

BLS WORKING PAPERS



U.S. DEPARTMENT OF LABOR
Bureau of Labor Statistics

OFFICE OF PRODUCTIVITY AND TECHNOLOGY

Proposed Category System for 1960-2000 Census Occupations

Peter B. Meyer, U.S. Bureau of Labor Statistics
Anastasiya M. Osborne, U.S. Bureau of Labor Statistics

Working Paper 383
September 2005

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9 September 2005

By Peter B. Meyer and Anastasiya M. Osborne
Office of Productivity and Technology¹
U.S. Bureau of Labor Statistics

Abstract

This paper proposes a detailed, consistent category system for occupations in the Census of Population data from 1960 to 2000. Most of the categories are based on the 1990 Census occupation definitions. We analyze employment levels, average earnings levels, and earnings variance in our occupation categories over time, compare these to similar trends for occupations defined in the *occ1950* IPUMS classification, and test both classifications for consistency over time.

1. Introduction and goals

The decennial Census of Population provides data on the earnings and occupations of individuals living in the U.S. The occupations reported by respondents are placed in different categories based upon a list of several hundred defined for each Census by the Census Bureau. Since 1968, the monthly Current Population Survey (CPS) has used the Census occupational categories, periodically updating them to the latest category system. Researchers can therefore use either the Census or CPS to study occupations over time in detail, but only with some restrictions because the classifications have changed from decade to decade. Some occupation categories disappeared while new ones emerged, partly due to technological reasons but mostly because the category system was evolving. In some cases, the content of an ongoing job category changed. This paper proposes a mapping between occupational category systems as they existed in the Census of

¹ We thank Leo Sveikauskas, Mike Harper, David Autor, Steve Rosenow, Trent Alexander, and colleagues in the BLS Office of Employment and Unemployment Statistics for data, advice, and valuable comments. The views and findings in this exploratory research work do not represent official views, findings, or policy of the U.S. Bureau of Labor Statistics.

Population from 1960 to 2000, and in the CPS from 1968 to 2003, into a unified set of categories, and tests the proposed system for consistency over time.

Matt Sobek of the IPUMS project² developed a consistent occupational category system and made it available for the IPUMS Census and CPS samples. The central variable, *occ1950*, represents a consistent occupational system based on the 1950 Census which Sobek extended to subsequent Censuses. Sobek assigned each occupation observed in a given year to a job category from the list of occupations used in the 1950 Census. As part of our project, we studied the IPUMS common occupational classification, since it is the only one we know of. With the exception of the military in one year, IPUMS assigned each reported Census occupational code to a single occupation in the 1950 category system. Data for each Census and CPS year has consequently been *dual-coded*, in other words, an occupational code for its own year has also been assigned a parallel code to tell us what that occupation would have been in 1950.

The text below reports evidence on the relative size and income stability of occupations in the *occ1950* category system and the new classification. Appendix B lists the mapping between each *occ1950* occupation and occupation categories in each of the later years. The quality of this mapping is high. However, for certain research purposes, one might want to use a different occupation system. For example, a test of a particular hypothesis may require more detailed occupations for comparison, or larger subgroups in order to provide larger samples to generate reliable summary statistics for each group, such as the variance of earnings. Also, the researcher may wish to study a panel of occupations to see how technology changes in since 1970s have affected occupations in the U.S. Over time it becomes more difficult to match new occupations to the 1950-based classification.

Any choice of a category system makes some tradeoffs between different desirable attributes, such as consistency over time, length of the time series, accuracy, and precision of the occupational information. Ideally, a new system should also conform to categories used in other sources, such as the *Dictionary of Occupational Titles* or the Labor Department's new *O*NET*. Since specialists in this area repeatedly face the

² IPUMS stands for Integrated Public Use Micro Samples. The ongoing project is discussed at <http://www.ipums.umn.edu> cited as Ruggles and Sobek (2003), and King, Ruggles, and Sobek (2003).

problem of mapping a category system to earlier years, we state here our methods explicitly and provide supporting tables, code, and criteria reflecting our choices so others can use, adapt, and improve on them.

Our effort to develop a consistent occupation system was similar to the IPUMS but is centered on the 1990 Census occupation categories and is intended for somewhat different purposes. We do not attempt to apply our category system to data earlier than 1960, whereas IPUMS mapped the *occ1950* definitions onto Census data back to 1850. Appendix A lists our Census 1990-based occupational system, together with a mapping to relevant occupational categories back to the 1960, 1970, 1980 Census, and forward to the 2000 Census. We combined several detailed occupations into more general categories (making the occupation set more coarse) in order to provide a consistent time series for other Census years. When possible, we tried to map back to the 1960 Census, and forward to the 2000 Census. We have 389 occupation categories.³ We tested these categories for consistency over time on the hypothesis that changes in levels and trends in income measures should be relatively stable, if the proposed occupations were defined consistently. Below we compare our proposed mapping to the IPUMS *occ1950* mapping, and show the least stable occupations in both systems, using changes from one Census year to another in three analytical variables: mean earned income, the coefficient of variation of earned income, and the fraction of the work force in each occupation.

2. Data sources and definitions

We obtained decennial Census of Population data for 1960-2000 from www.ipums.umn.edu. All the analysis below was performed on the basis of this IPUMS data, using 1% samples from 1960, 1970, and 2000, and 5% samples for 1980 and 1990. The CPS has used Census of Population occupational categories since 1968.⁴ The Census data offers large samples, but only every ten years, while the CPS has smaller samples of earnings and occupation data for every year.

³ This includes some special cases which exist only in the 1960 data, and other special cases such as “unknown” and “unemployed” which are counted like occupations in some years.

⁴ The 1968-1970 March CPS used the 1960 Census occupation definitions, the 1971-1982 CPS data used the 1970 Census definitions, the 1983-1990 CPS apply the 1980 Census occupation categories, the 1991-2002

The IPUMS *occ1950* list of categories is shorter than the list of occupations in the 1990 and 2000 Census. Some 1950 occupation titles are not used any more. For example, there were eleven categories with the job title “apprentice” in 1950, a title not used in the later data. On the other hand, the 1950 list does not include distinguish recently emerging occupations such as computer programmer, and detailed information on those occupations is needed to examine to study the effect of technological change on occupational structure and on income variance.

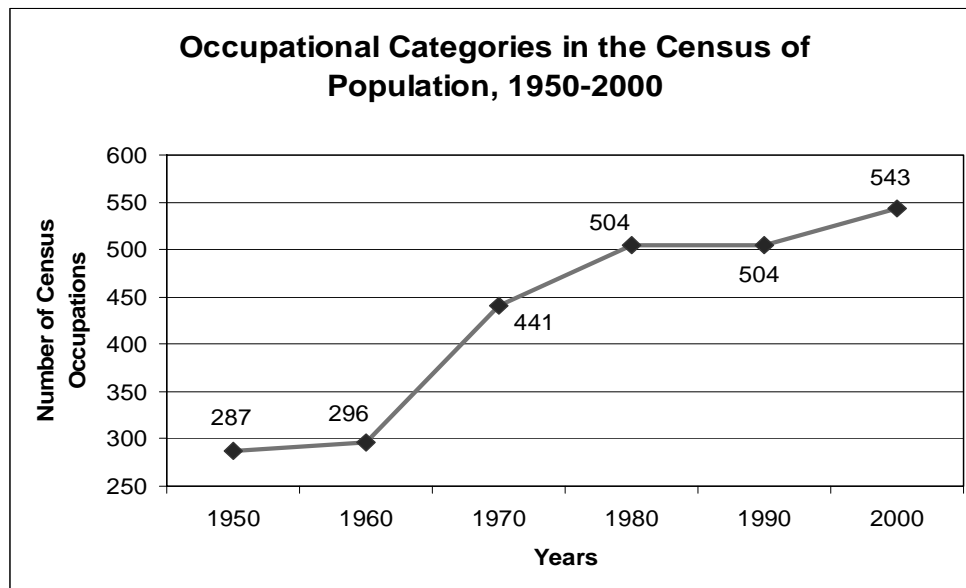


Chart 1. Counts of the Census occupational categories in years 1950-2000.

The Census defined 287 separate occupations in 1950, and more in later years, as illustrated in Chart 1. Analysis of categories show significant changes over time: some occupations disappeared, others emerged, and some were split into several categories. The title of apprentice disappeared by the year 2000. Electricians’ apprentices have been combined with electricians. Over the years, tile setters and roof repairers were sometimes presented separately and sometimes as one occupation. In our proposed classification, combining these occupations into one category reduces the level of detail in some Census years, but achieves consistency over time. Our proposed classification

CPS data use the 1990 Census categories (with some tiny variations, documented on the IPUMS web site), and starting with the 2003 CPS the 2000 Census occupation definitions have been applied.

has 389 occupation categories. The list of occupations we propose is shorter and therefore coarser than the 1990 Census. On the other hand, it is more numerous and therefore finer than the 1950 set used by IPUMS.

A mapping between two category systems is called a *crosswalk*. Crosswalks between occupation categories in the Dictionary of Occupational Titles (DOT), the Census and the Standard Occupational Classification (SOC) are available at the National Crosswalk Service Center. The national crosswalk service center has a crosswalk between the DOT and the 2000 SOC. This Census web site has crosswalks between the 1990 census and the 2000 census, as well as the 2000 Census and the 2000 SOC. (See <http://www.census.gov/hhes/www/ioindex.html>.) Appendix C integrates our proposed classification with information on job attributes obtained from data provided in the Dictionary of Occupational Titles (required strength, working with people, quality of working conditions, and analytical tasks).

Occupations are distinguished from one another mainly by the kinds of tasks the workers perform. Sometimes they are defined based on the function the workers provide for others, or by the hierarchical relation between the worker and others (e.g. supervisors and apprentices). Also, technological innovation may change the level and number of tasks in a particular occupation without changing the occupation title, or it may lead to the creation of a new category. For example, the blacksmith occupational category existed in the Census classification until 1970, but not later. A category for computer scientists first appeared in the 1970 Census. These occupational titles refer to particular technologies. When occupations are organized by tasks, technical change can result in the decline or disappearance of one occupation, and the appearance of a new one.

When occupations are instead organized by function, i.e. the type of service provided to other people, technical change tends to occur within occupational categories without altering occupation classification. For example, technological change has greatly altered the work duties of nurses, but the occupation category “nurses” has remained consistently defined.

2.1 The 1950 Occupation set used by IPUMS

The IPUMS project studied how occupations in later Census years could be mapped to the earlier Census years. This project resulted in a crosswalk variable *occ1950* given in each IPUMS file from 1850 to the recent year 2000. In almost all cases, there is a crosswalk between a particular occupation in a particular year and an *occ1950* code.

The exception is the armed forces category. In most years, respondents could specify their occupation as “in the military”. In 1990, the U.S. Census collected detailed information on the job tasks the armed forces members were performing (e.g. cook, doctor), and recorded separately whether the employer was the armed forces. This resulted in a more precise data in 1990 than in other years. However, since the bulk of the data came from other years and did not have the same level of detail, we decided to use the same definition of the armed forces as the IPUMS *occ1950* variable. The armed forces are a separate occupation category. Individuals with distinctly military occupations and those who reported the armed forces as the last employer were placed into this category. Probably some civilian employees of the Dept of Defense, or reservists, are being counted in the armed forces, even though if we had more detailed information, we would count them in another occupation. (As per <http://www.ipums.umn.edu/usa/pwork/empstata.html>) See appendix A, category 905, and appendix B, category 595, for the exact specification.

The *occ1950* classification cannot satisfy the needs of some research projects, for several reasons:

- 1) It does not provide detailed information on occupations that developed after 1950. For example, it does not separate computer programming and computer administrators from electrical engineers or mathematical scientists. A researcher might need to separate these categories to study technological change over time.⁵

⁵ For example, in Meyer (2001) and subsequent research, these occupations were examined for the effects of rapid technological change and related uncertainty and turbulence.

2) It contains occupations with a sizable fraction of workers in the 1950s, which warranted a separate category, but that fraction became thinner or completely disappeared in later Census years. For example, the 1950 Census distinguished eleven categories of apprentices (electricians, carpenters, masons, and so forth). All those categories were replaced by a single category (“helpers”) in the 2000 Census. The apprentice categories were small to begin with, and we do not know the reason of their disappearance from the list of occupational categories.

3) Some of the *occ1950* occupations are defined consistently over time and listed separately, but are too small to compute reliable large-sample aggregate statistics for the group. For example, only a few marine and naval architects and petroleum engineers have been ever reported. Here a researcher would face a problem of a small sample, rather than a problem of creating consistent time series.

By extending our proposed 1990-based category system back to the 1960s, we have the advantage of knowing how occupations changed over time, and can choose categories large enough and long lasting enough for a particular research project.

2.2 Definitions of key variables

For the statistical analysis presented below, we restrict the sample to respondents between ages 16 and 75 who had a job (that is, the *empstatd* variable has the value 10, 12, 14, or 15). When we refer to fractions of the work force, we mean fractions of this restricted sample.

We define *earned income* as the sum of wage income and income from business or self-employment. For 1990 and 2000, IPUMS imputed the estimates of topcoded state-specific incomes based on Census estimates they had. We have not studied top-coding in other years.

3. Problems, issues, and opportunities in matching categories

3.1 Choice among assignments in a split

The Census Bureau published several technical papers that include tables showing how many people were coded in each occupation in one Census year and how they would be coded using the classification from the a different Census year. This allows us to see the frequency of assigning a particular respondent record to particular occupations in consecutive Censuses, such as those in Scopp (2003).

Table 1. Examples of occupational classification changes from 1970 to 1980

1970 code	1970 occupation category	1980 code	1980 component categories and codes	Experienced Civilian Labor Force in 1980	Percent of 1970 Category
001	Accountants	007	Financial managers	9,810	1.31
		023	Accountants and auditors	640,112	85.67
		025	Other financial officers	50,930	6.82
		036	Inspectors and compliance officers, except construction	14,870	1.99
		337	Bookkeepers, accounting, and auditing clerks	31,467	4.21
002	Architects	043	Architects	52,454	88.20
		053	Civil engineers	4,096	6.89
		058	Marine engineers and naval architects	2,925	4.92
003	Computer programmers	064	Computer systems analysts and scientists	7,943	4.62
		229	Computer programmers	163,845	95.38
004	Computer systems analysts	064	Computer systems analysts and scientists	84,804	100.00
202	Bank officers and financial managers	007	Financial managers	153,488	47.37
		019	Managers and administrators, n.e.c.	40,151	12.39
		025	Other financial officers	109,575	33.82
		303	Supervisors, general office	8,643	2.67
		383	Bank tellers	12,154	3.75
231	Sales managers and department heads, retail trade	009	Purchasing managers	9,586	4.40
		013	Managers, marketing, advertising and public relations	124,506	57.10
		243	Supervisors and proprietors, sales occupations	83,968	38.51

IPUMS used these tables to assign the *occ1950* mapping. Trent Alexander of IPUMS kindly provided these tables to us. Table 1 provides one example of a mapping given in the IPUMS Excel spreadsheet.

For any of the 1970 categories it is clear which occupation is the closest match in 1980 (shown in bold), but choosing that single assignment introduces a mismatch for some of the individuals within it. The categories are not a one to one match since the Census has redefined the category system, often because of technological changes, or to conform to other systems such as the SOC, the Standard Occupational Classification.

3.2 Least-common-denominator occupational categories

In this section we discuss categories with “not elsewhere classified” in their titles, usually abbreviated as “n.e.c.” Our proposed standard system has more of these categories than the Census classification. Our “n.e.c.” categories can have different meanings depending on a year and particular occupation. For example, midwives and chiropractors used to be separate categories in 1960 and 1970, but were combined into one category later. We assigned them into an “Other health and therapy jobs” category in our proposed standard classification given in appendix A.

Another problematic example is presented in Table 2. It shows the difficulty of creating an occupational crosswalk over time. A plurality of workers (37%) coded in 284 in 1970 would be mapped to occupation 263 in 1980.

Table 2. Sales workers category, an example where mapping is difficult

1970 code	1970 occupation title	1980 code	1980 component categories and codes	Experienced Civilian Labor Force	Percent of 1970 Category
284	Sales workers, except clerks, retail trade	263	Sales workers, motor vehicles and boats	185,160	37.06
		266	Sales workers, furniture and home furnishings	98,941	19.80
		267	Sales workers; radio, television, hi fi, and appliances	76,674	15.35
		268	Sales workers, hardware and building supplies	81,668	16.35
		269	Sales workers, parts	39,120	7.83
		274	Sales workers, other commodities	16,008	3.20
		277	Street and door to door sales workers	2,082	0.42

However, the title of 1980 occupation 263 is specifically restricted to motor vehicles and boats, while the 1970 title is not. If we were to use the 1980 category name and apply it to 1970 data, we would have had a category that explicitly mislabeled most of its members. Instead, we combined the workers in category 284 in 1970 into the category called “Salespersons not elsewhere classified”. Because *occ1950* uses the predefined 1950 categories, no categories were renamed, or “n.e.c.” categories created or expanded, to extend consistency in definition across years.

To test the consistency of *occ1950* categories and our proposed standard set, for example, “Technicians, n.e.c.” and “Salespersons, n.e.c.”, we conduct statistical analysis of the subpopulations in these categories, as shown in Appendix D.

3.3 Reusable techniques

Other researchers may wish to create a different occupational classification more suitable for their project. To make their job easier, we mean to make the tables, spreadsheets, code, and testing criteria public by describing them in this working paper and providing them on the Internet. Our methods and tools can then be applied in other circumstances. In principle, the industry variable in the Census could be standardized in a similar fashion.

4.0 Testing the categories

We computed three statistics for each occupation in the proposed standard system in order to detect which job categories show sharp changes from one Census year to another. Sharp changes in them probably reflect changes in a category’s definition rather than a real-world change. Appendix D shows the three measures, and identifies occupations with the most pronounced changes from Census to Census. We applied the same criteria to the IPUMS standard *occ1950* system that was in the IPUMS data containing the 1960-2000 decennial Censuses. We restricted the sample to the employed respondents between 16 and 75 years old. The variable *empstatd* was used to restrict the employment status to respondents who had a job. All tables in this paper use Census person weights in their construction of averages.

Our first measure is the weighted mean earned income for each occupation in each Census year. Earned income was defined to be the person's annual wage or salary, plus business income. We compare this to the weighted mean earned income in the occupation in the previous decade. Second, we measure earnings inequality within the group by the coefficient of variation, and reported the greatest increase and lowest increase for both occupational category systems for each pair of consecutive Censuses. Third, we measure the fraction of the work force contained in each occupation, looking for sharp increases or declines in this proportion from Census to Census. Appendix D reports ratios measuring these changes. We found that the proposed new categories and the *occ1950* categories perform similarly by these criteria.

We do not use these measures as a tool to assign groups into an occupational category system. The measures serve only to verify that certain kinds of gross errors have been avoided. Many errors, avoidable and otherwise, could still be present in data which perform well by such criteria. Judgment of whether an occupation system is reasonable has to depend on the fundamental criteria by which the respondents were grouped, not on these rough measures of consistency.

5.0 Job content attributes

The *Dictionary of Occupational Titles* has over 12,000 detailed occupations with a few attributes measured on the basis of observing workers, and a text description about each occupation. Among the attributes measured are the physical strength, language use, and mathematical reasoning required. These occupations have been mapped to 1990 Census definitions, so these attributes can be included in all years.

Other researchers have defined useful attributes of occupations. England, Budig, and Folbre (2002) defined care work occupations as those which required specific attention to other individuals. Their research followed a tradition of measuring the degree to which women were paid less than men because of job attributes. Meyer (2001) defined a set of particular jobs which have been strongly affected by the pace of semiconductor improvements and technological uncertainty. Rosen (1981) posits that particular occupations are subject to a superstars effect, in which larger markets raise the inequality

of earnings. There are also long standing categories of clerical, managerial, professional, or technical occupations. Ideally, researchers could use occupation category systems in which category boundaries would match up with the substantive relevant to them.

The table in Appendix C of this paper shows how we map occupational attributes from other sources into the proposed classification system. We hope our effort will help researchers work around the limited definitions of skills that are sometimes used as independent variables in earnings regressions. Sometimes skills are measured crudely by the number of years of schooling, implying equal earnings for those with bachelor's degrees in electrical engineering, art history, and finance. Levels of education also reflect signaling, certification, and opportunity differences, entirely apart from skills. Including other available attributes of the job (see Appendix C) can provide better information about the skills, tasks, and functions of the worker.

Once we establish a common occupational category system, we can measure other attributes, such as the fraction of college graduates; the fraction of immigrants; the fraction working in urban areas; and the fraction working in the private sector. These are possible predictors about the way the occupation has evolved. We could test whether occupations requiring mathematics have become more numerous or better paid over time, holding all else constant. Perhaps occupations requiring government certification have been more stable than other occupations. Perhaps occupations with supervisory authority (such as managers) have evolved in different ways than other occupations. Perhaps new occupations tend to appear at the top of the income distribution, and then drift down; there could be a life cycle of occupations, in a way that is informative about technological change.

6.0 Potential improvement: splitting recorded occupations

In almost every case, we have assigned each occupation mentioned in the Census to one proposed standard category. There is one set of exceptions in 1990, where the armed forces category was distinguished by a different field of information (*empstatd*) and members of the armed forces had a variety of occupations (e.g. cook or doctor). Our

classification assigns all members of the armed forces to a single armed forces occupation.

Using other information recorded in a Census, it may be possible in future work to split the members of an originally recorded occupation into groups that fit the proposed standard occupations better. The next sections provide examples of such recoding.

6.1 Using dual-coded data sets

From 2000 to 2002, many CPS records were dual-coded into the 1990 Census category system as well as the 2000 Census system. Dual-coding makes it possible to look at some occupation categories that were stable in 1990, but were split into groups in 2000, and vice versa. We can use micro data on the individuals who were assigned in the different ways in the dual-coded data set, then apply the rules learned to the Census and CPS data at large. Using this detailed information, in later work it may be possible to define year-2000 occupation groups better than they are now classified in Appendix A, and possibly in a way that improves the test performance in appendix D.

6.2 Splitting 1960 Census occupations

There were several cases in the 1960 data where it may be realistic to split a Census occupation group into several proposed standard groups. One case is the “Statisticians and actuaries” category in the 1960 classification. In the 1970 through 1990 Censuses, statisticians and actuaries were recorded as separate groups. In Appendix A we assigned all the “statisticians and actuaries” in 1960 to the statisticians group because it was much larger and therefore provides the closest match for most of them. But we can detect those who were likely to have been classified as actuaries in any later year, and move some of them into the actuaries category, which is empty for now. Several predictors are pretty strong, based on the 1970 evidence:

- 65% of actuaries worked in industry 717 (the insurance industry), whereas only 10% of statisticians did.
- 88% of actuaries worked in the private sector, whereas only 60% of statisticians did
- 10% of statisticians were foreign-born; only 4% of actuaries were
- About half of statisticians were female. Only a third of actuaries were.

- The mean salary of actuaries was 50% higher than the mean salary of statisticians
- Actuaries had much higher mean business income.

Using all this information in a regression, it should be possible to predict which of the “statisticians and actuaries” were most likely to be actuaries, and to reassign them. Furthermore, we could try to estimate how many were then reclassified correctly and how many reclassified incorrectly based on how such a rule would have worked in the 1970 Census and the 1971-1982 CPS. This would improve the accuracy of the data on statisticians, and make a longer time series on actuaries possible.

Numbers of respondents: actuaries and statisticians in decennial Census				
(1% samples of the population in 1960 and 1970; 5% in 1980 and 1990)				
	1960	1970	1980	1990
Actuaries	260	50	526	899
Statisticians		268	1615	1555

A similar situation occurs in the “Lawyers and judges” category. Lawyers and judges were combined into a single category in the 1960 data. But in the 1970, 1980, and 1990 data, all judges worked in the public sector, and it may be possible to use information on the place of work (government versus other) to infer which of the respondents were mostly likely to be judges.

There are other examples. In one Census, some of the “athletes and kindred” category were physical education teachers. Possibly, teachers can be separated out because they worked in the public sector. There is also a large “Foremen, n.e.c.” category which existed in the 1960 Census, and we had to keep it in the proposed classification because there was no good category to match it to. This category can perhaps be split up by industry to align its members with the later categories which distinguished supervisors in extractive occupations from those in production occupations and several other categories.

7.0 Conclusion: Possible contribution of this project

With an occupation category system lasting from 1960 to the present and large samples like those in the Census and CPS, researchers could build informative panels of occupations over time and test which attributes of an occupation predict other attributes of an occupation. For example, Meyer (2001) tested how an attribute of an occupation – the level of earnings dispersion within it -- evolved over time in particular types of occupations. The hypothesis was that high tech occupations and media-amplified occupations (called “superstars” occupations by Rosen (1981)) had rising inequality within them.

Another set of applications would treat attributes associated with occupations as predictors about individuals. For example, particular occupations have been identified as involving care work, very new technology, superstars’ properties, and government licensing requirements. England, Budig, and Folbre (2002) tested whether caring and nurturing occupations (a gendered attribute) predicted pay levels apart from whether the jobholder was male or female. There is also a literature on the economics of income inequality, which could use narrow occupational categories as measures of skills.

A third set of applications to the methods proposed in this paper is to construct analogous long-lasting category systems for the industry variable in the Census and CPS. This would make it easier to identify long run trends, such as technological change, in particular industries.

Appendix A. Mapping of Census occupation codes to the proposed standard category system

Below is our proposed standardized list of Census occupations. The columns at right show one or several Census occupational codes that we assign into one "proposed standard" category. In most cases the proposed standard title is the same as the one in the 1990 Census. CPS used the 1960 definitions in 1968-1970; the 1970 definitions from 1971-1982; the 1980 definitions from 1983-1991; the 1990 definitions from 1992-2002; and the 2000 definitions starting in 2003. "N.e.c." stands for not elsewhere classified.

Occupation assignments in the table were overridden if the respondent was actively in the military, which would correspond to the values 14 and 15 in the variable *empstatd*. All such respondents were categorized into occupation 905. These rules match the IPUMS *occ1950* definition.

Proposed standard job title	Proposed standard code	Census 1960 codes	Census 1970 codes	Census 1980 codes	Census 1990 codes	Census 2000 codes
Legislators	3			3	3	3
Chief executives and public administrators	4	270		4	4	1
Financial managers	7		202; 210	7	7	12
Human resources and labor relations managers	8			8	8	13
Managers and specialists in marketing, advertising, and public relations	13	163	192; 231; 233;	13; 197	13; 197	4; 5; 6; 282
Managers in education and related fields	14	30	235; 240	14	14	23
Managers of medicine and health occupations	15		212	15	15	35
Postmasters and mail superintendents	16	280	224	17	16	40
Managers of food-serving and lodging establishments	17		230		17	31; 34
Managers of properties and real estate	18	262	216	16	18	41
Funeral directors	19	104	211	18	19	32
Managers of service organizations, n.e.c.	21				21	33; 36; 42; 72
Managers and administrators, n.e.c.	22	275; 290	195; 196; 201; 220; 222; 223; 245; 246	5; 19	5; 22	2; 10; 11; 14; 22; 30; 43; 60; 430
Accountants and auditors	23	0	1	23	23	80; 93
Insurance underwriters	24			24	24	86
Other financial specialists	25	253		25	25	82; 83; 84; 85; 91; 94; 95
Management analysts	26			26	26	71
Personnel, HR, training, and labor relations specialists	27			27	27	62

Proposed standard job title	Proposed standard code	Census 1960 codes	Census 1970 codes	Census 1980 codes	Census 1990 codes	Census 2000 codes
Purchasing agents and buyers, of farm products	28	251	203	28	28	51
Buyers, wholesale and retail trade	29	250	205	29	29	52
Purchasing managers, agents and buyers, n.e.c.	33	285	225	9; 33	9; 33	15; 53
Business and promotion agents	34			34	34	50
Construction inspectors	35		213	35	35	666
Inspectors and compliance officers, outside construction	36	260	215	36	36	56; 90
Management support occupations	37			37	37	73
Architects	43	13	2	43	43	130
Aerospace engineer	44	80	6	44	44	132
Metallurgical and materials engineers, variously phrased	45	90	15	45	45	145
Petroleum, mining, and geological engineers	47	91	21	47	47	152
Chemical engineers	48	81	10	48	48	135
Civil engineers	53	82	11	53	53	136
Electrical engineer	55	83	12	55	55	140; 141
Industrial engineers	56	84	13	56	56	143
Mechanical engineers	57	85	14	57	57	146
Engineers not elsewhere classified	59	93	20; 23	46; 49; 54; 58; 59	46; 49; 54; 58; 59	133; 134; 142; 144; 150; 151; 153
Computer systems analysts and computer scientists	64		4; 5	64	64	100; 104; 106; 110; 111
Operations and systems researchers and analysts	65		55	65	65	70; 122
Actuaries	66		34	66	66	120
Statisticians	67	174	36	67	67	123
Mathematicians and mathematical scientists	68	135	35	68	68	121; 124
Physicists and astronomers	69	140	53	69	69	170
Chemists	73	21	45	73	73	172
Atmospheric and space scientists	74		43	74	74	171
Geologists	75	134	51	75	75	174
Physical scientists, n.e.c.	76	145	54	76	76	176
Agricultural and food scientists	77	130	42	77	77	160
Biological scientists	78	131	44; 52	78	78	161
Foresters and conservation scientists	79	103	25	79	79	164
Medical scientists	83			83	83	165
Physicians	84	153; 162	65	84	84	306
Dentists	85	71	62	85	85	301
Veterinarians	86	194	72	86	86	325
Optometrists	87	152	63	87	87	304
Podiatrists	88		71	88	88	312
Other health and therapy	89	22; 840	61; 73; 924	89	89	300; 326

Proposed standard job title	Proposed standard code	Census 1960 codes	Census 1970 codes	Census 1980 codes	Census 1990 codes	Census 2000 codes
Registered nurses	95	150	75; 923	95	95	313
Pharmacists	96	160	64	96	96	305
Dietitians and nutritionists	97	73	74	97	97	303
Respiratory therapists	98			98	98	322
Occupational therapists	99			99	99	315; 361
Physical therapists	103			103	103	316; 362
Speech therapists	104			104	104	314; 323
Therapists, n.e.c.	105	193	76; 84	105	105	320; 321; 324
Physicians' assistants	106			106	106	311
Earth, environmental, and marine science instructors	113	41	103	113	113	
Biological science instructors	114	32	104	114	114	
Chemistry instructors	115	34	105	115	115	
Physics instructors	116	45	110	116	116	
Psychology instructors	118	50	114	118	118	
Economics instructors	119	35	116	119	119	
History instructors	123		120	123	123	
Sociology instructors	125		121	125	125	
Engineering instructors	127	40	111	127	127	
Math instructors	128	42; 51	112	128	128	
Education instructors	139		125	139	139	
Law instructors	145		132	145	145	
Theology instructors	147		133	147	147	
Home economics instructors	149		131	149	149	
Humanities instructors, nec	150	54				
Subject instructors, college	154	31; 43; 52; 53; 60	102; 113; 115; 122; 123; 124; 126; 130; 134; 135; 140	117; 124; 126; 129; 133; 134; 135; 136; 137; 138; 143; 144; 146; 148; 153; 154	117; 124; 126; 129; 133; 134; 135; 136; 137; 138; 143; 144; 146; 148; 153; 154	220
Kindergarten and earlier school teachers	155		143	155	155	230
Primary school teachers	156	182	142	156	156	231
Secondary school teachers	157	183	144	157	157	232
Special education teachers	158			158	158	233
Teachers, n.e.c.	159	184	141; 145	159	159	234; 254; 255
Vocational and educational counselors	163		174	163	163	200
Librarians	164	111	32	164	164	243
Archivists and curators	165		33	165	165	240
Economists, market researchers, and survey researchers	166	172	91	166	166	180; 181
Psychologists	167	173	93	167	167	182
Sociologists	168		94	168	168	183
Social scientists, n.e.c.	169	102; 175	24; 26; 92;	169	169	186

Proposed standard job title	Proposed standard code	Census 1960 codes	Census 1970 codes	Census 1980 codes	Census 1990 codes	Census 2000 codes
			96			
Urban and regional planners	173		95	173	173	184
Social workers	174	171	100	174	174	201
Recreation workers	175	165	101	175	175	462
Clergy and religious workers	176	23; 170	86; 90	176; 177	176; 177	204; 205; 206
Lawyers	178	105	31	178	178	210
Judges	179		30	179	179	211
Writers and authors	183	20	181	183	183	285
Technical writers	184			184	184	284
Designers	185	72	183; 425	185	185	263
Musician or composer	186	120	185	186	186	275
Actors, directors, producers	187	10	175	187	187	270; 271
Art makers: painters, sculptors, craft-artists, and print-makers	188	14	190	188	188	260
Photographers	189	161	191	189	189	291
Dancers	193	70	182	193	193	274
Art/entertainment performers and related	194	101	194	194	194	276; 286
Editors and reporters	195	75	184	195	195	281; 283; 292
Announcers	198		193	198	198	280
Athletes, sports instructors, and officials	199	15; 180	180	199	199	272; 752
Professionals, n.e.c.	200	195				
Clinical laboratory technologies and technicians	203	185	80	203	203	330
Dental hygienists	204		81	204	204	331
Health record tech specialists	205		82	205	205	351
Radiologic tech specialists	206		83	206	206	332
Licensed practical nurses	207	842	926	207	207	350
Health technologists and technicians, n.e.c.	208		85	208	208	340; 353; 354
Electrical and electronic (engineering) technicians	213	190	153	213	213	
Engineering technicians, n.e.c.	214		154; 162	214; 216	214; 216	155; 196
Mechanical engineering technicians	215		155	215	215	
Drafters	217	74	152	217	217	154
Surveyors, cartographers, mapping scientists and technicians	218	181; 642	161	63; 218; 867	63; 218; 867	131; 156
Biological technicians	223		150	223	223	190; 191
Chemical technicians	224		151	224	224	192
Other science technicians	225	191	156	225	225	193
Airplane pilots and navigators	226	12	163; 170	226	226	903
Air traffic controllers	227		164	227	227	904
Broadcast equipment operators	228	164	171	228	228	290; 296
Computer software developers	229		3	229	229	101; 102
Programmers of numerically controlled machine tools	233		172	233	233	790

Proposed standard job title	Proposed standard code	Census 1960 codes	Census 1970 codes	Census 1980 codes	Census 1990 codes	Census 2000 codes
Legal assistants and paralegals	234			234	234	214; 215
Technicians, n.e.c.	235	192	165; 173	235	235	194
Sales supervisors and proprietors	243	254		243	243	470; 471
Insurance sales occupations	253	385	265	253	253	481
Real estate sales occupations	254	393	270; 363	254	254	81; 492
Financial services sales occupations	255	395	271	255	255	482
Advertising and related sales jobs	256	380	260	256	256	480
Sales engineers	258	92	22	258	258	493
Salespersons, n.e.c.	274	301; 381; 383; 394	261; 280; 281; 282; 284; 285; 296	257; 259; 263; 264; 265; 266; 267; 268; 269; 274; 284; 285	257; 259; 263; 264; 265; 266; 267; 268; 269; 274; 284; 285	474; 475; 484; 485; 494; 496
Retail sales clerks	275		283; 314	275	275	476
Cashiers	276	312	310	276	276	472; 513
Door-to-door sales, street sales, and news vendors	277	390	264; 266	277; 278	277; 278	495
Sales demonstrators / promoters / models	283	382	262	283	283	490
Office supervisors	303		312	303; 305	303; 305	500
Computer and peripheral equipment operators	308		343; 350	304; 308; 309	304; 308; 309	580
Secretaries	313	342	370; 371; 372	313	313	570
Stenographers	314	345	376	314	314	
Typists	315	360	391	315	315	582; 583
Interviewers, enumerators, and surveyors	316		320	316	316	523; 531; 534
Hotel clerks	317			317	317	530
Transportation ticket and reservation agents	318	354	390	318	318	483; 541
Receptionists	319	341	364	319	319	540
Information clerks, nec	323			323; 325	323; 325	
Correspondence and order clerks	326			326; 327	326; 327	521; 535
Human resources clerks, except payroll and timekeeping	328	154	56	328	328	536
Library assistants	329	302	330	329	329	244; 532
File clerks	335	320	325	335	335	526
Records clerks	336			336	336	520; 542
Bookkeepers and accounting and auditing clerks	337	310	305	337	337	512
Payroll and timekeeping clerks	338	333	360	338	338	514
Cost and rate clerks (financial records processing)	343			343	343	
Billing clerks and related financial records processing	344		303; 341; 342	339; 344	339; 344	511
Duplication machine operators / office machine operators	345		344	345	345	

Proposed standard job title	Proposed standard code	Census 1960 codes	Census 1970 codes	Census 1980 codes	Census 1990 codes	Census 2000 codes
Mail and paper handlers	346		332	346	346	556
Office machine operators, n.e.c.	347	325	355	347	347	590
Telephone operators	348	353	385	306; 348	306; 348	501; 502
Other telecom operators	349	352	384	349; 353	349; 353	503
Postal clerks, excluding mail carriers	354	340	361	354	354	554
Mail carriers for postal service	355	323	331	355	355	555
Mail clerks, outside of post office	356	315		356	356	585
Messengers	357	324; 351	333; 383	357	357	551
Dispatchers	359	314	315	359	359	552
Inspectors, n.e.c.	361	450				
Shipping and receiving clerks	364	343	374	307; 364	307; 364	550; 561
Stock and inventory clerks	365	350	381	365	365	515; 562
Meter readers	366		334	366	366	553
Weighers, measurers, and checkers	368		392	368	368	563
Material recording, scheduling, production, planning, and expediting clerks	373		323	363; 373	363; 373	16; 560
Insurance adjusters, examiners, and investigators	375	321	326	375	375	54; 584
Customer service reps, investigators and adjusters, except insurance	376		321	376	376	524; 533
Eligibility clerks for government programs; social welfare	377			377	377	525
Bill and account collectors	378	313	313	378	378	510
General office clerks	379	370	395; 396	379	379	586
Bank tellers	383	305	301	383	383	516
Proofreaders	384		362	384	384	591
Data entry keyers	385		345	385	385	581
Statistical clerks	386		375	386	386	592
Teacher's aides	387		382	387	387; 467	
Administrative support jobs, n.e.c.	389		311; 394	369; 374; 389	369; 374; 389	522; 593
Housekeepers, maids, butlers, stewards, and lodging quarters cleaners	405	802; 821; 823; 824; 832	901; 902; 931; 940; 982	405; 449; 950	405; 449; 950	384; 423
Private household cleaners and servants	407		984	407	407	
Supervisors of guards	415			415	415	373
Fire fighting, prevention, and inspection	417	850	961	413; 416; 417	413; 416; 417	372; 374; 375
Police, detectives, and private investigators	418	852; 853	964	6; 414; 418	6; 414; 418	371; 382; 385; 386; 391
Other law enforcement: sheriffs, bailiffs, correctional institution officers	423	854	963; 965	423; 424	423; 424	370; 380; 383
Crossing guards and bridge tenders	425		960	425	425	394
Guards, watchmen, doorkeepers	426	851	962	426	426	392
Protective services, n.e.c.	427			427	427	390; 395
Bartenders	434	815	910	434	434	404
Waiter/waitress	435	875	915	435	435	411

Proposed standard job title	Proposed standard code	Census 1960 codes	Census 1970 codes	Census 1980 codes	Census 1990 codes	Census 2000 codes
Cooks, variously defined	436	825	912; 981	404; 433; 436; 437	404; 433; 436; 437	400; 401; 402
Food counter and fountain workers	438	830	914	438	438	
Kitchen workers	439	835	913; 916	439	439	405
Waiter's assistant	443		911	443	443	406; 412; 413
Misc food prep workers	444			444	444	403; 414; 416
Dental assistants	445		921	445	445	364
Health aides, except nursing	446	303	922	446	446	365
Nursing aides, orderlies, and attendants	447	151; 810	925	447	447	360; 461
Supervisors of cleaning and building service	448			448	448	420
Janitors	453	834	903	453	453	422
Elevator operators	454	831	943	454	454	975
Pest control occupations	455			455	455	424
Supervisors of personal service jobs, n.e.c.	456			456	456	432
Barbers	457	814	935; 945	457	457	450
Hairdressers and cosmetologists	458	843	944	458	458	451; 452
Recreation facility attendants	459	813	932	459	459	440; 443
Guides	461			463	461	454
Ushers	462	874	953	464	462	442
Public transportation attendants and inspectors	463		704	465	463	455; 941
Baggage porters	464	304; 841	934	466	464	453
Welfare service aides	465		954	467	465	202
Child care workers	468	801	942; 952; 980	406; 468	406; 466; 468	460; 464
Personal service occupations, nec	469	420; 804; 812; 820; 890	933; 941; 950; 976; 986	469	469	363; 415; 446; 465
Farmers (owners and tenants)	473	200	801	473	473	21
Horticultural specialty farmers	474			474	474	
Farm managers, except for horticultural farms	475	222	802; 806; 821	475	475	20; 602
Managers of horticultural specialty farms	476			476	476	
Farm workers	479	901; 902; 903; 905	822 823; 824; 846	477; 479	477; 479	434; 605
Marine life cultivation workers	483			483	483	
Nursery farming workers	484			484	484	
Supervisors of agricultural occupations	485			485	485	421
Gardeners and groundskeepers	486	964	755	486	486	425
Animal caretakers except on farms	487		740	487	487	435
Graders and sorters of agricultural products	488	654		488	488	604
Inspectors of agricultural products	489			489	489	601

Proposed standard job title	Proposed standard code	Census 1960 codes	Census 1970 codes	Census 1980 codes	Census 1990 codes	Census 2000 codes
Timber, logging, and forestry workers	496	444; 970	450; 761	494; 495; 496	494; 495; 496	600; 612; 613
Fishers, hunters, and kindred	498	962	752	498; 499	498; 499	610; 611
Supervisors of mechanics and repairers	503			503	503	700
Automobile mechanics	505	472; 601	473; 474	505; 506	505; 506	720
Bus, truck, and stationary engine mechanics	507			507	507	721
Aircraft mechanics	508	471	471	508; 515	508; 515	714
Small engine repairers	509			509	509	724
Auto body repairers	514		472	514	514	715; 716
Heavy equipment and farm equipment mechanics	516		480; 481	516; 517	516; 517	722; 726
Industrial machinery repairers	518			518	518	733
Machinery maintenance occupations	519	461; 692	483; 642	519	519	735
Repairers of industrial electrical equipment	523	474	485	523	523	710; 712
Repairers of data processing equipment	525		475	525	525	701
Repairers of household appliances and power tools	526		482	526	526	732
Telecom and line installers and repairers	527	453	552; 554	527; 529	527; 529	702; 742
Repairers of electrical equipment, n.e.c.	533			533	533	703; 705; 711
Heating, air conditioning, and refrigeration mechanics	534	470	470	534	534	731
Precision makers, repairers, and smiths	535	451; 504	453; 516	535; 647	535; 647	743; 875
Locksmiths and safe repairers	536			536	536	754
Office machine repairers and mechanics	538	473	484	538	538	
Repairers of mechanical controls and valves	539			539	539	730
Elevator installers and repairers	543			543	543	670
Millwrights	544	491	491; 502	544	544	736
Mechanics and repairers, n.e.c.	549	475; 480; 610; 620; 621	403; 486; 492; 495; 571; 572; 575; 586	547; 549; 864	547; 549	734; 755; 756; 762
Supervisors of construction work	558			553; 554; 555; 556; 557; 558	553; 554; 555; 556; 557; 558	620
Masons, tilers, and carpet installers	563	405; 602	410; 411; 420; 560	563; 564; 565; 566	563; 564; 565; 566	622; 624
Carpenters	567	411; 603; 960	415; 416	567; 569	567; 569	623
Drywall installers	573		615	573	573	633
Electricians	575	421; 604	430; 431	575; 576	575; 576	635; 713
Electric power installers and repairers	577		433	577	577	704; 741; 760
Painters, construction and maintenance	579	495	510; 511	579	579	642
Paperhangers	583	501	512	583	583	643
Plasterers	584	505	520; 521	584	584	646

Proposed standard job title	Proposed standard code	Census 1960 codes	Census 1970 codes	Census 1980 codes	Census 1990 codes	Census 2000 codes
Plumbers, pipe fitters, and steamfitters	585	510; 612	522; 523	585; 587	585; 587	644
Concrete and cement workers	588	413	421	588	588	625
Glaziers	589	434	445	589	589	636
Insulation workers	593	630	601	593	593	640; 672
Paving, surfacing, and tamping equipment operators	594		412	594; 855	594; 855	630
Roofers and slaters	595	514	534	595	595	651
Sheet metal duct installers	596			596	596	652
Structural metal workers	597	523	550	597	597	650; 653; 774
Drillers of earth	598		614	598	598	682
Construction trades, n.e.c.	599	613	440	599	599	631; 671; 676
Drillers of oil wells	614			614	614	680; 692
Explosives workers	615	634	603	615	615	683
Miners	616	685	640	616	616	684
Other mining occupations	617			617	617	691; 694
Production supervisors or foremen	628	430	441	613; 628; 633; 863	613; 628; 633; 863	770
Tool and die makers and die setters	634	530	561; 562	634; 635; 655	634; 635; 655	813
Machinists	637	465; 605	461; 462	637; 639	637; 639	803
Boilermakers	643	403	404	643	643	621
Precision grinders and filers	644			644	644	821
Patternmakers and model makers	645	502	514	645; 656; 676	645; 656; 676	806; 844; 852
Lay-out workers	646		540	646	646	816
Engravers	649	424	435	649	649	891
Tinsmiths, coppersmiths, and sheet metal workers	653	525; 614	535; 536	653; 654	653; 654	
Cabinetmakers and bench carpenters	657	410	413	657	657	850
Furniture and wood finishers	658		443	658	658	851
Other precision woodworkers	659			659	659	
Dressmakers and seamstresses	666	651	613	666	666	835
Tailors	667	524	551	667	667	
Upholsterers	668	535	401; 563	668	668	845
Shoe repairers	669		542	669	669	833
Other precision apparel and fabric workers	674	432; 680; 705	444; 636	674	674	
Hand molders and shapers, except jewelers	675		546	675; 786; 787; 793; 794; 795	675; 786; 787; 793; 794; 795	892
Optical goods workers	677	494	506	677	677	352
Dental laboratory and medical appliance technicians	678		426	678	678	341; 876
Bookbinders	679	404	405	679	679	823
Other precision and craft workers	684	545		684	684	812
Butchers and meat cutters	686	675	631; 633	686	686	781
Bakers	687	401	402	687	687	780
Batch food makers	688			688	688	784

Proposed standard job title	Proposed standard code	Census 1960 codes	Census 1970 codes	Census 1980 codes	Census 1990 codes	Census 2000 codes
Adjusters and calibrators	693			693	693	
Water and sewage treatment plant operators	694			694	694	862
Power plant operators	695	701	525	695	695	860
Plant and system operators, stationary engineers	696	520	545	696	696	861
Other plant and system operators	699			699	699	863
Lathe, milling, and turning machine operatives	703	452	454; 652; 653	703; 704; 705	703; 704; 705	801; 802
Punching and stamping press operatives	706		656	706	706	795
Rollers, roll hands, and finishers of metal	707	513	533	707	707	794
Drilling and boring machine operators	708		650	708	708	796
Grinding, abrading, buffing, and polishing workers	709	521; 653	621; 651	709	709	800
Forge and hammer operators	713	402; 431	442	713	713	793
Fabricating machine operators, n.e.c.	717		660	717	717	
Molders, and casting machine operators	719	492	503; 504	719	719	810
Metal platers	723		635	723	723	820
Heat treating equipment operators	724	435	446; 626	724	724	815
Wood lathe, routing, and planing machine operators	726			726	726	822
Sawing machine operators and sawyers	727	704	662	727	727	853
Shaping and joining machine operator (woodworking)	728			728	728	
Nail and tacking machine operators (woodworking)	729			729	729	854
Other woodworking machine operators	733			733	733	855
Printing machine operators, n.e.c.	734	512; 615	423; 434; 530; 531	734; 737	734; 737	824
Photoengravers and lithographers	735	423; 503	515	735	735	
Typesetters and compositors	736	414	422	736	736	825; 826
Winding and twisting textile/apparel operatives	738		672; 681	738	738	842
Knitters, loopers, and toppers textile operatives	739	673; 720	671; 673	739	739	841
Textile cutting machine operators	743			743	743	840
Textile sewing machine operators	744		663	744	744	832
Shoemaking machine operators	745	515	664	745	745	834
Pressing machine operators (clothing)	747			747	747	831
Laundry workers	748	674; 803	611; 630; 983	403; 748	403; 748	830
Misc textile machine operators	749	710	670; 674	749	749	836; 846
Cementing and gluing machine operators	753			753	753	885
Packers, fillers, and wrappers	754	693	604; 643	754	754	880
Extruding and forming machine operators	755			755; 758	755; 758	792; 843; 872
Mixing and blending machine operatives	756	652	620; 641	756	756	865

Proposed standard job title	Proposed standard code	Census 1960 codes	Census 1970 codes	Census 1980 codes	Census 1990 codes	Census 2000 codes
Separating, filtering, and clarifying machine operators	757			757	757	864
Painting machine operators	759	694	644	759	759	881
Roasting and baking machine operators (food)	763			763	763	783
Washing, cleaning, and pickling machine operators	764			764	764	886
Paper folding machine operators	765			765	765	893
Furnace, kiln, and oven operators, apart from food	766	670; 672; 712	622; 666	766	766	804; 873
Crushing and grinding machine operators	768	490	501	768	768	
Slicing and cutting machine operators	769		612	769	769	785; 871
Motion picture projectionists	773	493	505	773	773	441
Photographic process workers	774	695	645	774	774	883
Machine operators, n.e.c.	779	775	690; 692; 694; 695; 696	673; 714; 715; 725; 777; 779; 798	673; 714; 715; 725; 777; 779; 798	884; 890; 894; 896
Welders and metal cutters	783	721	680	783	783	814
Solderers	784		665	784	784	
Assemblers of electrical equipment	785	631	602	636; 683; 785	636; 683; 785	771; 772; 773; 775
Hand painting, coating, and decorating occupations	789		543	789	789	
Production checkers and inspectors	796	643	452; 610	689; 796; 797	689; 796; 797	
Graders and sorters in manufacturing	799	671	624; 625	799	799	874
Supervisors of motor vehicle transportation	803			803	803; 864	900
Truck, delivery, and tractor drivers	804	650; 715; 971; 972	705; 706; 715; 763	804; 805; 806; 856	804; 805; 806; 856	751; 913; 960
Bus drivers	808	641	703	808	808	912
Taxi cab drivers and chauffeurs	809	714	714	809; 814	809; 814	911; 914; 915
Parking lot attendants	813		711	813	813	935
Railroad conductors and yardmasters	823	252; 645	226	823	823	924
Locomotive operators (engineers and firemen)	824	454; 460; 691	455; 456; 710	824; 826	824; 826	920; 926
Railroad brake, coupler, and switch operators	825	640; 713	712; 713	825	825	923
Ship crews and marine engineers	829	265; 703	221; 661; 701	497; 828; 829; 833	497; 828; 829; 833	930; 931; 933
Water transport infrastructure tenders and crossing guards	834	635; 860		834	834	934
Operating engineers of construction equipment	844		436	844	844	632
Crane, derrick, winch, and hoist operators	848	415	424	848; 849	848; 849	951; 956
Excavating and loading machine operators	853	425		853	853	952

Proposed standard job title	Proposed standard code	Census 1960 codes	Census 1970 codes	Census 1980 codes	Census 1990 codes	Census 2000 codes
Misc material moving occupations	859	690	726	843; 859	843; 859	965; 973
Helpers, constructions	865			865	865	761
Helpers, surveyors	866		605	866	866	660
Construction laborers	869		750; 751	869	869	626; 673; 693
Production helpers	873			873	873	895
Garbage and recyclable material collectors	875		754	875	875	972
Materials movers: stevedores and longshore workers	876	965	760	845; 876	845; 876	950; 974
Stock handlers	877		762	877	877	
Machine feeders and offbearers	878			878	878	963
Freight, stock, and materials handlers	883	973	753	883	883	942
Garage and service station related occupations	885	632	623	885	885	936
Vehicle washers and equipment cleaners	887	963	764	887	887	961
Packers and packagers by hand	888		634	888	888	964
Laborers outside construction	889	985	770; 780; 785; 796	889	868; 874; 889	674; 675; 962
Military	905	555 or (<i>empstatd</i> = 14 or <i>empstatd</i> = 15)	580 or (<i>empstatd</i> = 14 or <i>empstatd</i> = 15)	905 or (<i>empstatd</i> = 14 or <i>empstatd</i> = 15)	903; 904; 905; or (<i>empstatd</i> = 14 or <i>empstatd</i> = 15)	980; 981; 982; 983 or (<i>empstatd</i> = 14 or <i>empstatd</i> = 15)
Unemployed	991		991			992
Unknown	999	990; 995; 999	0; 995	909	909	0

Appendix B. Mappings of Census occupation codes to the IPUMS standard *occ1950*

These are the 1950 Census occupation categories. IPUMS researcher Matt Sobek mapped all later Census-defined occupation categories to these in the publicly available Census and CPS data available from www.ipums.org. Below we show how these assignments were made, based on the the IPUMS data available as of Nov 1, 2004. In the columns at right are the source categories which were assigned to the *occ1950* code at the left. "N.e.c." stands for not elsewhere classified.

For 1960 and 1990, the occupation assignments implied by the table can be overridden by the *empstatd* variable, which has the value 14 or 15 if the respondent were actively in the military, regardless of the precise occupation. These respondents are all categorized into occupation 595.

1950 occ	Description	Census 1960 occ	Census 1970 occ	Census 1980 occ	Census 1990 occ	Census 2000 occ
0	Accountants and auditors	0	1	23	23	80, 94
1	Actors and actresses	10	175			270
2	Airplane pilots and navigators	12	163	226	226	903
3	Architects	13	2	43	43	130
4	Artists and art teachers	14	190	188	188	260
5	Athletes	15				272
6	Authors	20	181	183	183	285
7	Chemists	21	45	73	73	172
8	Chiropractors	22	61	89	89	300
9	Clergymen	23	86	176	176	204
10	College presidents and deans	30	235			
12	Agricultural sciences- Professors and instructors	31	102	136	136	
13	Biological sciences- Professors and instructors	32	104	114	114	
14	Chemistry-Professors and instructors	34	105	115	115	
15	Economics-Professors and instructors	35	116	119	119	
16	Engineering-Professors and instructors	40	111	127	127	
17	Geology and geophysics- Professors and instructors	41				

18	Mathematics professors and instructors	42	112	128, 129	128, 129	
19	Medical science professors and instructors	43	113	133, 134	133, 134	
23	Physics-Professors and instructors	45	110	116	116	
24	Psychology-Professors and instructors	50	114	118	118	
25	Statistics-Professors and instructors	51				
26	Natural science (nec)-Professors and instructors	52	103	113	113	
27	Social sciences (nec)-Professors and instructors	53	120, 121, 122	123, 124, 125, 126, 146	123, 124, 125, 126, 146	
28	Nonscientific subjects-Professors and instructors	54	115	135	135	
28	Nonscientific subjects-Professors and instructors	54	125	139	139	
28	Nonscientific subjects-Professors and instructors	54	126	143	143	
28	Nonscientific subjects-Professors and instructors	54	130	144	144	
28	Nonscientific subjects-Professors and instructors	54	131, 132, 133, 134	145, 148, 149	145, 148, 149	
29	Subject not specified-Professors and instructors	60	135, 140	117, 147, 153, 154	117, 147, 153, 154	220
31	Dancers and dancing teachers	70	182	193	193	274
32	Dentists	71	62	85	85	301
33	Designers	72	183	185	185	263
34	Dieticians and nutritionists	73	74	97	97	303
35	Draftsmen	74	152	217	217	154
36	Editors and reporters	75, 163	184, 192	195, 197	195, 197	281, 282, 283
41	Aeronautical-Engineers	80	6	44	44	132
42	Chemical-Engineers	81	10	48	48	135
43	Civil-Engineers	82	11	53	53	136
44	Electrical-Engineers	83	12	55	55	141
45	Industrial-Engineers	84	13	26, 56	26, 56	143
46	Mechanical-Engineers	85	14	57, 58	57, 58	146
47	Metallurgical, metallurgists-Engineers	90	15	45	45	145
48	Mining-Engineers	91	20, 21	46, 47	46	150, 152

49	Engineers (nec)	92, 93	22, 23	54, 59, 258, 833	54, 59, 258, 833	133, 134, 140, 142, 153, 493
51	Entertainers (nec)	101	194	184, 194	184, 194	276
52	Farm and home management advisors	102	24, 26			
53	Foresters and conservationists	103	25	79, 416	79, 416	164
54	Funeral directors and embalmers	104	165, 211	18	19	32
55	Lawyers and judges	105	30, 31	178, 179	178, 179	210, 211
56	Librarians	111	32, 82	164, 205	164, 205	240, 243
57	Musicians and music teachers	120	123, 145, 185	137, 158, 159, 186	137, 158, 159, 186	275
58	Nurses, professional	150	75, 212	15, 95, 106	15, 95, 106	313
59	Nurses, student professional	151	923			
61	Agricultural scientists	130	42	77	77	160
62	Biological scientists	131	44	78, 83	78, 83	161, 165
63	Geologists and geophysicists	134	51, 52	75	75	
67	Mathematicians	135	35	68	68	121, 124
68	Physicists	140	53	49, 69	49, 69	151, 170
69	Misc. natural scientists	145	54	76	76	171, 174, 176
70	Optometrists	152	63	87	87	304
71	Osteopaths	153				
72	Personnel and labor relations workers	154	56	8, 27	8, 27	62
73	Pharmacists	160	64	96	96	305
74	Photographers	161	191	189	189	291
75	Physicians and surgeons	162	65	84	84	306
76	Radio operators	164	164, 171	227, 228	227, 228	290, 296, 904
77	Recreation and group workers	165	101	175	175	462
78	Religious workers	170	90	177	177	205, 206
79	Social and welfare workers, except group	171	100	174	174	201, 202
81	Economists	172	91	166	166	180
82	Psychologists	173	93	167	167	182
83	Statisticians and actuaries	174	34, 36	66, 67	66, 67	120, 123
84	Misc social scientists	175	33, 92, 94, 96	165, 168, 169	165, 168, 169	183, 186

91	Sports instructors and officials	180	124, 180	138, 199	138	
92	Surveyors	181	161	63, 218	63, 218	131, 156
93	Teachers (n.e.c.)	182, 183, 184	141, 142, 143, 144, 240	14, 155, 156, 157	14, 155, 156, 157	23, 230, 231, 232, 233, 234
94	Medical and dental-technicians	185	80, 81, 83, 84, 85, 426	203, 204, 206, 208, 678	203, 204, 206, 208, 678	314, 330, 331, 332, 340, 341, 351, 352, 353, 876
95	Testing-technicians	191, 192	43, 150, 151, 155, 156, 162, 172, 173	74, 215, 216, 223, 224, 225, 233, 235	74, 215, 216, 223, 224, 225, 233, 235	155, 190, 191, 192, 193, 194, 196
96	Technicians (nec)	190	153	213	213	244
97	Therapists and healers (nec)	193	71, 76	88, 98, 99, 103, 104, 105	88, 98, 99, 103, 104, 105	312, 315, 316, 320, 321, 322, 323, 324, 361, 362, 363
98	Veterinarians	194	72	86	86	325
99	Professional, technical & kindred workers (nec)	195	3, 4, 5, 55, 73, 95, 154, 174, 193, 195, 196, 382	64, 65, 163, 173, 198, 214, 229, 387	64, 65, 163, 173, 198, 214, 229, 387	60, 70, 71, 72, 73, 82, 83, 84, 85, 90, 91, 95, 100, 101, 102, 104, 106, 110, 111, 122, 181, 184, 200, 254, 255, 280, 284, 286, 326, 354
100	Farmers (owners and tenants)	200	801, 806	473, 474	473, 474	21
123	Farm managers	222	802	475	475	20
200	Buyers and dept heads, store	250	205, 231, 233	13, 29	13, 29	4, 5, 6, 52
201	Buyers and shippers, farm products	251	203	28	28	51
203	Conductors, railroad	252	226	823	823	924
204	Credit men	253	210			
205	Floormen and floor managers, store	254				
210	Inspectors, public administration	260	213, 215	36	36	56

230	Managers & superintendents, building	262	216	16	18	41
240	Officers, pilots, pursers and engineers, ship	265	221	497, 828	497, 828	931
250	Officials & administrators (nec), public administration	270	201, 222	3, 4, 5, 37	3, 4, 5, 37	3, 93
260	Officials, lodge, society, union, etc.	275	223			
270	Postmasters	280	224	17	16	40
280	Purchasing agents and buyers (nec)	285	225	9, 33	9, 33	15, 53
290	Managers, officials, and proprietors (nec)	290	202, 220, 230, 245, 246	7, 19, 25, 34, 187, 243, 476, 494, 558	7, 17, 21, 22, 25, 34, 187, 243, 476, 494, 558	1, 2, 10, 11, 12, 13, 14, 16, 22, 30, 31, 33, 34, 35, 36, 42, 43, 50, 271, 470, 471, 600
300	Agents (nec)	301	363			550
301	Attendants and assistants, library	302	330	329	329	532
302	Attendants, physicians and dentists office	303	921, 922	445, 446	445, 446	311, 364
304	Baggagemen, transportation	304				
305	Bank tellers	305	301	383	383	516
310	Bookkeepers	310	305	337	337	512
320	Cashiers	312	310	276	276	472
321	Collectors, bill and account	313	313	378	378	510
322	Dispatchers and starters, vehicle	314	315	359	359	552
325	Express messengers and railway mail clerks	315				
335	Mail carriers	323	331	355	355	555
340	Messengers and office boys	324	333	357	357	551
341	Office machine operators	325	341, 342, 343, 344, 345, 350, 355	304, 308, 309, 344, 345, 346, 347, 385	304, 308, 309, 344, 345, 346, 347, 385	511, 580, 581, 590
342	Shipping and receiving clerks	343	374	307, 364	307, 364	561
350	Stenographers, typists, and secretaries	342, 345, 360	370, 371, 372, 376, 391	313, 314, 315	313, 314, 315	570, 582
360	Telegraph messengers	351	383			
365	Telegraph operators	352	384	349		
370	Telephone operators	353	385	306, 348	306, 348	502

380	Ticket, station, and express agents	354	390	318	318	541
390	Clerical and kindred workers (n.e.c.)	320, 333, 340, 341, 350, 370	303, 311, 312, 314, 320, 321, 323, 325, 332, 334, 360, 361, 362, 364, 375, 381, 392, 394, 395, 396	234, 275, 303, 305, 316, 317, 319, 323, 325, 326, 327, 328, 335, 336, 338, 339, 343, 353, 354, 356, 363, 365, 366, 368, 369, 373, 374, 376, 377, 379, 384, 386, 389	234, 275, 303, 305, 316, 317, 319, 323, 325, 326, 327, 328, 335, 336, 338, 339, 343, 353, 354, 356, 363, 365, 366, 368, 373, 374, 376, 377, 379, 384, 386, 389	214, 215, 365, 500, 501, 503, 513, 514, 515, 520, 521, 522, 523, 524, 252, 256, 530, 531, 533, 534, 535, 536, 540, 542, 553, 554, 556, 560, 562, 563, 584, 585, 586, 591, 592, 593
400	Advertising agents and salesmen	380	260	256	256	480
410	Auctioneers	381	261	284	284	
420	Demonstrators	382	262	283	283	490
430	Hucksters and peddlers	383	264	277	277	495
450	Insurance agents and brokers	321, 385	265, 326	24, 253, 375	24, 253, 375	54, 86, 481
460	Newsboys	390	266	278	278	
470	Real estate agents and brokers	393	270	254	254	81, 492
480	Stock and bond salesmen	395	271	255	255	482
490	Salesmen and sales clerks (nec)	394	281, 282, 283, 284, 285, 296	257, 259, 263, 264, 265, 266, 267, 268, 269, 274, 285	257, 259, 263, 264, 265, 266, 267, 268, 269, 274, 285	474, 475, 476, 484, 485, 494, 496
500	Bakers	401	402	687, 763	687, 763	780, 783
501	Blacksmiths	402	401, 403			
502	Bookbinders	404	405	679	679	823
503	Boilermakers	403	404	643	643	621
504	Brickmasons, stonemasons, and tile setters	405	410, 560	553, 563, 565	553, 563, 565	622
505	Cabinetmakers	410	413	657	657	850
510	Carpenters	411	415	554, 567	554, 567	623
511	Cement and concrete finishers	413	421	588	588	625
512	Compositors and typesetters	414	422	736	736	824

513	Cranemen, derrickmen, and hoistmen	415	424	848, 849	848, 849	951, 956
514	Decorators and window dressers	420	425			
515	Electricians	421	430	555, 575	555, 575	635
520	Electrotypers and stereotypers	423	434			
521	Engravers, except photoengravers	424	435	649	649	891
522	Excavating, grading, and road machinery operators	425	412, 436	594, 814, 844, 853, 855	594, 814, 844, 853, 855	630, 631, 952
523	Foremen (nec)	430	441	485, 503, 613, 633, 803, 843, 863	485, 503, 613, 628, 803, 843, 864	620, 700, 770, 900
524	Forgemen and hammermen	431	442	713	713	793
525	Furriers	432	444	674	674	
530	Glaziers	434	445	589	589	636
531	Heat treaters, annealers, temperers	435	446	724	724	815
532	Inspectors, scalers, and graders log and lumber	444	450			
533	Inspectors (nec)	450	452	35, 489	35, 489	601, 666, 941
534	Jewelers, watchmakers, goldsmiths, and silversmiths	451	453	535, 647	535, 647	875
535	Job setters, metal	452	454	703	703	
540	Linemen and servicemen, telegraph, telephone, & p	453	433, 552, 554	527, 529, 577	527, 529, 577	741, 742
541	Locomotive engineers	454	455	824	824	920
542	Locomotive firemen	460	456			
543	Loom fixers	461	483			
544	Machinists	465	461	637	637	803
545	Airplane-mechanics and repairmen	471	170, 471	508, 515	508, 515	703, 714
550	Automobile-mechanics and repairmen	472	472, 473	505, 507, 514	505, 507, 514	715, 716, 720, 721
551	Office machine-mechanics and repairmen	473	475, 484	525, 538	525, 538	701
552	Radio and television-mechanics and repairmen	474	485	523	523	702

553	Railroad and car shop-mechanics and repairmen	475	486			722
554	Mechanics and repairmen, nec	470, 480	470, 480, 481, 482, 492, 495	509, 516, 517, 518, 526, 533, 534, 536, 539, 543, 547, 549	509, 516, 517, 518, 526, 533, 534, 536, 539, 543, 547, 549	670, 704, 705, 710, 711, 712, 713, 724, 726, 730, 731, 732, 733, 734, 743, 751, 752, 754, 760, 762
555	Millers, grain, flour, feed, etc	490	501			
560	Millwrights	491	502	544	544	736
561	Molders, metal	492	503	675	675	
562	Motion picture projectionists	493	505	773	773	441
563	Opticians and lens grinders and polishers	494	506	677	677	
564	Painters, construction and maintenance	495	510, 512, 543	556, 579, 583, 789	556, 579, 583, 789	642
565	Paperhangers	501				643
570	Pattern and model makers, except paper	502	514	645, 656, 676	645, 656, 676	806
571	Photoengravers & lithographers	503	515	735	735	
572	Piano and organ tuners and repairmen	504	516			
573	Plasterers	505	520	584	584	646
574	Plumbers and pipe fitters	510	522	557, 585	557, 585	644
575	Pressmen and plate printers, printing	512	530	734	734	
580	Rollers and roll hands, metal	513	533	707	707	794
581	Roofers and slaters	514	534	595	595	651
582	Shoemakers and repairers, except factory	515	420, 542	566, 669	566, 669	833
583	Stationary engineers	520	545	694, 696	694, 696	861, 862
584	Stone cutters and stone carvers	521	546			
585	Structural metal workers	523	540, 550	597, 646	597, 646	653, 774, 816
590	Tailors and tailoresses	524	551	667	667	835
591	Tinsmiths, coppersmiths, and sheet metal workers	525	535	596, 653	596, 653	652

592	Tool makers, and die makers and setters	530	561	634	634	813
593	Upholsterers	535	563	668	668	845
594	Craftsmen and kindred workers (nec)	545	575, 586			624, 632, 755, 756, 852, 855
595	Members of the armed services	555 or (<i>empstatd</i> = 14 or <i>empstatd</i> = 15)	580 or (<i>empstatd</i> = 14 or <i>empstatd</i> = 15)	905 or (<i>empstatd</i> = 14 or <i>empstatd</i> = 15)	903; 904;905; or (<i>empstatd</i> = 14 or <i>empstatd</i> = 15)	980, 981, 982, 983 or (<i>empstatd</i> = 14 or <i>empstatd</i> = 15)
600	Auto mechanics apprentice	601	474	506	506	
601	Bricklayers and masons apprentice	602	411	564	564	
602	Carpenters apprentice	603	416	569	569	
603	Electricians apprentice	604	431	576	576	
604	Machinists and toolmakers apprentice	605	462, 562	635, 639	635, 639	
605	Mechanics, except auto apprentice	610	491			
610	Plumbers and pipe fitters apprentice	612	523	587	587	
611	Apprentices, building trades (nec)	613	511, 521			
612	Apprentices, metalworking trades (nec)	614	504, 536	654	654	
613	Apprentices, printing trades	615	423, 531			
614	Apprentices, other specified trades	620	571, 945	659	659	
615	Apprentices, trade not specified	621	572			
620	Asbestos and insulation workers	630	601	593	593	640
621	Attendants, auto service and parking	632	623, 711	813, 885	813, 885	935, 936
622	Blasters and powdermen	634	603	615	615	683
623	Boatmen, canalmen, and lock keepers	635	701			
624	Brakemen, railroad	640	712	825	825	923
625	Bus drivers	641	703	808	808	912
630	Chainmen, rodmen, and axmen, surveying	642	605	866	867	
631	Conductors, bus & street railway	645	704			

632	Deliverymen and routemen	650	705	805, 806	806	
633	Dressmakers and seamstresses except factory	651	613	666	666	
634	Dyers	652	620			836
635	Filers, grinders, and polishers, metal	653	621, 651	644, 709	644, 709	800, 821
640	Fruit, nut, and vegetable graders, and packers, e	654	625			604
641	Furnacemen, smeltermen and pourers	670	622			804
642	Heaters, metal	672	626			
643	Laundry and dry cleaning operatives	674	611, 630	747, 748	747, 748	830, 831
644	Meat cutters, except slaughter and packing house	675	631	686	686	781
645	Milliners	680	636			
650	Mine operatives and laborers	685	614, 640	598, 614, 616, 617, 699, 867	598, 614, 616, 617, 699, 868	682, 684
660	Motormen, mine, factory, logging camp, etc	690	710			
661	Motormen, street, subway, and elevated railway	691				926
662	Oilers and greaser, except auto	692	642	519	519	735
670	Painters, except construction or maintenance	694	443, 644	658, 759	658, 759	851, 881
671	Photographic process workers	695	645	774	774	883
672	Power station operators	701	525	695	695	860
673	Sailors and deck hands	703	661	829	829	930, 933
674	Sawyers	704	662	727	727	853
675	Spinners, textile	710				
680	Stationary firemen	712	666	766	766	873
681	Switchmen, railroad	713	713	826	826	
682	Taxicab drivers and chauffeurs	714	714	809	809	914
683	Truck and tractor drivers	715	715	804	804	913
684	Weavers, textile	720	673	739	739	841
685	Welders and flame cutters	721	680	783	783	814

690	Operative and kindred workers (nec)	631, 643, 671, 673, 693, 705, 775	440, 602, 604, 610, 612, 615, 624, 633, 634, 635, 641, 643, 650, 652, 653, 656, 660, 663, 664, 665, 670, 671, 672, 674, 681, 690, 692, 694, 695, 696, 706, 726, 740	455, 487, 573, 636, 673, 683, 684, 688, 689, 693, 704, 705, 706, 708, 714, 715, 717, 719, 723, 725, 726, 728, 729, 733, 737, 738, 743, 744, 745, 749, 753, 754, 755, 756, 757, 758, 764, 765, 768, 769, 777, 779, 784, 785, 786, 787, 793, 794, 795, 796, 797, 798, 799, 856, 864, 873	455, 487, 573, 636, 683, 684, 688, 689, 693, 704, 705, 706, 708, 714, 715, 717, 719, 723, 725, 726, 728, 729, 733, 738, 743, 744, 745, 749, 753, 754, 755, 756, 757, 758, 764, 765, 768, 769, 777, 784, 785, 786, 787, 793, 795, 796, 796, 797, 798, 799, 856, 865, 874, 888	292, 424, 434, 435, 633, 650, 671, 672, 673, 674, 675, 676, 680, 691, 692, 693, 694, 761, 771, 772, 773, 775, 784, 785, 790, 792, 795, 796, 801, 802, 810, 812, 820, 822, 825, 826, 832, 834, 840, 842, 843, 844, 846, 854, 863, 864, 865, 871, 872, 874, 880, 884, 885, 886, 890, 892, 893, 894, 895, 896, 911, 915, 942, 960, 964, 973
700	Housekeepers, private household	802	982	405	405	
710	Laundresses, private household	803	983	403	403	
720	Private household workers (nec)	801, 804	980, 981, 984, 986	404, 406, 407	404, 406, 407	423
730	Attendants, hospital and other institution	810	925	447	447	360
731	Attendants, professional and personal service (nec)	812	933, 942, 952	463, 468, 469	461, 466, 467, 468, 469	454, 455, 460, 465
732	Attendants, recreation and amusement	813	932	427, 456, 459	427, 456, 459	443
740	Barbers, beauticians, and manicurists	814, 843	935, 944	457, 458	457, 458	450, 451
750	Bartenders	815	910	434	434	404
751	Bootblacks	820	941			
752	Boarding and lodging house keepers	821	940			
753	Charwomen and cleaners	824	902	449	449	

754	Cooks, except private household	825	912	433, 436, 437	433, 436	400, 401, 402
760	Counter and fountain workers	830	914	438	438	406
761	Elevator operators	831	943	454	454	
762	Firemen, fire protection	850	961	413, 417	413, 417	372, 374, 375
763	Guards, watchmen, and doorkeepers	851	962	415, 424, 426	415, 424, 426	370, 392
764	Housekeepers and stewards, except private household	832	931, 950	465	463	
770	Janitors and sextons	834	903	448, 453	448, 453	420, 422
771	Marshals and constables	852	963			
772	Midwives	840	924			
773	Policemen and detectives	853	964	6, 414, 418	6, 414, 418	371, 382, 385, 386, 391
780	Porters	841	934	466	464	453
781	Practical nurses	842	926	207	207	350
782	Sheriffs and bailiffs	854	965	423	423	380
783	Ushers, recreation and amusement	874	953	464	462	442
784	Waiters and waitresses	875	915	435	435	411
785	Watchmen (crossing) and bridge tenders	860	960	425, 834	425, 834	394, 934
790	Service workers, except private household (nec)	823, 835, 890	901, 911, 913, 913, 954, 976	439, 443, 444, 467	439, 443, 444, 465	373, 383, 384, 390, 395, 403, 405, 412, 413, 414, 415, 416, 430, 432, 440, 446, 452, 461, 464, 965
810	Farm foremen	901	821	477	477	
820	Farm laborers, wage workers	902	822, 846	479, 483, 484, 488	479, 483, 484, 488	602, 605
830	Farm laborers, unpaid family workers	903	823			
840	Farm service laborers, self-employed	905	824			
910	Fishermen and oystermen	962	752	498, 499	498, 499	610, 611
920	Garage laborers and car washers and greasers	963				
930	Gardeners, except farm, and groundskeepers	964	755	486	486	421, 425

940	Longshoremen and stevedores	965	760	845, 876	845, 876	
950	Lumbermen, raftsmen, and woodchoppers	970	761	496	496	613
960	Teamsters	971	763			
970	Laborers (nec)	960, 972, 973, 985	750, 751, 753, 754, 762, 764, 770, 780, 785, 796	495, 599, 859, 865, 869, 875, 877, 878, 883, 887, 889	495, 599, 859, 866, 869, 875, 877, 878, 883, 887, 889	612, 626, 660, 950, 961, 962, 963, 972, 974, 975
997	Occupation missing/unknown	995				
999	N/A (blank)	990,	0, 991	909	909	0, 992

Appendix C. Attributes of occupations

These attributes have been measured or imputed by researchers or by the Department of Labor’s Employment and Training Administration’s *Dictionary of Occupational Titles* (DOT) in 1991.

For the occupations where many DOT occupations map to just one in the standard system, an average of the values of the relevant DOT occupations is shown. Also, an average length of special vocational training can be imputed for research purposes. Consult the sources in appendix E or the authors for the source data. The cells are blank in cases when there is no direct match between the proposed categories and the DOT data.

Reas stands for Reasoning Development, (1-6) from the DOT.

Math stands for Mathematical Development, (1-6) from the DOT.

Lang stands for Language Use, (1-6) from the DOT.

SVP stands for Specialized Vocational Training (1-9), measured by the following definition, taken from the DOT, volume 2, page 1009:

Level	Time
1	Short demonstration only
2	More than short demonstration, up to one month
3	More than one month, up to three months
4	More than three months, up to six months
5	More than six months, up to twelve months
6	1-2 years
7	2-4 years
8	4-10 years
9	More than 10 years

Str stands for use of physical Strength (1-5), from the DOT, coded from the categories Sedentary Work (1), Light Work (2), Medium Work (3), Heavy Work (4), to Very Heavy Work (5).

Care stands for care work, as coded by England, Budig, and Folbre (2002), by 0 or 1. The criterion for this indicator is whether the job involves face to face attention to other people in a way that improves the recipient’s capabilities.

Proposed standard job title	Proposed standard code	Reason	Math	Lang	SVP	Str	Care
Legislators	3						0
Chief executives and public administrators	4	5.00	4.00	5.00	8.00	1.00	0
Financial managers	7	4.88	4.63	4.63	8.25	1.13	0
Human resources and labor relations managers	8	5.00	4.00	4.83	7.33	1.33	0
Managers and specialists in marketing, advertising, and public relations	13	4.95	3.55	4.45	7.50	1.41	0
Managers in education and related fields	14	5.09	3.55	4.94	8.00	1.18	0

Proposed standard job title	Proposed standard code	Reason	Math	Lang	SVP	Str	Care
Managers of medicine and health occupations	15	5.22	4.33	5.11	7.89	1.33	0
Postmasters and mail superintendents	16	4.50	3.50	4.00	7.50	1.00	0
Managers of food-serving and lodging establishments	17	4.38	3.88	3.88	6.88	1.94	0
Managers of properties and real estate	18	4.53	3.89	4.32	7.21	1.79	0
Funeral directors	19	4.00	4.00	4.00	7.00	2.00	0
Managers of service organizations, n.e.c.	21	4.48	3.61	4.16	6.97	1.68	0
Managers and administrators, n.e.c.	22	4.82	4.08	4.44	7.68	1.39	0
Accountants and auditors	23	5.00	4.92	5.00	7.62	1.15	0
Insurance underwriters	24	5.00	4.00	5.00	7.00	1.00	0
Other financial specialists	25	4.84	3.95	4.47	7.26	1.11	0
Management analysts	26	4.60	3.80	4.10	7.40	1.10	0
Personnel, HR, training, and labor relations specialists	27	4.72	3.56	4.40	6.84	1.40	0
Purchasing agents and buyers, of farm products	28	4.80	3.60	4.40	7.20	1.60	0
Buyers, wholesale and retail trade	29	4.00	3.00	3.50	6.00	2.00	0
Purchasing managers, agents and buyers, n.e.c.	33	4.58	3.83	4.42	7.17	1.42	0
Business and promotion agents	34	4.44	3.67	4.33	6.67	1.33	0
Construction inspectors	35	4.30	3.60	3.70	6.60	2.00	0
Inspectors and compliance officers, outside construction	36	4.39	3.44	4.17	6.58	1.88	0
Management support occupations	37	4.63	3.37	4.37	7.32	1.16	0
Architects	43	5.33	5.33	5.33	7.33	1.67	0
Aerospace engineer	44	5.56	5.44	5.56	8.11	1.67	0
Metallurgical and materials engineers	45	5.18	5.09	5.09	7.82	1.91	0
Petroleum, mining, and geological engineers	47	5.60	5.60	5.60	8.40	1.20	0
Chemical engineers	48	5.50	5.50	5.33	8.00	1.67	0
Civil engineers	53	5.08	5.08	4.85	7.92	1.85	0
Electrical engineer	55	5.13	5.13	5.13	7.93	1.67	0
Industrial engineers	56	5.22	5.04	5.04	7.74	1.57	0
Mechanical engineers	57	5.00	4.93	4.86	7.64	1.57	0
Engineers not elsewhere classified	59	5.33	5.06	4.97	7.94	1.78	0
Computer systems analysts and computer scientists	64	4.62	3.85	4.62	7.08	1.38	0
Operations and systems researchers and analysts	65	6.00	6.00	6.00	7.00	1.00	0

Proposed standard job title	Proposed standard code	Reason	Math	Lang	SVP	Str	Care
Actuaries	66	5.00	5.00	5.00	8.00	1.00	0
Statisticians	67	5.33	5.33	5.00	7.67	1.00	0
Mathematicians and mathematical scientists	68	5.33	5.33	5.33	7.67	1.67	0
Physicists and astronomers	69	6.00	5.83	5.83	8.00	1.67	0
Chemists	73	5.40	5.00	4.80	7.20	2.20	0
Atmospheric and space scientists	74	5.00	5.00	5.00	7.00	2.00	0
Geologists	75	6.00	5.85	5.69	8.00	2.00	0
Physical scientists, n.e.c.	76	6.00	6.00	5.75	7.25	1.75	0
Agricultural and food scientists	77	6.00	5.91	5.82	7.91	2.18	0
Biological scientists	78	6.00	6.00	5.87	8.00	1.93	0
Foresters and conservation scientists	79	5.33	4.89	5.11	7.44	2.11	0
Medical scientists	83	6.00	5.83	6.00	8.00	1.83	0
Physicians	84	6.00	5.00	6.00	8.21	2.08	1
Dentists	85	6.00	5.00	5.00	8.00	1.90	1
Veterinarians	86	5.29	4.21	4.93	7.86	2.36	0
Optometrists	87	5.00	4.00	5.00	7.00	2.00	1
Podiatrists	88	5.00	4.00	5.00	7.00	2.00	1
Other health and therapy	89	4.80	3.60	4.60	6.60	2.20	1
Registered nurses	95	5.00	4.12	4.88	7.18	2.24	1
Pharmacists	96	5.67	5.33	5.33	7.33	2.00	0
Dietitians and nutritionists	97	5.14	4.14	5.00	7.71	1.86	0
Respiratory therapists	98	4.00	3.00	3.00	6.00	3.00	1
Occupational therapists	99	5.00	4.50	5.00	7.00	2.50	1
Physical therapists	103	4.00	2.75	3.75	6.75	2.50	1
Speech therapists	104	5.00	4.67	5.00	7.33	2.00	1
Therapists, n.e.c.	105	4.89	3.78	4.89	7.00	2.00	1
Physicians' assistants	106	5.00	4.00	5.00	7.00	2.00	1
Earth, environmental, and marine science instructors	113						1
Biological science instructors	114						1
Chemistry instructors	115						1
Physics instructors	116						1
Psychology instructors	118						1
Economics instructors	119						1
History instructors	123						1
Sociology instructors	125						1
Engineering instructors	127						1
Math instructors	128						1

Proposed standard job title	Proposed standard code	Reason	Math	Lang	SVP	Str	Care
Education instructors	139						1
Law instructors	145						1
Theology instructors	147						1
Home economics instructors	149						1
Humanities instructors, nec	150	5.20	3.60	4.80	8.00	1.80	1
Subject instructors (HS/college)	154	4.50	2.00	3.50	7.00	2.00	1
Kindergarten and earlier school teachers	155	5.00	4.00	5.00	7.00	2.00	1
Primary school teachers	156	5.00	4.00	5.00	7.00	2.00	1
Secondary school teachers	157	5.00	3.82	5.00	7.00	2.00	1
Special education teachers	158	4.52	3.15	4.27	6.83	1.90	1
Teachers , n.e.c.	159	5.00	3.89	5.00	7.44	1.11	1
Vocational and educational counselors	163	4.65	2.95	4.45	6.75	1.80	1
Librarians	164	4.94	4.00	4.76	6.65	1.88	1
Archivists and curators	165	5.00	5.00	5.00	7.50	1.00	0
Economists, market researchers, and survey researchers	166	5.91	5.55	5.27	7.82	1.36	0
Psychologists	167	5.67	4.67	5.00	6.67	1.00	0
Sociologists	168	5.16	3.68	4.79	7.16	1.42	0
Social scientists, n.e.c.	169	5.00	4.50	5.00	7.50	1.50	0
Urban and regional planners	173	4.68	3.08	4.64	6.72	1.48	0
Social workers	174	4.33	2.83	4.17	5.83	1.83	1
Recreation workers	175	4.89	2.67	4.44	7.00	1.56	1
Clergy and religious workers	176	6.00	4.00	6.00	8.00	1.08	1
Lawyers	178	5.71	3.86	5.43	8.29	1.00	0
Judges	179	5.55	2.18	5.55	7.09	1.09	0
Writers and authors	183	5.00	3.00	5.00	8.00	1.00	0
Technical writers	184	4.71	3.04	4.07	7.25	1.50	0
Designers	185	5.18	3.45	4.55	8.18	1.64	0
Musician or composer	186	4.70	3.17	4.52	6.87	1.74	0
Actors, directors, producers	187	4.81	2.69	3.81	7.13	1.50	0
Art makers: painters, sculptors, craft-artists, and print-makers	188	4.00	2.85	3.54	6.46	2.08	0
Photographers	189	4.50	2.50	4.50	7.50	1.00	0
Dancers	193	3.84	2.49	3.27	5.62	1.78	0
Art/entertainment performers and related	194	5.30	2.63	5.26	7.63	1.22	0
Editors and reporters	195	4.75	2.75	4.50	5.75	1.75	0
Announcers	198	3.69	2.66	3.10	5.52	1.83	0
Athletes, sports instructors, and officials	199	4.80	3.90	4.70	6.40	1.70	0

Proposed standard job title	Proposed standard code	Reason	Math	Lang	SVP	Str	Care
Professionals, n.e.c.	200	4.00	3.00	4.00	6.00	2.00	0
Clinical laboratory technologies and technicians	203	4.50	3.50	4.50	6.50	1.50	0
Dental hygienists	204	5.00	4.00	5.00	7.33	2.44	1
Health record tech specialists	205	3.67	2.67	3.67	5.33	3.00	0
Radiologic tech specialists	206	4.14	3.58	3.89	6.25	2.17	0
Licensed practical nurses	207	4.40	4.40	3.70	6.90	2.10	1
Health technologists and technicians, n.e.c.	208	4.16	3.90	3.84	6.71	1.94	0
Electrical and electronic (engineering) technicians	213	4.86	4.29	4.14	7.29	1.71	0
Engineering technicians, n.e.c.	214	4.59	4.51	4.12	7.02	1.22	0
Mechanical engineering technicians	215	4.57	4.29	3.90	6.67	1.81	0
Drafters	217	3.87	3.27	3.27	5.53	2.33	0
Surveyors, cartographers, mapping scientists and technicians	218	4.67	4.25	3.92	6.50	2.00	0
Biological technicians	223	4.32	4.02	3.95	6.17	2.02	0
Chemical technicians	224	4.79	4.21	4.36	7.43	1.93	0
Other science technicians	225	4.40	3.40	4.00	7.80	1.60	0
Airplane pilots and navigators	226	4.19	3.43	3.81	7.00	1.38	0
Air traffic controllers	227	4.75	4.25	4.75	7.25	1.25	0
Broadcast equipment operators	228	4.00	3.50	3.50	6.00	1.00	0
Computer software developers	229	4.73	2.82	4.64	6.82	1.18	0
Programmers of numerically controlled machine tools	233	4.05	2.97	3.58	6.18	1.92	0
Legal assistants, paralegals, legal support, etc	234	4.14	3.41	3.73	6.50	1.91	0
Technicians, n.e.c.	235	4.00	3.00	4.00	5.50	1.50	0
Supervisors and proprietors of sales jobs	243	4.40	3.20	4.20	5.80	2.00	0
Insurance sales occupations	253	4.67	3.33	4.33	6.67	1.50	0
Real estate sales occupations	254	4.00	2.71	3.71	5.43	2.00	0
Financial services sales occupations	255	5.00	5.00	5.00	8.00	2.00	0
Advertising and related sales jobs	256	3.90	2.92	3.71	4.99	1.96	0
Sales engineers	258	3.00	2.45	2.70	3.15	2.05	0
Salespersons, n.e.c.	274	3.00	2.29	2.10	3.05	1.71	0
Retail sales clerks	275	2.38	2.13	2.25	2.63	2.25	0
Cashiers	276	3.25	2.25	2.94	3.44	1.81	0

Proposed standard job title	Proposed standard code	Reason	Math	Lang	SVP	Str	Care
Door-to-door sales, street sales, and news vendors	277	4.04	3.00	3.75	6.56	1.45	0
Sales demonstrators / promoters / models	283	3.75	2.75	3.00	5.50	1.75	0
Office supervisors	303	4.00	2.63	3.88	5.75	1.25	0
Computer and peripheral equipment operators	308	3.33	1.83	3.33	5.67	1.00	0
Secretaries	313	3.00	1.80	3.00	4.40	1.00	0
Stenographers	314	3.10	2.20	2.90	3.30	1.40	0
Typists	315	3.00	3.00	3.00	4.00	2.00	0
Interviewers, enumerators, and surveyors	316	3.44	2.89	3.11	4.56	1.22	0
Hotel clerks	317	3.40	2.20	3.20	3.80	1.40	0
Transportation ticket and reservation agents	318	3.55	2.36	3.36	4.27	1.18	0
Receptionists	319	3.31	2.23	3.08	4.46	1.38	0
Information clerks, nec	323	3.56	2.00	3.33	4.22	1.00	0
Correspondence and order clerks	326	2.83	1.50	2.67	3.50	2.00	0
Human resources clerks, except payroll and timekeeping	328	3.33	1.83	2.67	3.67	1.67	0
Library assistants	329	3.20	2.35	2.85	4.05	1.28	0
File clerks	335	3.63	3.20	2.80	4.70	1.10	0
Records clerks	336	3.67	2.67	3.00	4.00	1.00	0
Bookkeepers and accounting and auditing clerks	337	3.50	2.89	2.94	4.44	1.11	0
Payroll and timekeeping clerks	338	3.22	2.72	2.61	4.00	1.06	0
Cost and rate clerks (financial records processing)	343	2.50	1.50	1.33	3.17	2.33	0
Billing clerks and related financial records processing	344	2.50	1.50	1.83	2.83	2.17	0
Duplication machine operators / office machine operators	345	2.71	1.43	1.86	3.00	1.86	0
Mail and paper handlers	346	3.38	2.08	3.23	4.69	1.38	0
Office machine operators, n.e.c.	347	3.38	2.25	3.13	4.25	1.13	0
Telephone operators	348	3.33	2.33	3.00	4.33	1.67	0
Other telecom operators	349	3.00	2.50	2.50	3.00	3.00	0
Postal clerks, excluding mail carriers	354	2.78	1.78	2.33	3.22	1.78	0
Mail carriers for postal service	355	2.25	1.63	2.25	2.13	1.75	0
Mail clerks, outside of post office	356	3.48	2.55	3.07	5.14	1.21	0
Messengers	357	3.59	2.61	3.05	5.44	1.79	0
Dispatchers	359	2.88	2.18	2.23	3.75	1.95	0

Proposed standard job title	Proposed standard code	Reason	Math	Lang	SVP	Str	Care
Inspectors, n.e.c.	361	3.00	2.00	2.00	3.00	2.00	0
Shipping and receiving clerks	364	2.75	2.14	2.18	3.11	2.14	0
Stock and inventory clerks	365	3.30	2.59	3.02	4.52	1.62	0
Meter readers	366	4.00	2.80	3.80	5.60	1.40	0
Weighers, measurers, and checkers	368	3.71	2.93	3.43	4.21	1.36	0
Material recording, scheduling, production, planning, and expediting clerks	373	4.00	3.00	4.00	5.50	1.50	0
Insurance adjusters, examiners, and investigators	375	3.33	2.67	3.00	4.00	2.00	0
Customer service reps, investigators and adjusters, except insurance	376	3.47	2.53	3.00	4.13	1.40	0
Eligibility clerks for government programs; social welfare	377	4.00	3.25	3.50	4.75	1.75	0
Bill and account collectors	378	3.75	1.25	3.75	4.50	1.25	0
General office clerks	379	3.30	1.90	3.00	4.60	1.10	0
Bank tellers	383	3.25	2.75	2.63	4.00	1.25	0
Proofreaders	384	3.33	2.67	3.00	3.00	1.33	0
Data entry keyers	385	3.11	2.13	2.80	3.97	1.48	0
Statistical clerks	386	2.22	1.33	1.78	3.11	2.11	0
Teacher's aides	387	2.50	1.67	2.00	2.50	2.50	1
Administrative support jobs, n.e.c.	389	3.80	2.40	3.60	6.80	1.80	0
Housekeepers, maids, butlers, stewards, and lodging quarters cleaners	405	3.78	2.67	3.17	6.06	1.61	0
Private household cleaners and servants	407	4.20	2.89	3.73	6.93	1.98	0
Supervisors of guards	415	3.11	2.00	2.83	4.89	2.06	0
Fire fighting, prevention, and inspection	417	2.00	1.33	2.00	2.33	2.00	0
Police, detectives, and private investigators	418	3.13	2.04	2.79	4.25	1.96	0
Other law enforcement: sheriffs, bailiffs, correctional institution officers	423	3.10	1.70	2.60	4.70	1.60	0
Crossing guards and bridge tenders	425	2.33	1.67	2.00	2.33	2.00	0
Guards, watchmen, doorkeepers	426	2.70	1.80	2.00	3.40	2.20	0
Protective services, n.e.c.	427	3.57	2.50	2.74	6.41	2.37	0
Bartenders	434	2.22	1.78	2.00	2.44	2.11	0
Waiter/waitress	435	2.44	1.67	1.67	3.00	2.22	0
Cooks, variously defined	436	2.00	1.00	1.00	2.00	2.75	0
Food counter and fountain workers	438	2.10	1.40	1.30	2.30	2.50	0
Kitchen workers	439	4.00	3.00	4.00	6.00	2.00	0

Proposed standard job title	Proposed standard code	Reason	Math	Lang	SVP	Str	Care
Waiter's assistant	443	3.22	2.44	3.00	4.61	2.22	0
Misc food prep workers	444	3.00	1.83	2.33	3.67	2.33	0
Dental assistants	445	3.40	2.40	2.90	6.30	2.40	1
Health aides, except nursing	446	1.69	1.13	1.38	2.31	2.56	1
Nursing aides, orderlies, and attendants	447	2.00	1.00	1.50	2.00	1.00	0
Supervisors of cleaning and building service	448	2.50	1.83	1.83	4.17	1.33	0
Janitors	453	3.67	2.87	3.27	6.07	2.13	0
Elevator operators	454	3.00	2.00	3.00	6.00	2.00	0
Pest control occupations	455	3.18	2.18	2.55	5.18	1.91	0
Supervisors of personal service jobs, n.e.c.	456	2.67	1.88	2.21	2.75	2.04	0
Barbers	457	3.22	2.00	3.00	4.11	1.56	0
Hairdressers and cosmetologists	458	2.00	1.00	1.60	2.00	2.00	0
Recreation facility attendants	459	2.90	1.80	2.70	2.90	2.20	0
Guides	461	2.25	1.75	2.25	2.25	2.25	0
Ushers	462	3.50	2.00	3.00	4.00	2.00	0
Public transportation attendants and inspectors	463	3.00	1.67	2.67	3.00	2.67	0
Baggage porters	464	2.43	1.66	2.19	2.77	2.17	0
Welfare service aides	465	4.00	3.10	3.30	6.55	1.85	0
Child care workers	468	4.00	3.25	3.50	6.75	2.75	1
Personal service occupations, nec	469	4.60	3.40	3.80	7.40	2.00	0
Farmers (owners and tenants)	473	5.00	3.67	4.67	7.67	2.00	0
Horticultural specialty farmers	474	2.66	1.84	2.17	4.01	2.23	0
Farm managers, except for horticultural farms	475	2.25	1.00	1.25	3.50	1.50	0
Managers of horticultural specialty farms	476	2.25	1.38	2.00	2.50	1.75	0
Farm workers	479	3.92	3.08	3.42	6.00	2.17	0
Marine life cultivation workers	483	2.70	1.90	2.40	3.70	1.50	0
Nursery farming workers	484	2.75	1.75	2.00	3.75	2.38	0
Supervisors of agricultural occupations	485	2.56	1.78	2.11	3.78	2.00	0
Gardeners and groundskeepers	486	2.80	2.20	2.60	4.00	2.40	0
Animal caretakers except on farms	487	2.23	1.41	1.46	3.46	1.28	0
Graders and sorters of agricultural products	488	2.46	1.38	1.54	3.62	0.81	0
Inspectors of agricultural products	489	3.98	3.47	3.50	7.43	2.12	0
Timber, logging, and forestry workers	496	3.14	2.32	2.73	5.68	2.41	0
Fishers, hunters, and kindred	498	4.00	3.00	3.00	7.00	2.14	0

Proposed standard job title	Proposed standard code	Reason	Math	Lang	SVP	Str	Care
Supervisors of mechanics and repairers	503	3.57	2.71	3.29	5.86	2.71	0
Automobile mechanics	505	3.58	2.92	2.92	6.25	2.17	0
Bus, truck, and stationary engine mechanics	507	2.92	2.08	2.00	5.23	2.23	0
Aircraft mechanics	508	3.65	2.65	2.88	6.47	1.71	0
Small engine repairers	509	3.55	2.76	2.91	6.11	2.09	0
Auto body repairers	514	2.30	1.27	1.64	3.39	1.98	0
Heavy equipment and farm equipment mechanics	516	3.80	3.20	3.02	6.59	2.37	0
Industrial machinery repairers	518	3.50	3.00	2.50	6.00	2.00	0
Machinery maintenance occupations	519	3.63	2.63	2.75	6.13	2.00	0
Repairers of industrial electrical equipment	523	4.00	3.40	3.00	7.00	1.60	0
Repairers of data processing equipment	525	3.52	2.58	2.61	6.06	2.32	0
Repairers of household appliances and power tools	526	3.55	2.64	2.91	6.64	1.91	0
Telecom and line installers and repairers	527	3.51	2.41	2.57	6.51	2.01	0
Repairers of electrical equipment, n.e.c.	533	3.67	3.00	3.00	6.33	1.33	0
Heating, air conditioning, and refrigeration mechanics	534	3.75	2.75	2.88	6.38	2.38	0
Precision makers, repairers, and smiths	535	3.24	2.67	2.67	5.71	2.33	0
Locksmiths and safe repairers	536	4.00	3.00	3.00	7.25	2.00	0
Office machine repairers and mechanics	538	4.00	3.50	3.50	7.33	1.00	0
Repairers of mechanical controls and valves	539	2.93	1.86	2.02	4.60	1.88	0
Elevator installers and repairers	543	3.98	3.06	3.04	7.45	2.23	0
Millwrights	544	3.33	2.21	2.38	6.17	2.00	0
Mechanics and repairers, n.e.c.	549	3.48	2.61	2.39	5.82	2.36	0
Supervisors of construction work	558	2.67	2.00	2.00	5.50	2.50	0
Masons, tilers, and carpet installers	563	3.69	2.92	2.77	6.62	2.85	0
Carpenters	567	3.67	3.17	2.83	6.50	1.42	0
Drywall installers	573	2.83	1.83	1.83	6.67	2.67	0
Electricians	575	3.00	1.50	1.50	4.50	2.50	0
Electric power installers and repairers	577	3.50	2.25	2.50	7.00	3.00	0
Painters, construction and maintenance	579	3.67	2.44	2.78	6.50	1.33	0
Paperhangers	583	3.50	2.33	2.33	6.67	2.00	0
Plasterers	584	3.00	2.00	2.00	6.67	2.00	0

Proposed standard job title	Proposed standard code	Reason	Math	Lang	SVP	Str	Care
Plumbers, pipe fitters, and steamfitters	585	2.83	1.67	2.17	6.00	2.67	0
Concrete and cement workers	588	2.78	1.22	1.22	4.17	2.13	0
Glaziers	589	3.00	1.67	2.00	6.67	2.67	0
Insulation workers	593						0
Paving, surfacing, and tamping equipment operators	594	3.20	1.80	2.20	6.60	1.20	0
Roofers and slaters	595	3.14	1.86	1.86	5.29	1.86	0
Sheet metal duct installers	596	2.80	1.75	1.92	4.46	1.54	0
Structural metal workers	597	3.00	2.33	2.00	5.67	3.00	0
Drillers of earth	598	3.25	2.50	2.13	5.75	1.75	0
Construction trades, n.e.c.	599	2.91	1.82	1.64	4.82	2.27	0
Drillers of oil wells	614	2.76	1.59	1.47	4.41	1.06	0
Explosives workers	615	3.94	2.86	3.09	6.99	2.13	0
Miners	616	3.74	3.14	2.94	6.80	2.60	0
Other mining occupations	617	4.00	3.82	3.27	7.18	2.64	0
Production supervisors or foremen	628	3.80	3.20	2.60	7.00	1.20	0
Tool and die makers and die setters	634	3.47	2.80	2.60	6.47	2.67	0
Machinists	637	3.93	3.36	3.20	6.98	2.55	0
Boilermakers	643	3.71	3.14	2.57	7.14	1.86	0
Precision grinders and filers	644	3.64	2.18	2.45	6.64	1.91	0
Patternmakers and model makers	645	4.00	4.00	3.00	7.00	3.00	0
Lay-out workers	646	3.50	3.50	3.00	6.00	3.00	0
Engravers	649	4.00	2.33	2.67	6.67	2.00	0
Tinsmiths, coppersmiths, and sheet metal workers	653	3.67	3.08	2.75	6.67	2.17	0
Cabinetmakers and bench carpenters	657	3.33	2.44	2.56	6.00	2.00	0
Furniture and wood finishers	658	4.00	3.00	3.00	7.00	2.00	0
Other precision woodworkers	659	3.22	2.22	2.78	6.11	2.89	0
Dressmakers and seamstresses	666	3.18	2.18	2.55	6.27	2.18	0
Tailors	667	3.02	1.98	2.13	5.35	2.17	0
Upholsterers	668	2.33	1.39	1.58	3.46	2.05	0
Shoe repairers	669	3.17	2.46	2.71	5.54	1.92	0
Other precision apparel and fabric workers	674	3.75	2.88	3.63	6.50	1.50	0
Hand molders and shapers, except jewelers	675	3.00	2.00	2.00	7.00	3.00	0
Optical goods workers	677	3.54	2.79	2.85	5.92	2.18	0
Dental laboratory and medical appliance technicians	678	3.00	2.00	2.29	5.86	0.86	0

Proposed standard job title	Proposed standard code	Reason	Math	Lang	SVP	Str	Care
Bookbinders	679	3.00	2.00	2.00	6.67	0.67	0
Other precision and craft workers	684	3.67	2.44	2.89	6.56	2.44	0
Butchers and meat cutters	686	3.29	2.12	2.18	5.76	1.88	0
Bakers	687	3.43	2.86	2.86	5.14	2.29	0
Batch food makers	688	3.75	3.00	2.94	6.94	2.38	0
Adjusters and calibrators	693	3.10	2.60	2.50	5.50	2.70	0
Water and sewage treatment plant operators	694	3.26	2.65	2.61	5.32	2.29	0
Power plant operators	695	2.89	2.19	2.19	4.53	2.42	0
Plant and system operators, stationary engineers	696	2.60	1.82	1.88	3.84	1.90	0
Other plant and system operators	699	3.00	2.19	1.97	4.97	2.52	0
Lathe, milling, and turning machine operatives	703	2.75	2.18	2.00	3.82	2.46	0
Punching and stamping press operatives	706	2.61	1.76	1.89	3.99	2.26	0
Rollers, roll hands, and finishers of metal	707	2.94	2.06	1.94	4.82	1.65	0
Drilling and boring machine operators	708	2.60	1.76	1.84	3.93	2.35	0
Grinding, abrading, buffing, and polishing workers	709	2.55	1.69	1.75	3.74	2.09	0
Forge and hammer operators	713	2.53	1.92	1.90	3.63	2.24	0
Fabricating machine operators, n.e.c.	717	2.96	2.25	2.07	4.43	2.25	0
Molders, and casting machine operators	719	2.68	1.68	1.48	3.78	2.58	0
Metal platers	723	2.62	1.46	1.27	3.85	2.31	0
Heat treating equipment operators	724	2.17	1.33	1.21	3.00	2.25	0
Wood lathe, routing, and planing machine operators	726	2.00	1.20	1.20	2.00	2.20	0
Sawing machine operators and sawyers	727	2.37	1.50	1.50	3.23	2.49	0
Shaping and joining machine operator (woodworking)	728	2.85	1.65	1.89	4.67	2.27	0
Nail and tacking machine operators (woodworking)	729	3.53	2.14	2.31	6.35	1.94	0
Other woodworking machine operators	733	3.50	1.64	2.57	6.14	2.21	0
Printing machine operators, n.e.c.	734	2.08	1.06	1.31	2.86	2.17	0
Photoengravers and lithographers	735	3.03	1.55	1.95	4.87	2.24	0
Typesetters and compositors	736	2.25	1.11	1.75	2.81	2.11	0
Winding and twisting textile/apparel operatives	738	2.27	1.07	1.24	3.05	2.02	0

Proposed standard job title	Proposed standard code	Reason	Math	Lang	SVP	Str	Care
Knitters, loopers, and toppers textile operatives	739	2.80	1.60	1.80	3.40	2.00	0
Textile cutting machine operators	743	2.07	1.11	1.22	2.48	2.19	0
Textile sewing machine operators	744	2.44	1.44	1.67	3.59	2.41	0
Shoemaking machine operators	745	2.13	1.19	1.65	2.81	2.32	0
Pressing machine operators (clothing)	747	2.04	1.24	1.33	2.80	2.15	0
Laundry workers	748	2.17	1.25	1.52	2.71	2.05	0
Misc textile machine operators	749	2.28	1.38	1.46	3.10	2.21	0
Cementing and gluing maching operators	753	2.47	1.64	1.67	3.46	1.66	0
Packers, fillers, and wrappers	754	2.54	1.62	1.70	3.57	2.15	0
Extruding and forming machine operators	755	2.37	1.45	1.65	3.28	2.34	0
Mixing and blending machine operatives	756	2.37	1.59	1.68	3.41	1.93	0
Separating, filtering, and clarifying machine operators	757	2.21	1.40	1.49	2.72	2.16	0
Painting machine operators	759	2.37	1.53	1.53	3.16	2.37	0
Roasting and baking machine operators (food)	763	2.52	1.59	1.59	3.47	2.17	0
Washing, cleaning, and pickling machine operators	764	2.33	1.33	1.36	3.34	2.05	0
Paper folding machine operators	765	2.22	1.36	1.46	2.89	2.10	0
Furnace, kiln, and oven operators, apart from food	766	4.00	2.00	2.00	6.00	2.00	0
Crushing and grinding machine operators	768	3.21	2.00	2.19	5.20	1.70	0
Slicing and cutting machine operators	769	2.45	1.63	1.77	3.40	2.18	0
Motion picture projectionists	773	3.18	2.72	2.49	4.85	2.33	0
Photographic process workers	774	2.56	2.11	2.22	3.50	2.22	0
Machine operators, n.e.c.	779	2.24	1.41	1.52	3.03	2.06	0
Welders and metal cutters	783	2.13	1.20	1.28	3.05	2.06	0
Solderers	784	2.81	2.00	2.20	4.17	2.03	0
Assemblers of electrical equipment	785	2.15	1.33	1.61	2.90	2.04	0
Hand painting, coating, and decorating occupations	789	3.73	2.67	3.07	6.13	2.13	0
Production checkers and inspectors	796	2.64	1.42	1.78	3.08	2.67	0
Graders and sorters in manufacturing	799	3.00	2.00	2.00	3.33	2.67	0

Proposed standard job title	Proposed standard code	Reason	Math	Lang	SVP	Str	Care
Supervisors of motor vehicle transportation	803	2.25	1.38	1.63	2.88	1.88	0
Truck, delivery, and tractor drivers	804	2.33	1.33	1.67	2.33	2.00	0
Bus drivers	808	3.88	2.88	3.50	7.00	1.75	0
Taxi cab drivers and chauffeurs	809	3.07	1.79	2.29	4.43	2.07	1
Parking lot attendants	813	2.50	1.67	2.17	3.33	2.67	1
Railroad conductors and yardmasters	823	3.53	3.03	2.93	6.13	2.07	0
Locomotive operators (engineers and firemen)	824	3.25	2.00	2.25	5.00	2.25	0
Railroad brake, coupler, and switch operators	825	3.00	1.00	2.00	6.00	3.00	0
Ship crews and marine engineers	829	2.65	1.21	1.59	4.12	1.85	0
Water transport infrastructure tenders and crossing guards	834	2.91	1.45	1.45	4.45	2.64	0
Operating engineers of construction equipment	844	2.53	1.70	1.78	3.94	2.21	0
Crane, derrick, winch, and hoist operators	848	2.29	1.54	1.81	3.46	1.56	0
Excavating and loading machine operators	853	2.13	1.35	1.48	3.22	1.04	0
Misc material moving occupations	859	2.00	1.17	1.33	2.67	1.33	0
Helpers, constructions	865						0
Helpers, surveyors	866	1.00	1.00	1.00	1.00	0.00	0
Construction laborers	869	2.50	1.50	1.50	3.50	1.50	0
Production helpers	873	1.67	1.00	1.00	2.00	2.00	0
Garbage and recyclable material collectors	875	1.49	1.02	1.04	1.91	1.87	0
Materials movers: stevedores and longshore workers	876	1.76	1.11	1.15	2.33	1.13	0
Stock handlers	877	2.40	1.40	1.40	3.00	2.80	0
Machine feeders and offbearers	878	1.77	1.06	1.08	2.06	2.15	0
Freight, stock, and materials handlers	883	1.63	1.06	1.19	1.94	1.97	0
Garage and service station related occupations	885	1.63	1.09	1.13	2.13	1.87	0
Vehicle washers and equipment cleaners	887	2.85	2.39	2.33	4.70	0.91	0
Packers and packagers by hand	888						0
Laborers outside construction	889	5.00	4.00	5.00	8.00	1.00	0
Military	905	4.88	4.63	4.63	8.25	1.13	0
Unemployed	991						
Unknown / not matched	999	3.40	3.00	3.00	5.40	1.00	0

Appendix D. Tests of consistency of occupation definitions

The tables which follow compare the most pronounced changes by different criteria in the IPUMS assignment of Census 1950 occupations (in the variable named *occ1950*) and in the proposed classification (in appendix A). We apply the same consistency criteria to both classifications in order to study which categories seem to be inconsistent, and whether one classification is doing much less well than the other. Overall they perform similarly on these criteria.

Appendix D1. Occupation categories with the greatest and smallest increases in mean earned income within the occupation category

Occupations which were not measured at all in one of the years are left out of the table. The measure of income is nominal, so a change of 1.0 is actually a decline in real income.

Occupations with the greatest and least increases in mean nominal income, 1960 to 1970, <i>occ1950</i> classification		
<i>occ1950</i>	Job title from 1950 Census	Mean 1970 earned income divided by mean 1960 earned income
752	Boarding and lodging house keepers	3.22
360	Telegraph messengers	3.12
59	Nurses, student professional	2.89
78	Religious workers	2.76
772	Midwives	2.63
	
731	Attendants, professional and personal service (nec)	1.18
521	Engravers, except engravers	1.18
611	Apprentices, building trades (nec)	1.15
645	Milliners	0.92
100	Farmers (owners and tenants)	0.39

1960 to 1970, proposed standard classification		
Proposed code	Proposed job title	Mean 1970 earned income divided by mean 1960 earned income
468	Child care workers	3.32
469	Personal service occupations, nec	2.98
283	Sales demonstrators / promoters / models	2.61
599	Construction trades, n.e.c.	2.48
89	Other health and therapy	2.41
	...	
199	Athletes, sports instructors, and officials	1.17
185	Designers	1.16
228	Broadcast equipment operators	1.11
475	Farm managers, except for horticultural farms	1.00
473	Farmers (owners and tenants)	0.36

Occupation categories with the greatest and least increases in mean nominal earned income, 1970 to 1980		
IPUMS occ1950	Job title from 1950 Census	Mean 1980 earned income divided by mean 1970 earned income
710	Laundresses, private household	4.46
764	Housekeepers and stewards, except private household	3.11
370	Telephone operators	2.74
600	Auto mechanics apprentice	2.57
614	Apprentices, other specified trades	2.41
	
77	Recreation and group workers	1.32
790	Service workers, except private household (nec)	1.32
6	Authors	1.30
33	Designers	1.23
525	Furriers	1.09

1970 to 1980, proposed standard classification		
Proposed code	Proposed job title	Mean 1980 earned income divided by mean 1970 earned income
475	Farm managers, except for horticultural farms	2.95
348	Telephone operators	2.74
468	Child care workers	2.62
616	Miners	2.46
717	Fabricating machine operators, n.e.c.	2.44
	...	
274	Salespersons, n.e.c.	1.30
183	Writers and authors	1.30
425	Crossing guards and bridge tenders	1.29
194	Art/entertainment performers and related	1.22
328	Human resources clerks, except payroll and timekeeping	0.89

Occupation categories with the greatest and least increases in mean nominal earned income, 1980 to 1990

1980 to 1990, <i>occ1950</i> classification		
<i>occ1950</i>	Job title from 1950 Census	Mean 1990 earned income divided by mean 1980 earned income
430	Hucksters and peddlers	2.60
230	Managers & superintendants, building	2.24
340	Messengers and office boys	2.23
720	Private household workers (nec)	2.22
55	Lawyers and judges	2.20
	
710	Laundresses, private household	1.36
601	Bricklayers and masons apprentice	1.34
380	Ticket, station, and express agents	1.34
614	Apprentices, other specified trades	1.22
612	Apprentices, metalworking trades (nec)	1.16

1980 to 1990, proposed standard classification		
Proposed Standard Code	Proposed job title	Mean 1990 earned income divided by mean 1980 earned income
149	Home economics instructors	2.57
277	Door-to-door sales, street sales, and news vendors	2.42
125	Sociology instructors	2.36
88	Podiatrists	2.35
693	Adjusters and calibrators	2.32
	
456	Supervisors of personal service jobs, n.e.c.	1.30
37	Management support occupations	1.29
866	Helpers, surveyors	1.27
659	Other precision woodworkers	1.22
474	Horticultural specialty farmers	0.75

Occupation categories with the greatest and least increases mean nominal earned income from 1990 to 2000

<i>occ1950</i> (IPUMS)	Job title from 1950 Census	Mean 2000 earned income divided by mean 1990 earned income
100	Farmers (owners and tenants)	7.51
790	Service workers, except private household (nec)	2.00
720	Private household workers (nec)	1.98
302	Attendants, physicians and dentists office	1.94
783	Ushers, recreation and amusement	1.93
	
622	Blasters and powdermen	0.97
51	Entertainers (nec)	0.96
562	Motion picture projectionists	0.95
732	Attendants, recreation and amusement	0.93
96	Technicians (nec)	0.41

Proposed Standard Code	Proposed job title	Mean 2000 earned income divided by mean 1990 earned income
473	Farmers (owners and tenants)	7.38
4	Chief executives and public administrators	3.77
465	Welfare service aides	2.52
799	Graders and sorters in manufacturing	2.43
346	Mail and paper handlers	2.37
	
233	Programmers of numerically controlled machine tools	1.06
773	Motion picture projectionists	0.95
678	Dental laboratory and medical appliance technicians	0.92
159	Teachers , n.e.c.	0.88
876	Materials movers: stevedores and longshore workers	0.72

Appendix D2. The fraction of the work force in each occupation

We measured the changes in the fraction of the work force in each *occ1950* category and proposed standard occupation to detect which job categories experienced sharp change in the number of workers. The work force was defined by the respondent's employment status (*empstatd* value in the set {10,12,14,15}) and age (between 16 and 75). Here are the occupational categories which expanded or shrank rapidly from one decade to the next, first given for *occ1950*, then for the proposed classification.

Occupation categories which grew or shrank the most in size as a fraction of the work force from 1960 to 1970		
<i>occ1950</i> (IPUMS)	Job title from 1950 Census	Fraction of workforce in 1970 divided by fraction of workforce in 1960
26	Natural science (nec)-Professors and instructors	10.70
594	Craftsmen and kindred workers (nec)	5.44
51	Entertainers (nec)	5.18
10	College presidents and deans	5.10
24	Psychology-Professors and instructors	3.71
	...	
59	Nurses, student professional	0.24
710	Laundresses, private household	0.23
752	Boarding and lodging house keepers	0.21
780	Porters	0.12
300	Agents (nec)	0.11

Proposed Code	Proposed job title	Fraction of workforce in 1970 divided by fraction of workforce in 1960
14	Managers in education and related fields	25.41
13	Managers and specialists in marketing, advertising, and public relations	14.18
859	Misc material moving occupations	12.47
599	Construction trades, n.e.c.	6.98
703	Lathe, milling, and turning machine operatives	6.41
	
193	Dancers	0.24
464	Baggage porters	0.12
347	Office machine operators, n.e.c.	0.10
674	Other precision apparel and fabric workers	0.01
225	Other science technicians	0.00

Occupation categories which grew or shrank the most in size as a fraction of the work force from 1970 to 1980		
1950 occupation category (IPUMS)	Job title from 1950 Census	Fraction of workforce in 1980 divided by fraction of workforce in 1970
69	Misc. natural scientists	7.71
731	Attendants, professional and personal service (nec)	2.86
525	Furriers	2.60
82	Psychologists	2.50
33	Designers	2.24
	
27	Social sciences (nec)-Professors and instructors	0.30
420	Demonstrators	0.23
681	Switchmen, railroad	0.14
710	Laundresses, private household	0.12
612	Apprentices, metalworking trades (nec)	0.10

Proposed standard code	Proposed job title	Fraction of workforce in 1980 divided by fraction of workforce in 1970
225	Other science technicians	109.92
675	Hand molders and shapers, except jewelers	11.03
888	Packers and packagers by hand	10.47
76	Physical scientists, n.e.c.	7.71
235	Technicians, n.e.c.	5.75
	...	
439	Kitchen workers	0.16
754	Packers, fillers, and wrappers	0.14
469	Personal service occupations, nec	0.13
346	Mail and paper handlers	0.05
275	Retail sales clerks	0.03

Occupation categories which grew or shrank the most in size as a fraction of the workforce from 1980 to 1990		
<i>Occ1950</i> (IPUMS)	Job title from 1950 Census	Fraction of workforce in 1990 divided by fraction of workforce in 1980
420	Demonstrators	2.93
380	Ticket, station, and express agents	2.21
250	Officials & administrators (nec), public	2.05
6	Authors	1.98
480	Stock and bond salesmen	1.86
	
624	Brakemen, railroad	0.35
601	Bricklayers and masons apprentice	0.27
12	Agricultural sciences-Professors and instructors	0.24
604	Machinists and toolmakers apprentice	0.23
632	Deliverymen and routemen	0.17

Proposed Standard Code	Proposed job title	Fraction of workforce in 1990 divided by fraction of workforce in 1980
37	Management support occupations	10.19
866	Helpers, surveyors	6.26
24	Insurance underwriters	3.13
205	Health record tech specialists	3.10
283	Sales demonstrators / promoters / models	2.93
	
825	Railroad brake, coupler, and switch operators	0.35
703	Lathe, milling, and turning machine operatives	0.31
708	Drilling and boring machine operators	0.27
149	Home economics instructors	0.20
865	Helpers, constructions	0.16

Occupation categories which grew or shrank the most in size as a fraction of the workforce from 1990 to 2000		
<i>Occ1950</i> (IPUMS)	Job title from 1950 Census	Fraction of workforce in 2000 divided by fraction of workforce in 1990
69	Misc. natural scientists	12.04
77	Recreation and group workers	4.70
99	Professional, technical & kindred workers (nec)	3.11
782	Sheriffs and bailiffs	2.83
622	Blasters and powdermen	2.19
	...	
522	Excavating, grading, and road machinery operators	0.17
81	Economists	0.15
96	Technicians (nec)	0.12
582	Shoemakers and repairers, except factory	0.11
250	Officials & administrators (nec), public	0.08

Proposed Standard Code	Proposed job title	Fraction of workforce in 2000 divided by fraction of workforce in 1990
726	Wood lathe, routing, and planing machine operators	69.26
4	Chief executives and public administrators	52.23
346	Mail and paper handlers	19.05
275	Retail sales clerks	15.62
729	Nail and tacking machine operators (woodworking)	13.49
	...	
594	Paving, surfacing, and tamping equipment operators	0.19
225	Other science technicians	0.13
684	Other precision and craft workers	0.11
883	Freight, stock, and materials handlers	0.03
235	Technicians, n.e.c.	0.01

Appendix D3. Measures of the dispersion of earned income

Our third criterion of occupational stability was earning inequality. Earnings inequality was measured by the coefficient of variation, or the sample's standard deviation for each occupation divided by its mean.

Occupation categories with the greatest and least increases in coefficient of variation of income, 1960 to 1970		
<i>occ1950</i> (IPUMS)	Job title from 1950 Census	Ratio of 1970 coefficient of variation to 1960 coefficient of variation
100	Farmers (owners and tenants)	2.87
771	Marshals and constables	1.87
700	Housekeepers, private household	1.78
69	Misc. natural scientists	1.76
611	Apprentices, building trades (nec)	1.72
	...	
201	Buyers and shippers, farm products	0.73
15	Economics-Professors and instructors	0.71
645	Milliners	0.67
660	Motormen, mine, factory, logging camp, etc	0.65
59	Nurses, student professional	0.63

Proposed Standard Code	Proposed job title	Ratio of 1970 coefficient of variation to 1960 coefficient of variation
473	Farmers (owners and tenants)	2.95
76	Physical scientists, n.e.c.	1.76
199	Athletes, sports instructors, and officials	1.70
883	Freight, stock, and materials handlers	1.64
703	Lathe, milling, and turning machine operatives	1.54
	...	
584	Plasterers	0.76
28	Purchasing agents and buyers, of farm products	0.73
745	Shoemaking machine operators	0.73
119	Economics instructors	0.71
583	Paperhangers	0.63

Occupation categories with the greatest and smallest increases in coefficient of variation of income, 1970 to 1980

<i>occ1950</i> (IPUMS)	Job title from 1950 Census	Ratio of 1980 coefficient of variation to 1970 coefficient of variation
525	Furriers	0.74
573	Plasterers	0.74
630	Chainmen, rodmen, and axmen, surveying	0.65
612	Apprentices, metalworking trades (nec)	0.62
201	Buyers and shippers, farm products	0.62
	...	
31	Dancers and dancing teachers	0.36
78	Religious workers	0.36
710	Laundresses, private household	0.30
764	Housekeepers and stewards, except private household	0.29
700	Housekeepers, private household	0.24
31	Dancers and dancing teachers	0.36

Proposed Standard Code	Proposed job title	Ratio of 1980 coefficient of variation to 1970 coefficient of variation
349	Other telecom operators	0.79
225	Other science technicians	0.76
658	Furniture and wood finishers	0.75
584	Plasterers	0.74
139	Education instructors	0.71
	...	
105	Therapists, n.e.c.	0.35
168	Sociologists	0.34
475	Farm managers, except for horticultural farms	0.33
205	Health record tech specialists	0.29
316	Interviewers, enumerators, and surveyors	0.28

Occupation categories with the greatest and smallest increases in coefficient of variation, 1980 to 1990		
<i>occ1950</i> (IPUMS)	Job title from 1950 Census	Ratio of 1990 coefficient of variation to 1980 coefficient of variation
610	Plumbers and pipe fitters apprentice	1.80
24	Psychology-Professors and instructors	1.53
380	Ticket, station, and express agents	1.49
45	Industrial-Engineers	1.44
47	Metallurgical, metallurgists-Engineers	1.40
	...	
270	Postmasters	0.87
700	Housekeepers, private household	0.85
460	Newsboys	0.82
600	Auto mechanics apprentice	0.80
12	Aricultural sciences-Professors and instructors	0.70

Proposed Standard Code	Proposed job title	Ratio of 1990 coefficient of variation to 1980 coefficient of variation
729	Nail and tacking machine operators (woodworking)	1.70
34	Business and promotion agents	1.56
118	Psychology instructors	1.53
485	Supervisors of agricultural occupations	1.51
318	Transportation ticket and reservation agents	1.49
	...	
139	Education instructors	0.84
149	Home economics instructors	0.81
483	Marine life cultivation workers	0.78
726	Wood lathe, routing, and planing machine operators	0.76
693	Adjusters and calibrators	0.47

Occupation categories with the greatest and smallest increases in coefficient of variation, 1990 to 2000		
<i>occ1950</i> (IPUMS)	Job title from 1950 Census	Ratio of 1990 coefficient of variation to 1980 coefficient of variation
96	Technicians (nec)	4.27
513	Cranemen,derrickmen, and hoistmen	3.83
680	Stationary firemen	3.74
570	Pattern and model makers, except paper	3.58
34	Dieticians and nutritionists	3.47
	...	
84	Misc social scientists	1.84
760	Counter and fountain workers	1.83
783	Ushers, recreation and amusement	1.53
45	Industrial-Engineers	1.40
100	Farmers (owners and tenants)	0.81

Proposed standard code	Proposed job title	Ratio of 1990 coefficient of variation to 1980 coefficient of variation
594	Paving, surfacing, and tamping equipment operators	5.00
106	Physicians' assistants	4.07
764	Washing, cleaning, and pickling machine operators	4.04
848	Crane, derrick, winch, and hoist operators	3.83
539	Repairers of mechanical controls and valves	3.81
	
225	Other science technicians	1.33
168	Sociologists	1.28
346	Mail and paper handlers	1.18
489	Inspectors of agricultural products	0.99
473	Farmers (owners and tenants)	0.82

Appendix E. Data and code available from the authors

DOT stands for *Dictionary of Occupational Titles* (1991).

Spreadsheets with the DOT values in appendix C.

DOTsum.xls – drawn principally from the DOT attributes summary at the National Crosswalk Center, accessible at <http://webdata.xwalkcenter.org/ftp/DOWNLOAD/occnames/dot91ac.zip>

Stata code to assign job codes and labels

Remapjob.do – given variable *year* for the Census or CPS, *empstatd* with the respondent’s employment status, and variable *ocsrc* with the occupation code given that year, it assigns the proposed code to variable *ocdest*.

Labels.do – creates text labels with the proposed occupation category names for the *ocdest* variable.

SAS code - We have five SAS programs:

Freq_Census.sas - This program investigates how IPUMS assigned *occ1950* codes to OCC codes in each Census year, and creates a time series of occupational codes and their descriptions.

occmapping_analysis.sas - This program checks the input file with mappings between occupational categories in each Census year and proposed standard codes for inconsistencies, and then automatically creates Excel tables of problem codes.

occ1950.sas - computes the statistics shown in Appendix D based on the *occ1950* classification for the Census 1960-2000.

proposed.sas - computes the Appendix D statistics for the proposed classification.

DOTcomparison.sas - Based on a mapping from the National Crosswalk Center of the 12741 DOT occupations to the 1990 Census occupations, this program computes averages of several DOT-measured attributes for the proposed-standard categories. The attributes computed are those listed in appendix C.

Contact Information:

Peter B. Meyer: Meyer.Peter@bls.gov 202-691-5678

Anastasiya Osborne: Osborne.Anastasiya@bls.gov 202-691-5633

Office of Productivity and Technology, Room 2180

Bureau of Labor Statistics, Department of Labor

2 Massachusetts Ave N.E., Washington DC, 20212-0001

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