Moving Occupations

Motor Vehicle Operators

- 803 Supervisors, motor vehicle operators (8111)
- 804 Truck drivers (8212-8214)
- 806 Driver-sales workers (8218)
- 808 Bus drivers (8215)
- 809 Taxicab drivers and chauffeurs (8216)
- 813 Parking lot attendants (874)
- 814 Motor transportation occupations, n.e.c. (8219)

Transportation Occupations, Except Motor Vehicles

Rail Transportation Occupations

- 823 Railroad conductors and yardmasters (8113)
- 824 Locomotive operating occupations (8232)
- 825 Railroad brake, signal, and switch operators (8233)
- 826 Rail vehicle operators, n.e.c. (8239)

Water Transportation Occupations

- 828 Ship captains and mates, except fishing boats (pt 8241, 8242)
- 829 Sailors and deckhands (8243)
- 833 Marine engineers (8244)
- 834 Bridge, lock, and lighthouse tenders (8245)

Material Moving Equipment Operators

- 843 Supervisors, material moving equipment operators (812)
- 844 Operating engineers (8312)
- 845 Longshore equipment operators (8313)
- 848 Hoist and winch operators (8314)
- 849 Crane and tower operators (8315)
- 853 Excavating and loading machine operators (8316)
- 855 Grader, dozer, and scraper operators (8317)
- 856 Industrial truck and tractor equipment operators (8318)
- 859 Miscellaneous material moving equipment operators (8319)

Handlers, Equipment Cleaners, Helpers, and Laborers

- 864 Supervisors, handlers, equipment cleaners, and laborers, n.e.c. (85)
- 865 Helpers, mechanics and repairers (863)
- Helpers, Construction and Extractive Occupations
- 866 Helpers, construction trades (8641-8645, 8648)
- 867 Helpers, surveyor (8646)
- 868 Helpers, extractive occupations (865)
- 869 Construction laborers (871)
- 874 Production helpers (861, 862)
- Freight, Stock, and Material Handlers
- 875 Garbage collectors (8722)
- 876 Stevedores (8723)
- 877 Stock handlers and baggers (8724)
- 878 Machine feeders and offbearers (8725)
- 883 Freight, stock, and material handlers, n.e.c. (8726)
- 885 Garage and service station related occupations (873)
- 887 Vehicle washers and equipment cleaners (875)
- 888 Hand packers and packagers (8761)
- 889 Laborers, except construction (8769)

MILITARY OCCUPATIONS¹⁰

- 903 Commissioned officers and warrant officers
- 904 Non-commissioned officers and other enlisted personnel
- 905 Military occupation, rank not specified

EXPERIENCED UNEMPLOYED NOT CLASSIFIED BY OCCUPATION

- 909 Last worked 1984 or earlier

¹⁰Includes only uniquely military occupations. Other Armed Forces members are coded to civilian occupations.

APPENDIX C. CENSUS 2000 INDUSTRY CLASSIFICATION, WITH 1997 NORTH AMERICAN INDUSTRY CLASSIFICATION SYSTEM (NAICS) EQUIVALENTS

Census 2000		1997 NAICS
Code	Category Title	Codes
017	Crop production	111
018	Animal production	112
019	Forestry except logging	1131, 1132
027	Logging	1133
028	Fishing, hunting, and trapping	114
029	Support activities for agriculture and forestry	115
037	Oil and gas extraction	211
038	Coal mining	2121
039	Metal ore mining	2122
047	Nonmetallic mineral mining and quarrying	2123
048	Not specified type of mining	Part of 21
049	Support activities for mining	213
057	Electric power generation transmission and distribution	2211
058	Natural gas distribution	2212
059	Electric and gas and other combinations	Pts. 2211, 2212
067	Water, steam, air-conditioning, and irrigation systems	22131, 22133
068	Sewage treatment facilities	22132
069	Not specified utilities	Part of 22
077	Construction	23
107	Animal food, grain, and oilseed milling	3111, 3112
108	Sugar and confectionery products	3113
109	Fruit and vegetable preserving and specialty food manufacturing	3114
117	Dairy product manufacturing	3115
118	Animal slaughtering and processing	3116
119	Retail bakeries	311811
127	Bakeries except retail	3118 exc. 311811
128	Seafood and other miscellaneous foods n.e.c.	3117, 3119
129	Not specified food industries	Part of 311
137	Beverage manufacturing	3121
139	Tobacco manufacturing	3122
147	Fiber, yarn, and thread mills	3131
148	Fabric mills, except knitting	3132 exc. 31324
149	Textile and fabric finishing and coating mills	3133
157	Carpets and rugs manufacturing	31411
159	Textile product mills except carpets and rugs	314 exc. 31411
167	Knitting mills	31324, 3151
168	Cut and sew apparel manufacturing	3152
169	Apparel accessories and other apparel manufacturing	3159
177	Footwear manufacturing	3162
179	Leather tanning and products, except footwear manufacturing	3161, 3169
187	Pulp, paper, and paperboard mills	3221
188	Paperboard containers and boxes	32221

Census 2000		1997 NAICS
Code	Category Title	Codes
189	Miscellaneous paper and pulp products	32222, 32223, 32229
199	Printing and related support activities	3231
207	Petroleum refining	32411
209	Miscellaneous petroleum and coal products	32412, 32419
217	Resin, synthetic rubber and fibers, and filaments manufacturing	3252
218	Agricultural chemical manufacturing	3253
219	Pharmaceutical and medicine manufacturing	3254
227	Paint, coating, and adhesives manufacturing	3255
228	Soap, cleaning compound, and cosmetic manufacturing	3256
229	Industrial and miscellaneous chemicals	3251, 3259
237	Plastics product manufacturing	3261
238	Tire manufacturing	32621
239	Rubber products, except tires, manufacturing	32622, 32629
247	Pottery, ceramics, and related products manufacturing	32711
248	Structural clay product manufacturing	32712
249	Glass and glass product manufacturing	3272
257	Cement, concrete, lime, and gypsum product manufacturing	3273, 3274
259	Miscellaneous nonmetallic mineral product manufacturing	3279
267	Iron and steel mills and steel product manufacturing	3311, 3312
268	Aluminum production and processing	3313
269	Nonferrous metal, except aluminum, production and processing	3314
277	Foundries	3315
278	Metal forgings and stampings	3321
279	Cutlery and hand tool manufacturing	3322
287	Structural metals and tank and shipping container manufacturing	3323, 3324
288	Machine shops; turned product; screw nut and bolt manufacturing	3327
289	Coating, engraving, heat treating and allied activities	3328
297	Ordnance	332992-332995
298	Miscellaneous fabricated metal products manufacturing	3325, 3326, 3329 exc. 332992-332995
299	Not specified metal industries	Part of 331 and 332
307	Agricultural implement manufacturing	33311
308	Construction mining and oil field machinery manufacturing	33312, 33313
309	Commercial and service industry machinery manufacturing	3333
317	Metalworking machinery manufacturing	3335
318	Engines, turbines, and power transmission equipment manufacturing	3336
319	Machinery manufacturing, n.e.c.	3332, 3334, 3339
329	Not specified machinery manufacturing	Part of 333
336	Computer and peripheral equipment manufacturing	3341
337	Communications, audio, and video equipment manufacturing	3342, 3343
338	Navigational, measuring, electromedical, and control instruments manufacturing	3345
339	Electronic component and product manufacturing, n.e.c.	3344, 3346
347	Household appliance manufacturing	3352

Census 2000		1997 NAICS
Code	Category Title	Codes
349	Electrical machinery, equipment, and supplies manufacturing, n.e.c.	3351, 3353, 3359
357	Motor vehicles and motor vehicle equipment manufacturing	3361, 3362, 3363
358	Aircraft and parts manufacturing	336411-336413
359	Aerospace product and parts manufacturing	336414-336419
367	Railroad rolling stock manufacturing	3365
368	Ship and boat building	3366
369	Other transportation equipment manufacturing	3369
377	Sawmills and wood preservation	3211
378	Veneer, plywood, and engineered wood product manufacturing	3212
379	Prefabricated wood buildings and mobile homes manufacturing	321991, 321992
387	Miscellaneous wood product manufacturing	3219 exc. 321991, 321992
389	Furniture and fixtures	337
396	Medical equipment and supplies manufacturing	3391
397	Toys, amusement, and sporting goods manufacturing	33992, 33993
398	Miscellaneous manufacturing, n.e.c.	3399 exc. 33992, 33993
399	Not specified manufacturing industries	Part of 31-33
407	Motor vehicles, parts and supplies wholesalers	4211
408	Furniture and home furnishing wholesalers	4212
409	Lumber and other construction materials wholesalers	4213
417	Professional and commercial equipment and supplies wholesalers	4214
418	Metals and minerals, except petroleum, wholesalers	4215
419	Electrical goods wholesalers	4216
426	Hardware, plumbing and heating equipment, and supplies wholesalers	4217
427	Machinery, equipment, and supplies wholesalers	4218
428	Recyclable material wholesalers	42193
429	Miscellaneous durable goods wholesalers	4219 exc. 42193
437	Paper and paper product wholesalers	4221
438	Drugs, sundries, and chemical and allied product wholesalers	4222, 4226
439	Apparel, fabrics, and notions wholesalers	4223
447	Groceries and related product wholesalers	4224
448	Farm product raw material wholesalers	4225
449	Petroleum and petroleum product wholesalers	4227
456	Alcoholic beverage wholesalers	4228
457	Farm supplies wholesalers	42291
458	Miscellaneous nondurable goods wholesalers	4229 exc. 42291
459	Not specified wholesale trade	Part of 42
467	Automobile dealers	4411
468	Other motor vehicle dealers	4412
469	Auto parts, accessories, and tire stores	4413
477	Furniture and home furnishings stores	442
478	Household appliance stores	443111
479	Radio, TV, and computer stores	443112, 44312
487	Building material and supplies dealers	4441 exc. 44413

Census 2000		1997 NAICS
Code	Category Title	Codes
488	Hardware stores	44413
489	Lawn and garden equipment and supplies stores	4442
497	Grocery stores	4451
498	Specialty food stores	4452
499	Beer, wine, and liquor stores	4453
507	Pharmacies and drug stores	44611
508	Health and personal care, except drug, stores	446 exc. 44611
509	Gasoline stations	447
517	Clothing and accessories, except shoe, stores	448 exc. 44821 and 4483
518	Shoe stores	44821
519	Jewelry, luggage, and leather goods stores	4483
527	Sporting goods, camera, and hobby and toy stores	44313, 45111, 45112
528	Sewing, needlework and piece goods stores	45113
529	Music stores	45114, 45122
537	Book stores and news dealers	45121
538	Department stores	45211
539	Miscellaneous general merchandise stores	4529
547	Retail florists	4531
548	Office supplies and stationary stores	45321
549	Used merchandise stores	4533
557	Gift, novelty, and souvenir shops	45322
558	Miscellaneous retail stores	4539
559	Electronic shopping and mail-order houses	45411
567	Vending machine operators	45421
568	Fuel dealers	45431
569	Other direct selling establishments	45439
579	Not specified retail trade	Part of 44-45
607	Air transportation	481
608	Rail transportation	482
609	Water transportation	483
617	Truck transportation	484
618	Bus service and urban transit	4851, 4852, 4854-4859
619	Taxi and limousine service	4853
627	Pipeline transportation	486
628	Scenic and sightseeing transportation	487
629	Services incidental to transportation	488
637	Postal Service	491
638	Courier and messengers	492
639	Warehousing and storage	493
647	Newspaper publishers	51111
648	Publishing except newspapers and software	5111 exc. 51111
649	Software publishing	5112
657	Motion pictures and video industries	5121
659	Sound recording industries	5122
667	Radio and television broadcasting and cable	5131, 5132
668	Wired telecommunications carriers	51331

Census 2000		1997 NAICS
Code	Category Title	Codes
669	Other telecommunication services	5133 exc. 51331
677	Libraries and archives	51412
678	Other information services	5141 exc. 51412
679	Data processing services	5142
687	Banking and related activities	521, 52211, 52219
688	Savings institutions, including credit unions	52212, 52213
689	Non-depository credit and related activities	5222, 5223
697	Securities, commodities, funds, trusts, and other financial investments	523, 525
699	Insurance carriers and related activities	524
707	Real estate	531
708	Automotive equipment rental and leasing	5321
717	Video tape and disk rental	53223
718	Other consumer goods rental	53221, 53222, 53229, 5323
719	Commercial, industrial, and other intangible assets rental and leasing	5324, 533
727	Legal services	5411
728	Accounting, tax preparation, bookkeeping and payroll services	5412
729	Architectural, engineering, and related services	5413
737	Specialized design services	5414
738	Computer systems design and related services	5415
739	Management, scientific and technical consulting services	5416
746	Scientific research and development services	5417
747	Advertising and related services	5418
748	Veterinary services	54194
749	Other professional, scientific and technical services	5419 exc. 54194
757	Management of companies and enterprises	551
758	Employment services	5613
759	Business support services	5614
767	Travel arrangement and reservation services	5615
768	Investigation and security services	5616
769	Services to buildings and dwellings	5617 exc. 56173
777	Landscaping services	56173
778	Other administrative and other support services	5611, 5612, 5619
779	Waste management and remediation services	562
786	Elementary and secondary schools	6111
787	Colleges and universities, including junior colleges	6112, 6113
788	Business, technical, and trade schools and training	6114, 6115
789	Other schools, instruction, and educational services	6116, 6117
797	Offices of physicians	6211
798	Offices of dentists	6212
799	Office of chiropractors	62131
807	Offices of optometrists	62132
808	Offices of other health practitioners	6213 exc. 62131, 62132
809	Outpatient care centers	6214

Census 2000		1997 NAICS
Code	Category Title	Codes
817	Home health care services	6216
818	Other health care services	6215, 6219
819	Hospitals	622
827	Nursing care facilities	6231
829	Residential care facilities, without nursing	6232, 6233, 6239
837	Individual and family services	6241
838	Community food and housing, and emergency services	6242
839	Vocational rehabilitation services	6243
847	Child day care services	6244
856	Independent artists, performing arts, spectator sports, and related industries	711
857	Museums, art galleries, historical sites, and similar institutions	712
858	Bowling centers	71395
859	Other amusement, gambling, and recreation industries	713 exc. 71395
866	Traveler accommodation	7211
867	Recreational vehicle parks and camps, and rooming and boarding houses	7212, 7213
868	Restaurants and other food services	722 exc. 7224
869	Drinking places, alcoholic beverages	7224
877	Automotive repair and maintenance	8111 exc. 811192
878	Car washes	811192
879	Electronic and precision equipment repair and maintenance	8112
887	Commercial and industrial machinery and equipment repair and maintenance	8113
888	Personal and household goods repair and maintenance	8114 exc. 81143
889	Footwear and leather goods repair	81143
897	Barber shops	812111
898	Beauty salons	812112
899	Nail salons and other personal care services	812113, 81219
907	Drycleaning and laundry services	8123
908	Funeral homes, cemeteries and crematories	8122
909	Other personal services	8129
916	Religious organizations	8131
917	Civic, social, advocacy organizations, and grantmaking and giving services	8132, 8133, 8134
918	Labor unions	81393
919	Business, professional, political, and similar organizations	8139 exc. 81393
929	Private households	814
937	Executive offices and legislative bodies	92111, 92112, 92114, pt. 92115
938	Public finance activities	92113
939	Other general government and support	92119
947	Justice, public order, and safety activities	922, pt. 92115
948	Administration of human resource programs	923
949	Administration of environmental quality and housing programs	924, 925

Census 2000		1997 NAICS
Code	Category Title	Codes
957	Administration of economic programs and space research	926, 927
959	National security and international affairs	928
967	U. S. Army	Part of 928
968	U. S. Air Force	Part of 928
969	U. S. Navy	Part of 928
977	U. S. Marines	Part of 928
978	U. S. Coast Guard	Part of 928
979	U. S. Armed Forces, branch not specified	Part of 928
987	Military Reserves or National Guard	Part of 928
992	Unemployed, last worked 1994 or earlier or never worked	none

**APPENDIX D. CENSUS 2000 OCCUPATIONAL CLASSIFICATION, WITH 2000
STANDARD OCCUPATIONAL CLASSIFICATION (SOC) EQUIVALENTS**

Census 2000		2000 SOC
Code	Category Title	Codes
001	Chief Executives	11-1011
002	General and Operations Managers	11-1021
003	Legislators	11-1031
004	Advertising and Promotions Managers	11-2011
005	Marketing and Sales Managers	11-2020
006	Public Relations Managers	11-2031
010	Administrative Services Managers	11-3011
011	Computer and Information Systems Managers	11-3021
012	Financial Managers	11-3031
013	Human Resources Managers	11-3040
014	Industrial Production Managers	11-3051
015	Purchasing Managers	11-3061
016	Transportation, Storage, and Distribution Managers	11-3071
020	Farm, Ranch, and Other Agricultural Managers	11-9011
021	Farmers and Ranchers	11-9012
022	Construction Managers	11-9021
023	Education Administrators	11-9030
030	Engineering Managers	11-9041
031	Food Service Managers	11-9051
032	Funeral Directors	11-9061
033	Gaming Managers	11-9071
034	Lodging Managers	11-9081
035	Medical and Health Services Managers	11-9111
036	Natural Sciences Managers	11-9121
040	Postmasters and Mail Superintendents	11-9131
041	Property, Real Estate, and Community Association Managers	11-9141
042	Social and Community Service Managers	11-9151
043	Managers, All Other	11-9199
050	Agents and Business Managers of Artists, Performers, and Athletes	13-1011
051	Purchasing Agents and Buyers, Farm Products	13-1021
052	Wholesale and Retail Buyers, Except Farm Products	13-1022
053	Purchasing Agents, Except Wholesale, Retail, and Farm Products	13-1023
054	Claims Adjusters, Appraisers, Examiners, and Investigators	13-1030
056	Compliance Officers, Except Agriculture, Construction, Health and Safety, and Transportation	13-1041
060	Cost Estimators	13-1051
062	Human Resources, Training, and Labor Relations Specialists	13-1070
070	Logisticians	13-1081
071	Management Analysts	13-1111
072	Meeting and Convention Planners	13-1121
073	Other Business Operations Specialists	13-1061, 13-1199
080	Accountants and Auditors	13-2011
081	Appraisers and Assessors of Real Estate	13-2021
082	Budget Analysts	13-2031
083	Credit Analysts	13-2041
084	Financial Analysts	13-2051
085	Personal Financial Advisors	13-2052

Census 2000		2000 SOC
Code	Category Title	Codes
086	Insurance Underwriters	13-2053
090	Financial Examiners	13-2061
091	Loan Counselors and Officers	13-2070
093	Tax Examiners, Collectors, and Revenue Agents	13-2081
094	Tax Preparers	13-2082
095	Financial Specialists, All Other	13-2099
100	Computer Scientists and Systems Analysts	15-1011, 15-1051, 15-1099
101	Computer Programmers	15-1021
102	Computer Software Engineers	15-1030
104	Computer Support Specialists	15-1041
106	Database Administrators	15-1061
110	Network and Computer Systems Administrators	15-1071
111	Network Systems and Data Communications Analysts	15-1081
120	Actuaries	15-2011
121	Mathematicians	15-2021
122	Operations Research Analysts	15-2031
123	Statisticians	15-2041
124	Miscellaneous Mathematical Science Occupations	15-2090
130	Architects, Except Naval	17-1010
131	Surveyors, Cartographers, and Photogrammetrists	17-1020
132	Aerospace Engineers	17-2011
133	Agricultural Engineers	17-2021
134	Biomedical Engineers	17-2031
135	Chemical Engineers	17-2041
136	Civil Engineers	17-2051
140	Computer Hardware Engineers	17-2061
141	Electrical and Electronics Engineers	17-2070
142	Environmental Engineers	17-2081
143	Industrial Engineers, Including Health and Safety	17-2110
144	Marine Engineers and Naval Architects	17-2121
145	Materials Engineers	17-2131
146	Mechanical Engineers	17-2141
150	Mining and Geological Engineers, Including Mining Safety Engineers	17-2151
151	Nuclear Engineers	17-2161
152	Petroleum Engineers	17-2171
153	Engineers, All Other	17-2199
154	Drafters	17-3010
155	Engineering Technicians, Except Drafters	17-3020
156	Surveying and Mapping Technicians	17-3031
160	Agricultural and Food Scientists	19-1010
161	Biological Scientists	19-1020
164	Conservation Scientists and Foresters	19-1030
165	Medical Scientists	19-1040
170	Astronomers and Physicists	19-2010
171	Atmospheric and Space Scientists	19-2021
172	Chemists and Materials Scientists	19-2030
174	Environmental Scientists and Geoscientists	19-2040
176	Physical Scientists, All Other	19-2099
180	Economists	19-3011
181	Market and Survey Researchers	19-3020

Census 2000		2000 SOC
Code	Category Title	Codes
182	Psychologists	19-3030
183	Sociologists	19-3041
184	Urban and Regional Planners	19-3051
186	Miscellaneous Social Scientists and Related Workers	19-3090
190	Agricultural and Food Science Technicians	19-4011
191	Biological Technicians	19-4021
192	Chemical Technicians	19-4031
193	Geological and Petroleum Technicians	19-4041
194	Nuclear Technicians	19-4051
196	Other Life, Physical, and Social Science Technicians	19-4061, 19-4090
200	Counselors	21-1010
201	Social Workers	21-1020
202	Miscellaneous Community and Social Service Specialists	21-1090
204	Clergy	21-2011
205	Directors, Religious Activities and Education	21-2021
206	Religious Workers, All Other	21-2099
210	Lawyers	23-1011
211	Judges, Magistrates, and Other Judicial Workers	23-1020
214	Paralegals and Legal Assistants	23-2011
215	Miscellaneous Legal Support Workers	23-2090
220	Postsecondary Teachers	25-1000
230	Preschool and Kindergarten Teachers	25-2010
231	Elementary and Middle School Teachers	25-2020
232	Secondary School Teachers	25-2030
233	Special Education Teachers	25-2040
234	Other Teachers and Instructors	25-3000
240	Archivists, Curators, and Museum Technicians	25-4010
243	Librarians	25-4021
244	Library Technicians	25-4031
254	Teacher Assistants	25-9041
255	Other Education, Training, and Library Workers	25-9011, 25-9021, 25-9031, 25-9099
260	Artists and Related Workers	27-1010
263	Designers	27-1020
270	Actors	27-2011
271	Producers and Directors	27-2012
272	Athletes, Coaches, Umpires, and Related Workers	27-2020
274	Dancers and Choreographers	27-2030
275	Musicians, Singers, and Related Workers	27-2040
276	Entertainers and Performers, Sports and Related Workers, All Other	27-2099
280	Announcers	27-3010
281	News Analysts, Reporters and Correspondents	27-3020
282	Public Relations Specialists	27-3031
283	Editors	27-3041
284	Technical Writers	27-3042
285	Writers and Authors	27-3043
286	Miscellaneous Media and Communication Workers	27-3090
290	Broadcast and Sound Engineering Technicians and Radio Operators	27-4010
291	Photographers	27-4021

Census 2000		2000 SOC
Code	Category Title	Codes
292	Television, Video, and Motion Picture Camera Operators and Editors	27-4030
296	Media and Communication Equipment Workers, All Other	27-4099
300	Chiropractors	29-1011
301	Dentists	29-1020
303	Dietitians and Nutritionists	29-1031
304	Optometrists	29-1041
305	Pharmacists	29-1051
306	Physicians and Surgeons	29-1060
311	Physician Assistants	29-1071
312	Podiatrists	29-1081
313	Registered Nurses	29-1111
314	Audiologists	29-1121
315	Occupational Therapists	29-1122
316	Physical Therapists	29-1123
320	Radiation Therapists	29-1124
321	Recreational Therapists	29-1125
322	Respiratory Therapists	29-1126
323	Speech-Language Pathologists	29-1127
324	Therapists, All Other	29-1129
325	Veterinarians	29-1131
326	Health Diagnosing and Treating Practitioners, All Other	29-1199
330	Clinical Laboratory Technologists and Technicians	29-2010
331	Dental Hygienists	29-2021
332	Diagnostic Related Technologists and Technicians	29-2030
340	Emergency Medical Technicians and Paramedics	29-2041
341	Health Diagnosing and Treating Practitioner Support Technicians	29-2050
350	Licensed Practical and Licensed Vocational Nurses	29-2061
351	Medical Records and Health Information Technicians	29-2071
352	Opticians, Dispensing	29-2081
353	Miscellaneous Health Technologists and Technicians	29-2090
354	Other Healthcare Practitioners and Technical Occupations	29-9000
360	Nursing, Psychiatric, and Home Health Aides	31-1010
361	Occupational Therapist Assistants and Aides	31-2010
362	Physical Therapist Assistants and Aides	31-2020
363	Massage Therapists	31-9011
364	Dental Assistants	31-9091
365	Medical Assistants and Other Healthcare Support Occupations	31-9092, 31-9093, 31-9094, 31-9095, 31-9096, 31-9099
370	First-Line Supervisors/Managers of Correctional Officers	33-1011
371	First-Line Supervisors/Managers of Police and Detectives	33-1012
372	First-Line Supervisors/Managers of Fire Fighting and Prevention Workers	33-1021
373	Supervisors, Protective Service Workers, All Other	33-1099
374	Fire Fighters	33-2011
375	Fire Inspectors	33-2020
380	Bailiffs, Correctional Officers, and Jailers	33-3010
382	Detectives and Criminal Investigators	33-3021
383	Fish and Game Wardens	33-3031

Census 2000		2000 SOC
Code	Category Title	Codes
384	Parking Enforcement Workers	33-3041
385	Police and Sheriff's Patrol Officers	33-3051
386	Transit and Railroad Police	33-3052
390	Animal Control Workers	33-9011
391	Private Detectives and Investigators	33-9021
392	Security Guards and Gaming Surveillance Officers	33-9030
394	Crossing Guards	33-9091
395	Lifeguards and Other Protective Service Workers	33-9092, 33-9099
400	Chefs and Head Cooks	35-1011
401	First-Line Supervisors/Managers of Food Preparation and Serving Workers	35-1012
402	Cooks	35-2010
403	Food Preparation Workers	35-2021
404	Bartenders	35-3011
405	Combined Food Preparation and Serving Workers, Including Fast Food	35-3021
406	Counter Attendants, Cafeteria, Food Concession, and Coffee Shop	35-3022
411	Waiters and Waitresses	35-3031
412	Food Servers, Nonrestaurant	35-3041
413	Dining Room and Cafeteria Attendants and Bartender Helpers	35-9011
414	Dishwashers	35-9021
415	Hosts and Hostesses, Restaurant, Lounge, and Coffee Shop	35-9031
416	Food Preparation and Serving Related Workers, All Other	35-9099
420	First-Line Supervisors/Managers of Housekeeping and Janitorial Workers	37-1011
421	First-Line Supervisors/Managers of Landscaping, Lawn Service, and Groundskeeping Workers	37-1012
422	Janitors and Building Cleaners	37-2011, 37-2019
423	Maids and Housekeeping Cleaners	37-2012
424	Pest Control Workers	37-2021
425	Grounds Maintenance Workers	37-3010
430	First-Line Supervisors/Managers of Gaming Workers	39-1010
432	First-Line Supervisors/Managers of Personal Service Workers	39-1021
434	Animal Trainers	39-2011
435	Nonfarm Animal Caretakers	39-2021
440	Gaming Services Workers	39-3010
441	Motion Picture Projectionists	39-3021
442	Ushers, Lobby Attendants, and Ticket Takers	39-3031
443	Miscellaneous Entertainment Attendants and Related Workers	39-3090
446	Funeral Service Workers	39-4000
450	Barbers	39-5011
451	Hairdressers, Hairstylists, and Cosmetologists	39-5012
452	Miscellaneous Personal Appearance Workers	39-5090
453	Baggage Porters, Bellhops, and Concierges	39-6010
454	Tour and Travel Guides	39-6020
455	Transportation Attendants	39-6030
460	Child Care Workers	39-9011
461	Personal and Home Care Aides	39-9021
462	Recreation and Fitness Workers	39-9030
464	Residential Advisors	39-9041
465	Personal Care and Service Workers, All Other	39-9099

Census 2000		2000 SOC
Code	Category Title	Codes
470	First-Line Supervisors/Managers of Retail Sales Workers	41-1011
471	First-Line Supervisors/Managers of Non-Retail Sales Workers	41-1012
472	Cashiers	41-2010
474	Counter and Rental Clerks	41-2021
475	Parts Salespersons	41-2022
476	Retail Salespersons	41-2031
480	Advertising Sales Agents	41-3011
481	Insurance Sales Agents	41-3021
482	Securities, Commodities, and Financial Services Sales Agents	41-3031
483	Travel Agents	41-3041
484	Sales Representatives, Services, All Other	41-3099
485	Sales Representatives, Wholesale and Manufacturing	41-4010
490	Models, Demonstrators, and Product Promoters	41-9010
492	Real Estate Brokers and Sales Agents	41-9020
493	Sales Engineers	41-9031
494	Telemarketers	41-9041
495	Door-To-Door Sales Workers, News and Street Vendors, and Related Workers	41-9091
496	Sales and Related Workers, All Other	41-9099
500	First-Line Supervisors/Managers of Office and Administrative Support Workers	43-1011
501	Switchboard Operators, Including Answering Service	43-2011
502	Telephone Operators	43-2021
503	Communications Equipment Operators, All Other	43-2099
510	Bill and Account Collectors	43-3011
511	Billing and Posting Clerks and Machine Operators	43-3021
512	Bookkeeping, Accounting, and Auditing Clerks	43-3031
513	Gaming Cage Workers	43-3041
514	Payroll and Timekeeping Clerks	43-3051
515	Procurement Clerks	43-3061
516	Tellers	43-3071
520	Brokerage Clerks	43-4011
521	Correspondence Clerks	43-4021
522	Court, Municipal, and License Clerks	43-4031
523	Credit Authorizers, Checkers, and Clerks	43-4041
524	Customer Service Representatives	43-4051
525	Eligibility Interviewers, Government Programs	43-4061
526	File Clerks	43-4071
530	Hotel, Motel, and Resort Desk Clerks	43-4081
531	Interviewers, Except Eligibility and Loan	43-4111
532	Library Assistants, Clerical	43-4121
533	Loan Interviewers and Clerks	43-4131
534	New Accounts Clerks	43-4141
535	Order Clerks	43-4151
536	Human Resources Assistants, Except Payroll and Timekeeping	43-4161
540	Receptionists and Information Clerks	43-4171
541	Reservation and Transportation Ticket Agents and Travel Clerks	43-4181
542	Information and Record Clerks, All Other	43-4199
550	Cargo and Freight Agents	43-5011
551	Couriers and Messengers	43-5021
552	Dispatchers	43-5030
553	Meter Readers, Utilities	43-5041

Census 2000		2000 SOC
Code	Category Title	Codes
554	Postal Service Clerks	43-5051
555	Postal Service Mail Carriers	43-5052
556	Postal Service Mail Sorters, Processors, and Processing Machine Operators	43-5053
560	Production, Planning, and Expediting Clerks	43-5061
561	Shipping, Receiving, and Traffic Clerks	43-5071
562	Stock Clerks and Order Fillers	43-5081
563	Weighers, Measurers, Checkers, and Samplers, Recordkeeping	43-5111
570	Secretaries and Administrative Assistants	43-6010
580	Computer Operators	43-9011
581	Data Entry Keyers	43-9021
582	Word Processors and Typists	43-9022
583	Desktop Publishers	43-9031
584	Insurance Claims and Policy Processing Clerks	43-9041
585	Mail Clerks and Mail Machine Operators, Except Postal Service	43-9051
586	Office Clerks, General	43-9061
590	Office Machine Operators, Except Computer	43-9071
591	Proofreaders and Copy Markers	43-9081
592	Statistical Assistants	43-9111
593	Office and Administrative Support Workers, All Other	43-9199
600	First-Line Supervisors/Managers of Farming, Fishing, and Forestry Workers	45-1010
601	Agricultural Inspectors	45-2011
602	Animal Breeders	45-2021
604	Graders and Sorters, Agricultural Products	45-2041
605	Miscellaneous Agricultural Workers	45-2090
610	Fishers and Related Fishing Workers	45-3011
611	Hunters and Trappers	45-3021
612	Forest and Conservation Workers	45-4011
613	Logging Workers	45-4020
620	First-Line Supervisors/Managers of Construction Trades and Extraction Workers	47-1011
621	Boilermakers	47-2011
622	Brickmasons, Blockmasons, and Stonemasons	47-2020
623	Carpenters	47-2031
624	Carpet, Floor, and Tile Installers and Finishers	47-2040
625	Cement Masons, Concrete Finishers, and Terrazzo Workers	47-2050
626	Construction Laborers	47-2061
630	Paving, Surfacing, and Tamping Equipment Operators	47-2071
631	Pile-Driver Operators	47-2072
632	Operating Engineers and Other Construction Equipment Operators	47-2073
633	Drywall Installers, Ceiling Tile Installers, and Tapers	47-2080
635	Electricians	47-2111
636	Glaziers	47-2121
640	Insulation Workers	47-2130
642	Painters, Construction and Maintenance	47-2141
643	Paperhangers	47-2142
644	Pipelayers, Plumbers, Pipefitters, and Steamfitters	47-2150
646	Plasterers and Stucco Masons	47-2161
650	Reinforcing Iron and Rebar Workers	47-2171
651	Roofers	47-2181
652	Sheet Metal Workers	47-2211

Census 2000		2000 SOC
Code	Category Title	Codes
653	Structural Iron and Steel Workers	47-2221
660	Helpers, Construction Trades	47-3010
666	Construction and Building Inspectors	47-4011
670	Elevator Installers and Repairers	47-4021
671	Fence Erectors	47-4031
672	Hazardous Materials Removal Workers	47-4041
673	Highway Maintenance Workers	47-4051
674	Rail-Track Laying and Maintenance Equipment Operators	47-4061
675	Septic Tank Servicers and Sewer Pipe Cleaners	47-4071
676	Miscellaneous Construction and Related Workers	47-4090
680	Derrick, Rotary Drill, and Service Unit Operators, Oil, Gas, and Mining	47-5010
682	Earth Drillers, Except Oil and Gas	47-5021
683	Explosives Workers, Ordnance Handling Experts, and Blasters	47-5031
684	Mining Machine Operators	47-5040
691	Roof Bolters, Mining	47-5061
692	Roustabouts, Oil and Gas	47-5071
693	Helpers--Extraction Workers	47-5081
694	Other Extraction Workers	47-5051, 47-5099
700	First-Line Supervisors/Managers of Mechanics, Installers, and Repairers	49-1011
701	Computer, Automated Teller, and Office Machine Repairers	49-2011
702	Radio and Telecommunications Equipment Installers and Repairers	49-2020
703	Avionics Technicians	49-2091
704	Electric Motor, Power Tool, and Related Repairers	49-2092
705	Electrical and Electronics Installers and Repairers, Transportation Equipment	49-2093
710	Electrical and Electronics Repairers, Industrial and Utility	49-2094, 49-2095
711	Electronic Equipment Installers and Repairers, Motor Vehicles	49-2096
712	Electronic Home Entertainment Equipment Installers and Repairers	49-2097
713	Security and Fire Alarm Systems Installers	49-2098
714	Aircraft Mechanics and Service Technicians	49-3011
715	Automotive Body and Related Repairers	49-3021
716	Automotive Glass Installers and Repairers	49-3022
720	Automotive Service Technicians and Mechanics	49-3023
721	Bus and Truck Mechanics and Diesel Engine Specialists	49-3031
722	Heavy Vehicle and Mobile Equipment Service Technicians and Mechanics	49-3040
724	Small Engine Mechanics	49-3050
726	Miscellaneous Vehicle and Mobile Equipment Mechanics, Installers, and Repairers	49-3090
730	Control and Valve Installers and Repairers	49-9010
731	Heating, Air Conditioning, and Refrigeration Mechanics and Installers	49-9021
732	Home Appliance Repairers	49-9031
733	Industrial and Refractory Machinery Mechanics	49-9041, 49-9045
734	Maintenance and Repair Workers, General	49-9042
735	Maintenance Workers, Machinery	49-9043
736	Millwrights	49-9044
741	Electrical Power-Line Installers and Repairers	49-9051
742	Telecommunications Line Installers and Repairers	49-9052
743	Precision Instrument and Equipment Repairers	49-9060

Census 2000		2000 SOC
Code	Category Title	Codes
751	Coin, Vending, and Amusement Machine Servicers and Repairers	49-9091
752	Commercial Divers	49-9092
754	Locksmiths and Safe Repairers	49-9094
755	Manufactured Building and Mobile Home Installers	49-9095
756	Riggers	49-9096
760	Signal and Track Switch Repairers	49-9097
761	Helpers--Installation, Maintenance, and Repair Workers	49-9098
762	Other Installation, Maintenance, and Repair Workers	49-9093, 49-9099
770	First-Line Supervisors/Managers of Production and Operating Workers	51-1011
771	Aircraft Structure, Surfaces, Rigging, and Systems Assemblers	51-2011
772	Electrical, Electronics, and Electromechanical Assemblers	51-2020
773	Engine and Other Machine Assemblers	51-2031
774	Structural Metal Fabricators and Fitters	51-2041
775	Miscellaneous Assemblers and Fabricators	51-2090
780	Bakers	51-3011
781	Butchers and Other Meat, Poultry, and Fish Processing Workers	51-3020
783	Food and Tobacco Roasting, Baking, and Drying Machine Operators and Tenders	51-3091
784	Food Batchmakers	51-3092
785	Food Cooking Machine Operators and Tenders	51-3093
790	Computer Control Programmers and Operators	51-4010
792	Extruding and Drawing Machine Setters, Operators, and Tenders, Metal and Plastic	51-4021
793	Forging Machine Setters, Operators, and Tenders, Metal and Plastic	51-4022
794	Rolling Machine Setters, Operators, and Tenders, Metal and Plastic	51-4023
795	Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic	51-4031
796	Drilling and Boring Machine Tool Setters, Operators, and Tenders, Metal and Plastic	51-4032
800	Grinding, Lapping, Polishing, and Buffing Machine Tool Setters, Operators, and Tenders, Metal and Plastic	51-4033
801	Lathe and Turning Machine Tool Setters, Operators, and Tenders, Metal and Plastic	51-4034
802	Milling and Planing Machine Setters, Operators, and Tenders, Metal and Plastic	51-4035
803	Machinists	51-4041
804	Metal Furnace and Kiln Operators and Tenders	51-4050
806	Model Makers and Patternmakers, Metal and Plastic	51-4060
810	Molders and Molding Machine Setters, Operators, and Tenders, Metal and Plastic	51-4070
812	Multiple Machine Tool Setters, Operators, and Tenders, Metal and Plastic	51-4081
813	Tool and Die Makers	51-4111
814	Welding, Soldering, and Brazing Workers	51-4120
815	Heat Treating Equipment Setters, Operators, and Tenders, Metal and Plastic	51-4191
816	Lay-Out Workers, Metal and Plastic	51-4192
820	Plating and Coating Machine Setters, Operators, and Tenders, Metal and Plastic	51-4193
821	Tool Grinders, Filers, and Sharpeners	51-4194
822	Metalworkers and Plastic Workers, All Other	51-4199
823	Bookbinders and Bindery Workers	51-5010

Census 2000		2000 SOC
Code	Category Title	Codes
824	Job Printers	51-5021
825	Prepress Technicians and Workers	51-5022
826	Printing Machine Operators	51-5023
830	Laundry and Dry-Cleaning Workers	51-6011
831	Pressers, Textile, Garment, and Related Materials	51-6021
832	Sewing Machine Operators	51-6031
833	Shoe and Leather Workers and Repairers	51-6041
834	Shoe Machine Operators and Tenders	51-6042
835	Tailors, Dressmakers, and Sewers	51-6050
836	Textile Bleaching and Dyeing Machine Operators and Tenders	51-6061
840	Textile Cutting Machine Setters, Operators, and Tenders	51-6062
841	Textile Knitting and Weaving Machine Setters, Operators, and Tenders	51-6063
842	Textile Winding, Twisting, and Drawing Out Machine Setters, Operators, and Tenders	51-6064
843	Extruding and Forming Machine Setters, Operators, and Tenders, Synthetic and Glass Fibers	51-6091
844	Fabric and Apparel Patternmakers	51-6092
845	Upholsterers	51-6093
846	Textile, Apparel, and Furnishings Workers, All Other	51-6099
850	Cabinetmakers and Bench Carpenters	51-7011
851	Furniture Finishers	51-7021
852	Model Makers and Patternmakers, Wood	51-7030
853	Sawing Machine Setters, Operators, and Tenders, Wood	51-7041
854	Woodworking Machine Setters, Operators, and Tenders, Except Sawing	51-7042
855	Woodworkers, All Other	51-7099
860	Power Plant Operators, Distributors, and Dispatchers	51-8010
861	Stationary Engineers and Boiler Operators	51-8021
862	Water and Liquid Waste Treatment Plant and System Operators	51-8031
863	Miscellaneous Plant and System Operators	51-8090
864	Chemical Processing Machine Setters, Operators, and Tenders	51-9010
865	Crushing, Grinding, Polishing, Mixing, and Blending Workers	51-9020
871	Cutting Workers	51-9030
872	Extruding, Forming, Pressing, and Compacting Machine Setters, Operators, and Tenders	51-9041
873	Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders	51-9051
874	Inspectors, Testers, Sorters, Samplers, and Weighers	51-9061
875	Jewelers and Precious Stone and Metal Workers	51-9071
876	Medical, Dental, and Ophthalmic Laboratory Technicians	51-9080
880	Packaging and Filling Machine Operators and Tenders	51-9111
881	Painting Workers	51-9120
883	Photographic Process Workers and Processing Machine Operators	51-9130
884	Semiconductor Processors	51-9141
885	Cementing and Gluing Machine Operators and Tenders	51-9191
886	Cleaning, Washing, and Metal Pickling Equipment Operators and Tenders	51-9192
890	Cooling and Freezing Equipment Operators and Tenders	51-9193
891	Etchers and Engravers	51-9194
892	Molders, Shapers, and Casters, Except Metal and Plastic	51-9195
893	Paper Goods Machine Setters, Operators, and Tenders	51-9196
894	Tire Builders	51-9197
895	Helpers--Production Workers	51-9198
896	Production Workers, All Other	51-9199
900	Supervisors, Transportation and Material Moving Workers	53-1000

Census 2000		2000 SOC
Code	Category Title	Codes
903	Aircraft Pilots and Flight Engineers	53-2010
904	Air Traffic Controllers and Airfield Operations Specialists	53-2020
911	Ambulance Drivers and Attendants, Except Emergency Medical Technicians	53-3011
912	Bus Drivers	53-3020
913	Driver/Sales Workers and Truck Drivers	53-3030
914	Taxi Drivers and Chauffeurs	53-3041
915	Motor Vehicle Operators, All Other	53-3099
920	Locomotive Engineers and Operators	53-4010
923	Railroad Brake, Signal, and Switch Operators	53-4021
924	Railroad Conductors and Yardmasters	53-4031
926	Subway, Streetcar, and Other Rail Transportation Workers	53-4041, 53-4099
930	Sailors and Marine Oilers	53-5011
931	Ship and Boat Captains and Operators	53-5020
933	Ship Engineers	53-5031
934	Bridge and Lock Tenders	53-6011
935	Parking Lot Attendants	53-6021
936	Service Station Attendants	53-6031
941	Transportation Inspectors	53-6051
942	Other Transportation Workers	53-6041, 53-6099
950	Conveyor Operators and Tenders	53-7011
951	Crane and Tower Operators	53-7021
952	Dredge, Excavating, and Loading Machine Operators	53-7030
956	Hoist and Winch Operators	53-7041
960	Industrial Truck and Tractor Operators	53-7051
961	Cleaners of Vehicles and Equipment	53-7061
962	Laborers and Freight, Stock, and Material Movers, Hand	53-7062
963	Machine Feeders and Offbearers	53-7063
964	Packers and Packagers, Hand	53-7064
965	Pumping Station Operators	53-7070
972	Refuse and Recyclable Material Collectors	53-7081
973	Shuttle Car Operators	53-7111
974	Tank Car, Truck, and Ship Loaders	53-7121
975	Material Moving Workers, All Other	53-7199
980	Military Officer Special and Tactical Operations Leaders/Managers	55-1010
981	First-Line Enlisted Military Supervisors/Managers	55-2010
982	Military Enlisted Tactical Operations and Air/Weapons Specialists and Crew Members	55-3010
983	Military, Rank Not Specified	none
992	Unemployed, last worked 1994 or earlier or never worked	none

APPENDIX E. BIBLIOGRAPHY OF RELATED TEXTS AND REPORTS

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APPENDIX F. GLOSSARY OF TERMS AND ABBREVIATIONS USED IN THIS PAPER

The data shown in this report were developed from a sample of data collected in the 1990 Census. Therefore, most of the definitions refer to that census. The labor force definitions did not change between 1990 and 2000.

Census

The Census Bureau takes a number of censuses. However, the term "Census" in this report refers to the decennial censuses, particularly those done in 1990 and 2000.

Civilian Labor Force

The civilian labor force consists of people classified as employed and unemployed according to the following criteria:

Employed - Employed people include all civilians 16 years and over who were either (a) "at work"- those who did any work at all during the reference week as paid employees or in their own business, profession, or farm, or who worked 15 hours or more as unpaid workers on a family farm or in a family business; or (b) "with a job but not at work"- those who did not work during the reference week but had jobs or businesses from which they were temporarily absent due to illness, bad weather, industrial dispute, vacation, or other personal reasons. Excluded from the employed are people whose only activity consisted of work around the house or volunteer work for religious, charitable, and similar organizations.

Unemployed - People are classified as unemployed if they are civilians 16 years old and over and (a) were neither "at work" nor "with a job but not at work" during the reference week, (b) were looking for work during the last 4 weeks, and (c) were available to accept a job. Also included as unemployed are people who did not work at all during the reference week and were waiting to be called back to a job from which they had been laid off.

Experienced Unemployed - Unemployed people who have worked at any time in the past are classified as the "experienced unemployed." Census data are collected, however, only for the experienced unemployed who had a job in the previous 5 years.

Experienced Civilian Labor Force (ECLF) - Includes the employed and experienced unemployed. Data shown in this report reflect information about the employed and the experienced unemployed who had a job in the 5 years prior to the census in which their data were collected.

Class of Worker

The information on class of worker refers to the same job as the respondent's industry and occupation. The definitions of the class of worker categories are as follows:

Private wage and salary workers - People who work for a private employer for wages, salary, commission, tips, pay-in-kind, or at piece rates. This category also includes self-employed people whose business is incorporated, because they are paid employees of their own companies.

Government workers - Employees of any federal, state, or local governmental unit, regardless of the activity of the agency.

Self-employed workers - People who work for profit or fees in their own unincorporated business, profession, or trade; or who operate a farm.

Unpaid family workers - People who work without pay in a business or on a farm operated by a relative.

Salaried/Self-employed - In tabulations that categorize people as either salaried or self-employed, the salaried category includes private and government wage and salary workers; while the self-employed includes self-employed people and unpaid family workers.

Crosswalk

A crosswalk is a table or chart that shows the relationship between two classification systems or two sets of data. Crosswalks can take three forms:

Categorical crosswalks show the relationship between **categories** in different classification systems. Appendices A through D in this paper are examples of categorical crosswalks.

Conversion crosswalks provide conversion factors or other information that enable the user to convert one classification to another. Tables 1-7 in this paper are examples of conversion crosswalks.

Data crosswalks apply conversion factors to data so that one data set becomes comparable to another. These crosswalks show **numbers of people** in each category after conversion from one classification to another. Tables 8 and 9 in this report are examples of data crosswalks.

Double-coding

“Double-coding” is the assignment of a set of data into two different classification systems. This paper discusses two examples of double-coding: first, all the industry and occupation descriptions and titles in the Census Bureau’s *Classified Index of Industries and Occupations* were assigned to both the 1990 and 2000 classification systems; second, a sample of responses from the 1990 Census were also assigned to both classification systems.

ECLF

Experienced Civilian Labor Force. See its definition under Civilian Labor Force, above.

ECPC

Economic Classification Policy Committee.

Industry and Occupation

The 1990 census questionnaires obtained industry and occupation data for the employed, the experienced unemployed, and people 16 years and over with work experience but not currently in the labor force. For the last two categories, the data are for the most recent job that a person held during the previous 5 years. For people who worked at two or more jobs, the data refer to the job at which the person worked the greatest number of hours.

NAICS

North American Industry Classification System.

N.e.c.

Not elsewhere classified.

NPC

The Census Bureau's National Processing Center in Jeffersonville, Indiana.

OMB

U.S. Office of Management and Budget.

PUMS

Public Use Microdata Samples.

Reference Week

Data about the labor force relate to the calendar week before the one in which the census respondents completed their questionnaires or were interviewed by enumerators. The reference week is not the same for all respondents because not all people were enumerated during the same week. Since Census Days were April 1, 1990 and April 1, 2000, the reference weeks for many respondents were the last week of March 1990 or March 2000, respectively.

SF- or STF-

Summary File or Summary Tape File.

SIC

Standard Industrial Classification.

SOC

Standard Occupational Classification.

SOCRPC

Standard Occupational Classification Revision Policy Committee.

