Preliminary.

The Spread of Modern Retail: Implications for Wages

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With malls and franchise strips increasingly dotting the landscape, there is an image that the U.S. labor market is one in which middle-class jobs in manufacturing are being replaced by minimum wage jobs in the retail sector.[1] There is no question that retail jobs have spread. While manufacturing has declined in size, retail trade has risen in size. The contrast between manufacturing and retail trade is illustrated in Figure 1. Figure 1 shows that the employment in retail surpassed that in manufacturing as of March 2002, when both stood at 15 million jobs. From 1970 to the peak in 2008, retail grew from 7.4 million jobs to 15.5 million jobs. Manufacturing declined from a peak of 19.4 million jobs—which was reached in January 1979 – to a low point of 11.7 million jobs in July of 2009.[2]

The goal of this paper is to examine the wages that accompany the spread of retail in the economy. In particular, does retail trade pay only minimum wages, as the intensity of competition in that sector suggests that it might? Or, are there higher wages for most workers? Are the productivity gains in that sector accompanied by higher pay?

These questions are especially important because the retail sector is likely to continue to flourish. Much of the economic activity in retail relates to non-tradable goods, so jobs here are likely to stay. As in manufacturing, the retail sector is one where there is room for substitution of computers for people; but, contrary to manufacturing, overall growth in the sector so far is swamping that substitution. There is some substitution in retail at the product level: Internet firms are replacing some brick and morter over time. In rebounding from the recession of 2008-2009, it is not clear whether brick and morter will resume its previous trend. Some of the retail jobs that we model are in distribution centers, not stores. However, when talking about the full

[1] More generally, there is clear evidence of polarization in the labor market, with middle income jobs becoming rarer while lower-paid and higher-paid jobs are both growing in numbers (Autor, Katz, and Kearney, 2006, 2008).

[2] To construct the time series in this chart, we define retail trade as the common "retail trade" sector that is a standard SIC defnition. This underestimates the number of retail trade workers. In all other empirical work below, we broaden the definition to contain, for example, hotels and motels – see the Appendix and the definitions in our Data section below.

scope of retailing, including, for example, gas stations, hotels, and grocery stores, the Internet now stands at about five percent of retail sales.[3]

The segment of retail that is growing most is what we refer to as modern retail. Modern retail firms are those that have successfully developed as chains in the last few decades. Following Milgrom and Roberts (1990), Modern Retail firms are perhaps best described as those that have undertaken product and/or process innovations.[4] Examples of modern retail firms are abundant. Wal-Mart is known for process innovations – for developing relationships with suppliers and computerizing all elements of production and supply. Many big retail firms have followed Wal-Mart's lead. Starbucks is known for product innovations – for making specialty coffee a common retail good in the United States, and then exporting this concept globally. Many large retail and service firms combine product and process along with organizational innovations.

There is ample evidence that the retail sector has become more concentrated, with increasing numbers of large firms or chains that comprise modern retail. Using data from the Longitudinal Business Database (LBD), Jarmin, Klimek, and Miranda (2009), for example, show that there has been an increase in firm size in retail. There has also been an increase in establishment size in at least some retail subsectors (Basker, 2012a).

These increases in firm and establishment size may be promising developments for the wage levels of employees, for three reasons. First, there may be an increase in wages as firms grow in size. Research on the economy as a whole has provided strong evidence of positive firm size effects after controlling for work conditions and worker quality.[5] Second, there is room for promotion in large firms, and with such promotion comes the promise of higher wages. Third,

[3] http://www.census.gov/retail/mrts/www/data/pdf/ec_current.pdf

[4] In other words, we refer to Modern Retail as the retail equivalent of Modern Manufacturing, which Milgrom and Roberts (1990) define based on a system of product and process innovations in manufacturing that is accompanied by a set of complementary organizational practices, like lean manufacturing.

[5] Brown and Medoff (1998), Oi and Idson (1999), Fox (2009), and Pedace (2010). Bayard and Troske (1999) analyze a cross section of data from 1990 and find no firm-size effects using a linear model of firm size in retail. They do find establishment size effects.

there may be an increase in the returns to education. Larger firms that run more complicated operations are likely to increase the returns to education and to worker quality. These are the determinants of wage levels that are considered in this paper.

We model wage levels using Current Population Survey (CPS) data from 2004 to 2011 and National Longitudinal Survey of Youth (NLSY) data from 1986 to 2010. The CPS data provides the large sample size needed to model wage levels as a function of firm size. The NLSY data provides the longitudinal platform to model the determinants of wages and to estimate establishment size effects.

At the end of the analysis, wages in the retail sector are compared to wages in manufacturing. The reasons for this comparison are twofold: first, the presence of high-paying jobs in other sectors, including manufacturing, is often attributed to the presence of rents that are then shared with labor. The retail sector, in contrast, is typically viewed as very competitive, leaving little scope for such rent sharing. We expect the competitive nature of the retail sector to affect the level of wages, and then ask whether it also affects the extent to which firm size and education affect wages in this sector compared to what occurs in manufacturing. Second, there is an emphasis on "good jobs" in manufacturing in the public discourse, with the implication that policies should be put in place to try to restaure the predominance of manufacturing in the economy. It is, therefore, natural to ask how much retail differs from manufacturing, or, if there are any similarities. We find for example that there are more women working in retail, while fewer women get jobs in manufacturing. As a growing sector, retail is contributing to household incomes through women's employment.

The results are as follows.

1. We find substantial returns to firm size in the retail sector, in terms of wages. This is true at every education level and for both men and women. Medium to large firms pay more than small ones.
2. The return to firm size is in part a return to education. Across all firms, the return to education is sizable in the cross section (without controls for ability), but it is more pronounced for large firms. Large firms pay 18 percent more than small to high school educated or less but pay 40 percent more for college educated.
3. There are also wage returns to establishment size per the NLSY data. For women and men, moving from a small establishment of less than ten employees to one with 50 to 500 employees increases pay by 30 to 47 percent.
4. Larger establishments pay for worker quality. Moving from an establishment of less than ten employees to one with 50 to 500 employees increases pay by 16 percent for the high school educated or less after controlling for unobserved worker quality. The data support the view that higher quality workers are sorted into larger establishments.
5. Managers earn a pay premium of about 20 to 30 percent after controlling for education. Even for the less educated – those with high school education or less – the promotion to manager is accompanied by a pay increase of 27 percent. We confirm that a substantial part of this pay premium is due to higher quality workers being promoted.

In sum, while the retail sector wages are lower than those in manufacturing, the increasing firm size and establishment size we view as a hallmark of modern retail is accompanied by increasing wages and opportunities for promotion that entail higher wages. The decline in the role of small firms in retail, and the accompanying productivity improvements in this sector, seem to imply a decline in low paying jobs in that segment of the economy. While retail pay is considerably below that in manufacturing, pay in retail also is typically above minimum wages. These results contradict the image of the retail sector as one comprised entirely of the lowest paying jobs.

I. The Rise of Modern Retail

The growth of retail has been accompanied by growth in modern retail chains. Over the last several decades, the growth in firm size in the retail sector has been pronounced. Jarmin, Klimek, and Miranda (2009) document the rise of modern retail. As they describe, we think of chains like Wal-Mart and Home Depot, but the trend towards large scale retail firms predates these firms. They point out that the share of retail firms that are accounted for by single-location stores was 70.4 percent in 1948 and 39 percent by 1997. Similarly, over this time period the market share of firms with more than 100 establishments rose from 12.3 percent to 36.9 percent. Using the Longitudinal Business Database, they show that retail establishments operated by chain stores accounted for only 10 percent of all establishments in 1963, but 35 percent had become part of chains in 2000. As a result of the growth of chains, employment at single-location retailers grew by 2 million between 1976 and 2000, but employment at chains grew by 8 million.

One source of the growth of retail chains has been the rise of women in the work force (Pashigan and Bowen, 1994). Women's increasing income and resulting time constraints have lead to an increase in the demand for brand products, because the brand conveys information that would take time to access via personal services. Nationally recognized brands – those of individual products and those of stores - save shopping and search time.

The growth of retail chains has been accompanied by growth in retail establishment size as well. The size of the retail establishment has more than doubled from 1958 to 2000 (Jarmin, Klimek, and Miranda, 2009, page 240). The mom-and-pop stores grew from 5 to 7 employees per store. Local chain stores increased the number of employees from 9 to 15, regional chains from 12 to 15, and national chains from 15 to 25. Basker (2012a) also emphasizes the increasing size of establishments. As retail chains have spread, each store offers more product variety and that increases the size of the establishment.

Productivity growth in the retail sector has been enhanced markedly by the growth of chains. Foster, Haltiwanger, and Krizan (2006) show that the net entry of establishments accounts for the productivity growth in the retail sector over time, and that this net entry is driven by chain stores. Productivity gains in modern retail are due to investments in information technologies that lead to lower inventories, more frequent deliveries, and larger stores (Jarmin, Klimek, and Miranda, 2009; Holmes, 2001). Given these mechanisms for productivity growth, one would expect that large chains would have the greatest productivity gains from information technologies. And indeed they do (Doms, Jarmin, and Klimek, 2004). Overall, the retail sector has contributed to productivity growth in the economy over the last 50 years. Jorgenson, Ho and Samuels (2010) state that in when they order industries by contributions to value added and productivity, wholesale and retail trade are heading the list.[6]

As the numbers above indicate, mom-and-pop stores (which we equate to single-location stores) have not become extinct with the growth of large chains, on the contrary. Large numbers of these stores continue to offer a variety of products, including many specialty products. While these are stores where productivity is unlikely to grow due to information technologies, their levels of productivity may be high for workers that have the skills required in these stores.

How does the growth in productivity in modern chains affect labor demand in the retail sector? Autor, Levy, and Murnane (2003) show that within industries, non-routine analytic and non-routine interactive tasks showed strong growth in employment throughout the 1970s and 1990s. In contrast, routine cognitive and routine manual tasks have experienced declines. How might these overall trends apply to retail trade? Basker (2012b) examines the effect of the introduction of scanners in grocery stores. Much of retail trade has adopted bar code scanners that raise productivity. Smart cash registers, using pictures, also substitute for labor in the fast food industry. So there has been some substitution of capital for labor. Autor, Levy, and Murnane

[6] Haskel and Sadun (2011) show the regulation in the UK retail sector led to smaller shps and TFP slowdown. Regulation against big box stores in the U.K. also led to decline in small independent stores.

show that the industries that invest in information technologies – which would include scanners and cash registers – would lower demand for routine work. However, much work in retail remains non-routine, as witnessed by the growth in employment that has occurred in this sector despite investment in various labor-substituting technologies.

II. Evidence from Case Studies

Before turning to our analyses of data on wages from the CPS and NLSY, it is valuable to look to case study evidence on pay in some well-known firms. Table 1 summarizes data from GlassDoor on pay at Wal-Mart, Starbucks, Whole Foods, and Costco. In these firms, starting hourly pay is always above minimum wages.[7] But what is most pronounced is the increase in pay as workers become managers. According to these data, an entry level cashier in a Wal-Mart store earns $8.54, but a Supervisor earns $14.28 per hour. More striking is that a Shift Manager earns $61,985 and a Store Manager earns $90,845. Wal-Mart is at the mid-point of our set of cases. Starbucks pays less; its establishments are smaller. The high-end grocery and big box stores, of Whole-Foods and Costco, pay yet higher wages. While these are but a few examples, they illustrate well some of the overall patterns we find in our data analyses below.

III. Data Sets

Data from the March Supplement of the Current Population Survey (CPS) is used to model retail and manufacturing wage levels and employment from 2004 to 2011. The CPS allows us to examine the impact of firm size on wages as respondents are asked how many people work at all locations of their employer. Yearly income is recorded for the previous year and thus 2011 income is the most current available (reported in the 2012 survey). The sample begins with data from 2004 because 2005 was the first survey year in which a single variable could be used to

[7] Glassdoor.com is a website where people voluntarily enter their wages and jobs. It is widely used and seems to have less possible bias of disgruntled employees listing pay (which may be a problem at PayScale, where pay is lower).

uniquely identify a person (previously multiple variables were required) making construction of a panel cleaner. Another benefit of using this time period is that it occurs after changes in industry codings in the CPS and so avoids inconsistencies in industry definitions over time. The means and definitions of the variables are shown in Table 2.

We use the CPS both cross-sectionally (benefiting from its large sample size) and as a panel (to control for non-changing individual-specific characteristics). Individuals are present in the March sample at most twice in the CPS data. We match people using their unique identification number in addition to their gender and race to avoid potential match errors – some of which might arise due to imputation. We have 105,025 individual-years in retail trade[8] for the cross-section and 16,875 individuals are matched for the panel. The numbers are 78,851 and 16,107 respectively for manufacturing. Using the CPS as a panel has several limitations. As is well known, the panel is very short in the CPS, and the match rate for any given pair of years is at most 50% (and is often much less due to mobility, etc.). Our match rate over the entire data set is approximately 35%. The CPS is designed to accurately reflect the population for any given time period, but its design is not well suited to using its panel structure.

We use the National Longitudinal Survey of Youth (NLSY) data set to complement our analyses above in several ways. First, while the NLSY has the drawback of being based on a much smaller sample of individuals, the data follow individuals that were aged 14 to 22 in 1979 up to recent times. We exploit the longitudinal nature of these data below. Second, while there are no questions about the size of the firms for which respondents work in the NLSY, questions about establishment size were added to the questionnaire in 1986. We can therefore follow respondents aged 22-53 from 1986 through to 2010, with odd-numbered years of the survey skipped after 1994. Finally, there is oversampling of the economically disadvantaged in this

[8] In this paper, we use a broad definition of retail, one that is in line with the pre-1997 SIC definition of the retail sector and thus includes industries now classified as Accommodations and Food Services. See Appendix A for more details.

database, and this information is used in our analyses. There are 21,878 respondent-years of data in retail trade and 19,729 respondent-years of data in manufacturing, for a total of 6,095 and 4,296 respondents, respectively. Due to movements in and out of the retail and manufacturing sectors, we observe an average of three to four years of data for each person in each sector (see the empirical results section for sample sizes). The means of the variables, calculated with appropriate sampling weights to represent population estimates, as well as all variable definitions, are again shown in Table 2.

Note that the retail sector is one that comprises a large number of part-time workers. In retail, 60 percent of women are full-time, and 77 percent of men are full-time. In manufacturing, the comparable numbers are 91 percent and 97 percent. Some would say that part-time workers would prefer full-time jobs and are hoping for such jobs. Others would say that retail provides flexible hours and part-time work for many who prefer that flexibility. In what follows, we focus on full-time workers, working more than 35 hours per week. Our intention is to model pay for those whose primary job is in retail, and who dedicate most of their time to that job. When we add part-time workers to the regressions, all conclusions are the same, but some magnitudes differ. These differences are summarized in footnotes below.[9]

IV. Some Simple Statistics

There are some surprises in the mean wages and characteristics of workers that one garners from the descriptive statistics in Table 2. Retail is not comprised only of less educated workers. In the CPS data, 51 percent have a high school education or less, 32 percent have some college, and 18 percent have a college education or more.

Retail is also noteworthy because it provides substantial employment for women. Using our CPS data indicate that only 29 percent of manufacturing workers were women in 2004-2011; in

[9] An appendix showing results when part-time workers are included in the retail sector is available upon request.

retail the figure was 47 percent. Thus, the decline of jobs in manufacturing is pertaining more to men who predominantly occupy these jobs.

The case studies above suggested that there is considerable variance of pay in retail, which is often unacknowledged. Figure 2 shows this variance of pay, using CPS data. In 2010 dollars, 59 percent of non-managers earned less than $20,000, but at the high end, 7 percent of workers earned more than $50,000. Though not shown in the figure, only 15 percent of workers earn minimum wage or less. For managers in retail, the pay is more dispersed: 18 percent earn less than $20,000, but 32 percent earned more than $50,000.[10]

Another relevant comparison is of retail trade jobs to service occupations as defined by Autor and Dorn. The reason this is relevant is that these service occupations have been growing as middle income occupations decline.[11] The polarization of the labor market is in large part due to the decline in middle-income routine work which is being squeezed out due to computerization (Autor and Dorn, forthcoming). Service occupations are defined by these authors as those that offer personal services, and these services can rarely be computerized. So the quantity of jobs and the pay has risen for these workers. Regarding the degree of computerization, retail may lie between the service occupations and the routine middle income occupations, in two ways. First, some retail work is routine and computerized – with retail cashiers as a possible example – but much retail work cannot be computerized. In research on pay for low-skilled workers, Autor and Dorn (forthcoming) cite cashiers as an occupation ranked high on the Routine Task Index, suggesting that employment of cashiers is reduced due to the substitution of capital for routine tasks.[12] But many of the workers in the retail sector are in sales, requiring face-to-face contact

[10] Another data set, the BLS Occupational Employment Survey, has the largest sample size measuring the employment of first-line supervisors in retail. Focusing only on first-line supervisors, in 2010 there were 1.16 million supervisors earning an average of $39,130, compared to 3.44 million cashiers earning an average of $19,030. These data are not used here because we do not have access to panel data on individuals.

[11] Note that this is a discussion of service occupations (e.g. gardeners, etc.) and not the service industry (e.g. accountants, etc.).

[12] Autor and Dorn focus on service sector jobs as those that are in the low skill range but growing in employment and wages due to the limited substitution of computers for labor. Their work contains little evidence on where

between the employee and customer, or in back-room operations. Moreover, Basker (2012a) finds little evidence that fewer cashier jobs are needed as a result of computerization. Second, nationally, pay in retail exceeds that of service occupations: using our CPS data, services paid $28,120 and $22,960 for men and women in 2010, relative to $38,420 and $28,800 for men and women in retail. So when we think of retail, we should think of a growth sector with some computerization that pays more than the service occupations.

V. Comparing Retail to Manufacturing

If manufacturing is used as the standard of comparison, how do retail and manufacturing really compare? Table 3 breaks down yearly pay by occupation (non-managerial and managerial) and by education. Compare two relevant alternatives, a managerial job in retail to an operatives job in manufacturing. These are relevant comparisons because for the less educated, a managerial job is likely a well-paid job in retail and an operative is a typical well-paid job for manufacturing. Those in managerial occupations in retail could be about as skilled as those in non-managerial jobs in manufacturing. Remarkably, the pay is about the same. Operatives jobs in manufacturing are reasonably well paid, as are managers in retail. In the broader economy, the subsitution of retail jobs for manufacturing jobs may provide reasonable pay if retail workers become managers.

VI. Regression Analyses

The rise of modern retail firms brings to mind images of hamburger flippers and sales people earning minimum wages at the expense of traditional retail jobs in mom-and-pop stores. However, there are at least two features of modern retail firms that, in our view, should alter this image. First, modern retail firms are big. As described above, chain stores have become either

retail jobs fall in the spectrum of wage polarization because their analysis aggregates retail jobs with clerical jobs. Basker (2012b) emphasizes the growth of scanners in grocery stores, but bar codes and scanners are likely prevalent in most modern retail firms.

regional in nature – suggesting mid-size firms – or national or even international in scope – suggesting very large firms. In our data, 45 percent of workers in retail work in firms of more than 1000 workers. If wages rise with firm size on average, the growth in large firms will improve retail wages. Second, because modern retail firms are bigger, they have more layers of management. More managers earning pay that exceeds entry level pay improves retail wages as a whole. Both these effects are confirmed in the wage data. We lay out the relevant evidence in the five subsections below.

The wage regressions we estimate are as follows:

$$(1)\ \ln Wage_{it} = \gamma Size_{it} + \eta Manager_{it} + \mathbf{X_{it}}\,\beta + \alpha_i + \varepsilon_{it}$$

where Size is a categorical measure of firm size (for CPS) or establishment size (for NLSY), Manager is a dummy variable for managerial occupation, **X** is a vector of control variables that includes education, experience, and dummy variables for married, for african american and for living in a metropolitan area. In half the regressions, we include person-fixed effects, α_i, to control for underlying ability that can produce omitted variable bias in estimating the incremental returns to firm size and Managerial occupation using cross-sectional variation.

A. The Effects of Firm Size

There is an abiding interest in whether the retail sector provides "good jobs" for those who are less educated. Therefore, a natural question to ask is, how do the less educated fare in retail? Do the less educated earn more at large firms or as managers, or is all the increase in earnings power from moving to chain stores conferred on better educated retail workers? Table 4 answers these questions by showing results from our basic regression estimated separately for the same three educational groups described in Table 3.

Large retail firms pay more than small firms in the retail sector at all educational levels; but, they pay considerably more for the college educated. For the high school educated, a firm with 1000+ workers pays 18.3 percent more than a small single store with less than 10 workers. For the college educated, the large firm pays 40.6 percent more. For those with some college, the pay is between these.

Pay also does not rise linearly with firm size. There is an immediate bump up in pay when moving from small to mid-size firms. The best-paid jobs are those in firms with 100-999 workers. We expect these are regional chain stores, and/or unionized stores.

Higher pay for large firms might arise if larger firms hire workers who are more skilled. We find strong evidence of this. Introducing worker fixed effects in columns 4 to 6 of Table 4 shows that the returns to firm size are much lower when controlling for worker's unobserved ability—firm size effects are about one-half to one-fourth as big, depending on the education group. Recall that in the CPS data, identification of firm size effects comes from only a one year change in wages as workers move between firms. The relatively small sample sizes for the more educated affects the statistical significance of the firm size coefficients. But in all instances, a comparison of the OLS results to the fixed effects results suggests that there is a sorting of better workers to better-paying firms.

B. The Effects of Establishment Size

Major chains are typically larger firms; they are also typically comprised of larger establishments. The big box stores have more employees per store than the typical mom-and-pop stores. Even Starbucks is likely to have close to 20 employees per store. Of course, the correlation between firm size and establishment size is not perfect – many big chains, like fast food chains, have fewer employees per store than would a standard grocery store or a traditional

department store. If large stores are becoming more common, as described in section II above, the question is, do big box stores pay higher wages?

Wage levels rise markedly with establishment size according to the NLSY data (Table 5). Across all three educational levels, working in a store with 500+ employees pays 30 to 40 percent more than working in a store with less than 10 employees. Moreover, the effect of store size rises steadily as we move from stores with less than 10 employees through to the larger size stores.[13]

A large portion of the wage gain as store size increases is a return to ability. When we include worker fixed effects in the regression, the gains to store size remain; but, they are about half as large, across all educational levels. The NLSY data has about 3.5 observations per person on average in retail, from which to estimate the store size effects while controlling for person fixed effects. Still, their higher wages suggest that controlling for ability, employees in larger retail establishments are more productive than those in smaller establishments on average.

C. Promotions

Managers in these data are a special sort of manager. They are likely to be comprised largely of those who are very low rank. The percent of workers who are managers is very high – at 23 to 24 percent in retail for the two data sets. The respondents self-identify as managers. In selecting the occupational codes to define managers, we purposely selected managerial occupations to include those who are first line supervisors in retail. It is therefore likely that the majority of the managers are low level, not high-level store managers. These are managerial positions that the typical worker may well obtain. See Appendix A for a list of the occupations included in the management definition.

[13] There are not enough college educated employees in the smaller firms to identify these coefficients.

Larger firms confer on workers the possibility of joining management ranks. We find that the return to moving to a management position is sizable. The effects of becoming a manager can be estimated in both the CPS data and the NLSY data, because these data sets use the same occupational codes to measure managerial status. The results show that management effects are comparable in these two data sets.

In the CPS data, non-managerial jobs pay $14.98 per hour and managerial jobs pay $22.91. In the NLSY data, the non-managerial jobs pay $16.36 per hour and managerial jobs pay $21.39 per hour.

In the regressions, we find that wages are about 19 to 27 percent higher for high school educated managers, all else constant (CPS and NLSY data in Tables 4 and 5). The gain is lower for the college educated. Note that these regressions control for education and that managers tend to be higher educated. When education is dropped from an overall regression (not shown), the returns to manager go up.

A portion of the wage increase that accompany a promotion to a managerial position is a return to ability. In fixed effects regressions with the CPS data, movement into management raises wages by only 7 percent, 5 percent, and 6 percent for each education group respectively (Table 4). In the NLSY fixed effects regressions, the movement into management increases wages by 8 percent, 8 percent, and 3 percent, respectively, for the three education groups (Table 5).

D. Other Factors

Combining the results thus far, we see that results using the NLSY data tend to corroborate those of the CPS data: The returns to education, to experience, and to managerial occupation are all about equal in the two data sets. The results also suggest that individuals with only a high school education or less are benefiting significantly from the spread of chain stores. For the average high-school educated worker, working for a mid-sized firm (100-999 workers) increases pay by

24 percent relative to a small firm (column 1, Table 4). Working for a large store increases wages by 36 percent (column 1, Table 5). If this less educated worker is promoted to a managerial job – perhaps as a shift manager – he or she earns 27 percent more (CPS data) or 19 percent more (NLSY data).

What was not highlighted above is that the gender pay gap is large in retail. Women earn substantially less than men. In Table 4, holding constant firm size and all other variables, pay is 20 to 23 percent lower for women in the CPS data. The gap is even greater in the NLSY data, in Table 5, though it declines with education.

Given the mean differences in pay for men and women, we look to see if the returns to firm size and establishment size differ. The gains to firm size and managerial status are about equal for men and women (Table 6). The gains to store size are greater for women than men (Table 7). These results imply that base pay is lower for women than men, but the rate at which pay grows with firm size or managerial promotion is remarkably similar across the two genders.[14] The gender pay gap arises because base pay is lower for women than men, but we do not know if it is because women and men are in different occupations. Women may be cashiers and men forklift operators.

While the popular press would suggest that all retail jobs are low skilled, the estimated returns to education suggest otherwise. Tables 6 and 7 show the rate of return to education, by gender. Without controlling for unobserved ability, the return to education is 8.0 percent and 7.4 percent per year of education for women and men in CPS data (columns 1 and 2 of Table 6) and 8.4 and 7.6 percent for women and men in the NLSY (columns 1 and 2 of Table 7).[15] Part of this return to education was shown above – the college educated have returns to firm size that are about

[14] When we look at all workers, part-time and full-time, the regressions are very similar to those for full-time in Tables 4 to 7. The returns to firm size and establishment size are slightly lower for all workers. These results are included in an appendix which is available upon request.

[15] There are not enough changes in education to use the fixed effects regressions to control for unobserved ability in estimating the return to education.

twice as big as those for the high school educated. Managerial pay is greater for the college educated because their base pay is higher: In the CPS, the college educated earn $29.93 per hour as managers and the high school educated earn $18.83 per hour.

Pay also rises with experience in the labor market. The OLS gains are greater for men than women because our measure of experience does not control for time out of the labor force. Over short time intervals, in the fixed effects regressions, the gains are higher for women.

E. Manufacturing

A comparison of the structure of pay in retail to that in manufacturing is warranted because manufacturing often serves as the example of "good jobs" in the economy. Therefore, it makes sense that we see whether the structure of pay in retail trade diverges from that in manufacturing. The difference in mean wages is pronounced in Tables 2 and 3.[16] Manufacturing wage regressions are presented in Tables 8 and 9.

There is a steep gradient in pay with firm size in manufacturing, so that those in the largest firms earn about 40 percent more than those in the smallest. Comparing manufacturing to retail, in manufacturing the returns to the largest firms is more pronounced, managers make considerably more, and the returns to education are higher.

The gains to establishment size are smaller in manufacturing plants than in retail stores. However, because base pay is smaller in retail, those working in large retail stores certainly do not catch up to those working in large manufacturing plants.

Managers are less common in manufacturing than in retail, with 19 percent of men working as managers in manufacturing but 26 percent in retail. But the gains to promotion are about the same in retail and manufacturing, relative to base pay. In both sectors, the ramp up in pay with

[16] We expect that compensation differences would be more pronounced if we could incorporate data on fringe benefits. Unfortunately, such data are unavailable.

promotion is much smaller when controlling for ability in fixed effects regressions (columns 3 and 4 of Tables 4 through 7).

The return to education is 9 to 10 percent per year of education for manufacturing, compared to a range around 7.5 percent for retail. In all likelihood, manufacturing workers or maintenance workers are highly skilled, often operating complicated computerized machines. For those with a college education, the engineering skills needed in manufacturing would account for greater returns to education.

As in retail, these pay gradients with firm size or establishment size are dramatically lower when controlling for individual ability (columns 3 and 4 of Tables 8 and 9). Those who are more able are more likely to work in large firms, large establishments, or as managers.

To summarize, retail jobs and manufacturing jobs share a similar structure of pay. In both, there are gains to firm size, to managerial promotion, to education, to experience, and to ability. Each of these gains is larger in manufacturing than in retail, accounting for the 50 percent pay gap between these sectors of the economy (using the CPS data, Table 2). While outside the scope of this paper, we would speculate that well-paid manufacturing jobs tend to be higher skilled, have more onerous working conditions, and be unionized.[17]

VII. Conclusion

Until the recent recession, retail was an increasing share of the economy, and retail chains were an increasing share of the retail industry. It is commonly assumed that these chains are populated only by employees earning minimum wages. The data suggest otherwise. Large chains pay about 20 percent more than small mom-and-pop firms. Large establishments pay about 40 percent more than small mom-and-pop establishments. Moreover, large firms and large

[17] It is less clear whether retail trade jobs also have onerous working conditions due to standing and work schedules that may be out of the control of the employee. At the same time, retail jobs may also be preferred for the flexibility of scheduling.

establishments give access to managerial ranks and hierarchy, and managers who are most likely to be first-line supervisors earn about 20 percent more than all other workers. A good part of these wage gains are returns to ability – large firms and establishments hire and promote the more able.

Others have concluded that the less skilled workers who populate the retail industry face an improved outlook for pay. Holzer, Lane, Rosenblum and Andersson (2011) use employee-employer matched data on individual workers for 1992 to 2003. They conclude that retail "now provides good jobs to many workers in the fourth and fifth quintiles of skills who obtain jobs in higher quintiles of firm quality."[18]

Women are 47 percent of the workers in retail. The entry level of pay is considerably lower for women than men, but this gap can be narrowed if women work in large stores, large firms, or become managers. In contrast, women are 29 percent of the workers in manufacturing. The growing policy emphasis on increasing jobs in the advanced manufacturing sector will help men, especially highly educated men; but, continued growth in retail jobs may help women contribute to household income.

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[18] In their work, worker skills are captured by individual fixed effects in the wage regressions and firm quality by the firm fixed effects.

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Figure 1

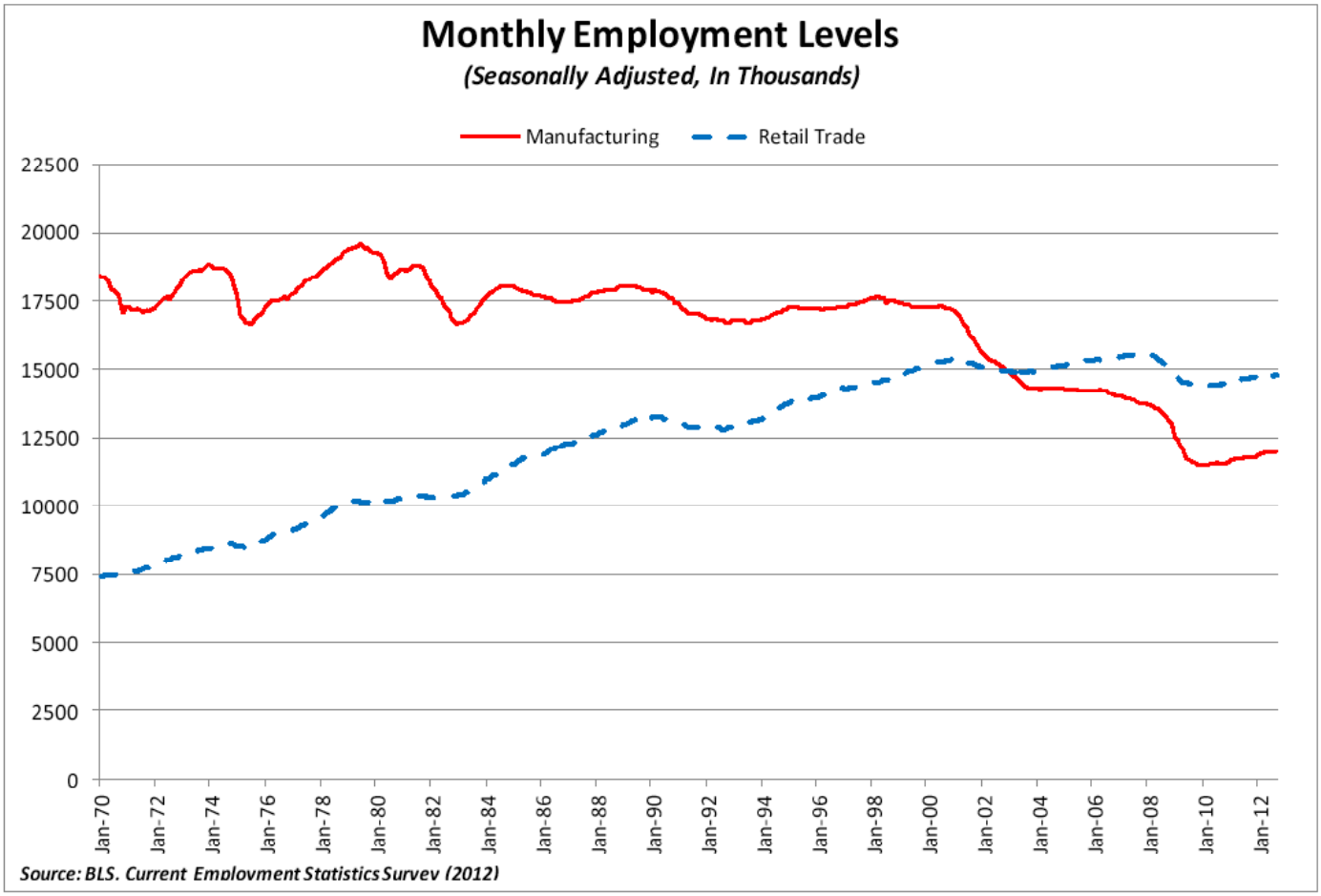
Monthly Employment Levels
(Seasonally Adjusted, In Thousands)
Manufacturing
Retail Trade
22500
20000
17500
15000
12500
10000
7500
5000
2500
0
Jan-70
Jan-72
Jan-74
Jan-76
Jan-78
Jan-80
Jan-82
Jan-84
Jan-86
Jan-88
Jan-90
Jan-92
Jan-94
Jan-96
Jan-98
Jan-00
Jan-02
Jan-04
Jan-06
Jan-08
Jan-10
Jan-12
Source: BLS. Current Employment Statistics Survey (2012)

Figure 2

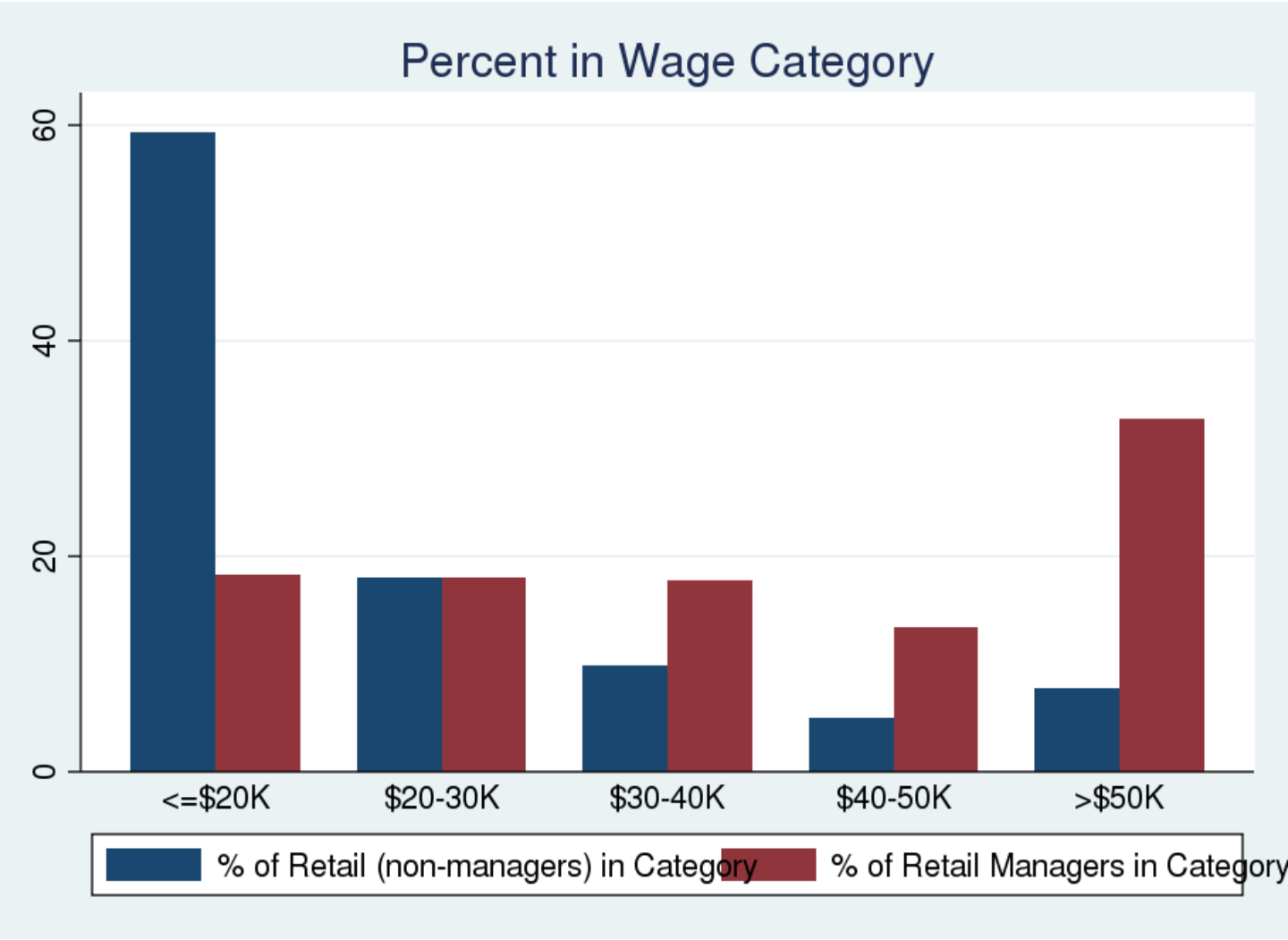
Percent in Wage Category
0
20
40
60
<=$20K
$20-30K
$30-40K
$40-50K
>$50K
% of Retail (non-managers) in Category
% of Retail Managers in Category

Table 1: Case Studies of Compensation by Store[1]

Wal-Mart

- Cashier (H): $8.54
- Stocker, Overnight (H): $9.53
- Sales Associate (H): $8.84
- Associate, Customer Service (H): $8.99
- Supervisor (H): $14.28
- Assistant Manager (S): $43,596
- Manager, Shift (S): $61,985
- Manager, Store (S): $90,845

Starbucks

- Barista (H): $8.78
- Lead Barista (H): $9.37
- Shift Supervisor (H): $10.92
- Assistant Manager, Store (S): $33,285
- Manager, Store (S): $43,652
- Manager, District (S): $73,988

Whole Foods

- Cashier (H): $10.36
- Team Member (H): $10.94
- Customer Service (H): $10.31
- Associate, Team Leader (H): $17.17
- Team Leader (H): $22.45
- Manager, Department (S): $54,177
- Store Manager (S): $71,536

Costco

- Sales Assistant (H): $11.52
- Cashier, Front End (H): $11.92
- Stocker (H): $12.75
- Supervisor (H): $21.14
- Assistant Manager, Department (S) $59,660
- Manager, Department (S): $67,167
- Manager, Front End (S): $67,900
- Manager (S): $68,167
- Manager, General (S): $109,000

[1] Data are from GlassDoor.com from December 6, 2012, with underlying sample pertaining largely to 2012.

TABLE 2: VARIABLE DEFINITIONS AND DESCRIPTIVE STATISTICS

Variable Name	Retail		Manufacturing		Variable Definition
	CPS Mean (S.D.)	NLSY Mean (S.D.)	CPS Mean (S.D.)	NLSY Mean (S.D.)	
Wage	16.82 (22.26)	17.59 (37.40)	25.16 (28.58)	21.37 (38.31)	Hourly Wage Rate in 2010 Dollars
Size 0-9	0.16 (0.36)		0.06 (0.24)		Firm Size: 0-9 Employees
Size 10-49	0.14 (0.35)		0.09 (0.28)		Firm Size: 10-49 Employees
Size 50-99	0.12 (0.32)		0.14		Firm Size: 50-99 Employees
Size 100-999	0.13 (0.34)		0.28 (0.35)		Firm Size: 100-999 Employees
Size 1,000+	0.45 (0.50)		0.43 (0.49)		Firm Size: 1,000 or more Employees
Estab 0-9		0.25 (0.43)		0.10 (0.30)	Establishment Size: 0-9 Employees
Estab 10-24		0.18 (0.38)		0.09 (0.28)	Establishment Size: 10-49 Employees
Estab 25-49		0.15 (0.35)		0.09 (0.29)	Establishment Size: 25-49 Employees
Estab 50-499		0.32 (0.47)		0.43 (0.50)	Establishment Size: 50-99 Employees
Estab 500+		0.11 (0.31)		0.29 (0.45)	Establishment Size: 1,000 or more Employees
Manager	0.23 (0.42)	0.24 (0.43)	0.17 (0.38)	0.13 (0.33)	Dummy variable for being a Manager
Education	12.79 (2.38)	13.07 (2.17)	13.08 (2.77)	12.92 (2.24)	Years of Education (Average Years for Bin)
High School or Less	0.51 (0.50)	0.58 (0.49)	0.50 (0.50)	0.63 (0.48)	Dummy variable for High School Degree or less education
Some College	0.32 ((0.47)	0.24 (0.42)	0.26 (0.44)	0.17 (0.37)	Dummy variable for some college but not a 4-year degree
College +	0.18 ((0.38)	0.19 (0.39)	0.25 (0.43)	0.20 (0.40)	Dummy variable for having a Bachelor's Degree or more education
Experience	18.76 (12.60)	14.45 (7.40)	23.28 (11.64)	15.16 (7.51)	Experience (Age-education-6)
Married	0.45 (0.50)	0.54 (0.50)	0.61 (0.49)	0.62 (0.49)	Dummy variable for being Married
African American	0.12 (0.33)	0.14 (0.34)	0.10 (0.30)	0.11 (0.32)	Dummy variable for being African American
Metro	0.71 (0.45)		0.64 (0.48)		Dummy variable for living in a Metropolitan Area
Urban		0.74 (0.44)		0.67 (0.47)	Dummy variable for living in an Urban Area
Hours Worked	42.63 (7.62)	44.30 (8.65)	43.10 (6.51)	43.81 (6.98)	Average Hours per Week
Female	0.46 (0.50)	0.43 (0.49)	0.29 (0.45)	0.31 (0.46)	Dummy variable for being female

Age	37.56	33.52	42.36	34.08	Age
	(12.45)	(7.12)	(11.40)	(7.32)	
N	105,025	21,878	78,851	19,729	Number of Observations

Summary Statistics computed using sampling weights.

Table 3: Number of Workers and Mean Income by Education and Firm Size

	High School or Less Non-Manager	High School or Less Manager	Some College Non-Manager	Some College Manager	College or More Non-manager	College or More Manager
Retail						
Below 10	$23,440	$32,660	$27,500	$36,180	$40,320	$50,020
n	7190	1699	3448	1411	1556	1272
10-49	$23,740	$36,540	$28,280	$42,240	$41,160	$58,500
n	7157	1130	3452	1008	1509	796
50-99	$26,860	$42,700	$31,340	$45,680	$45,640	$67,780
n	5621	1034	3160	897	1308	821
100-999	$28,720	$41,240	$33,840	$45,740	$47,980	$74,480
n	6080	1182	3672	1137	1684	936
1,000+	$25,200	$36,020	$30,300	$41,460	$52,900	$65,580
n	19139	4202	10706	3892	5055	2871
Manufacturing						
Below 10	$30,160	$44,680	$35,040	$53,400	$48,980	$79,740
n	2172	386	951	327	550	422
10-49	$29,880	$54,720	$38,400	$65,400	$53,320	$83,560
n	3601	438	1314	330	666	389
50-99	$30,980	$48,660	$39,280	$61,860	$55,320	$91,540
n	6032	734	2123	538	1109	661
100-999	$33,280	$46,500	$40,840	$60,200	$64,500	$95,440
n	11340	1148	4960	957	2729	1355
1,000+	$38,480	$53,740	$49,920	$67,520	$80,520	$106,000
n	12573	1101	7558	1214	7795	3378

This table was constructed by multiplying the mean hourly wage rate for each cell by 2000 (the approximate number of hours for a full year of full-time work).

Table 4: Retail Trade By Education (CPS); Dependent Variable: Log Wage

	OLS			Fixed Effects		
	High School or Less	Some College	College +	High School or Less	Some College	College +
Size 10-49	0.106***	0.147***	0.243***	0.060**	0.076*	0.122**
	(.010)	(0.014)	(0.022)	(0.026)	(0.042)	(0.051)
Size 50-99	0.198***	0.229***	0.321***	0.096***	0.080*	0.100*
	(0.010)	(0.014)	(0.023)	(0.028)	(0.042)	(0.060)
Size 100-999	0.236***	0.269***	0.418***	0.104***	0.082**	0.105*
	(0.010)	(0.014)	(0.021)	(0.030)	(0.041)	(0.058)
Size: 1,000+	0.183***	0.217***	0.406***	0.079***	0.092**	0.115**
	(0.008)	(0.012)	(0.019)	(0.027)	(0.040)	(0.053)
Manager	0.268***	0.202***	0.204***	0.073***	0.049*	0.058*
	(0.007)	(0.008)	(0.011)	(0.020)	(0.029)	(0.031)
Education	0.045***	0.058***	0.120***	0.004	0.029	-0.010
	(0.001)	(0.007)	(0.006)	(0.010)	(0.035)	(0.029)
Experience	0.028***	0.037***	0.034***	0.020**	0.015	0.033*
	(0.001)	(0.001)	(0.002)	(0.010)	(0.015)	(0.018)
Experience^2	-0.000***	-0.001***	-0.001***	-0.000**	-0.000	-0.001*
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Female	-0.225***	-0.223***	-0.207***			
	(0.005)	(0.007)	(0.011)			
Cons	1.419***	1.214***	0.248**	2.148***	2.013***	2.672***
	(0.019)	(0.100)	(0.101)	(0.187)	(0.519)	(0.532)
NT	54,434	32,783	17,808	16,134	9,246	5,634
N	46367	28160	14991	8,067	4,623	2,817
R^2	0.166	0.187	0.164	0.441	0.455	0.546

Additional dummy variables included in all regressions: Married, African American, Metro, and Year.

Table 5: Retail Trade By Education (NLSY); Dependent Variable: Log Wage

	OLS			Fixed Effects		
	High School or Less	Some College	College +	High School or Less	Some College	College +
Estab 10-24	.143***	.120***	.047	.072***	.056	.062
	(.015)	(.032)	(.057)	(.016)	(.028)	(.053)
Estab 25-49	.172***	.158***	.028	.095***	.085***	.058
	(.019)	(.032)	(.052)	(.017)	(.031)	(.056)
Estab 50-499	.286***	.270***	.149***	.160***	.129***	.109***
	(.019)	(.031)	(.050)	(.017)	(.033)	(.054)
Estab 500+	.361***	.469***	.296***	.181***	.181***	.139***
	(.23)	(.049)	(.054)	(.024)	(.041)	(.068)
Manager	.188***	.186***	.140***	.080***	.078***	.029
	(.018)	(.028)	(.031)	(.015)	(.020)	(.023)
Education	.63***	.047***	.046***	.030	-.035	.062
	(.006)	(.019)	(.017)	(.018)	(.032)	(.039)
Experience	.022***	.031***	.070***	.031***	.014	.045
	(.006)	(.009)	(.012)	(.043)	(.021)	(.033)
Experience^2	-.0004***	-.0008***	-.002***	-.0004***	-.0011***	-.002***
	(.0002)	(.0003)	(.0004)	(.0002)	(.0003)	(.0004)
Female	-.293***	-.238***	-.147***			
	(.015)	(.027)	(.036)			
Cons	1.33***	1.62***	1.98***	1.59***	3.75	1.91
	(.16)	(.35)	(.43)	(.50)	(.84)	(1.37)
NT	13,420	5,135	3,323	13,420	5,135	3,323
N	3,852	1,476	1,012	3,852	1,476	1,012
R^2	0.22	0.21	0.21	0.60	0.62	0.60

Additional dummy variables included in all regressions: Married, African American, Urban, and Year.

Tabel 6: Retail Trade By Gender (CPS); Dependent Variable: Log Wage

	OLS		Fixed Effects	
	Female	Male	Female	Male
Size 10-49	0.143***	0.139***	0.040	0.097***
	(0.011)	(0.010)	(0.028)	(0.027)
Size 50-99	0.215***	0.230***	0.080**	0.114***
	(0.012)	(0.011)	(0.033)	(0.027)
Size 100-999	0.269***	0.278***	0.091***	0.117***
	(0.011)	(0.010)	(0.032)	(0.029)
Size: 1,000+	0.245***	0.218***	0.065**	0.106***
	(0.009)	(0.009)	(0.028)	(0.027)
Manager	0.218***	0.239***	0.079***	0.060***
	(0.007)	(0.006)	(0.020)	(0.020)
Education	0.080***	0.074***	0.025***	0.019**
	(0.001)	(0.001)	(0.010)	(0.008)
Experience	0.025***	0.034***	0.020**	0.012
	(0.001)	(0.001)	(0.010)	(0.009)
Experience^2	-0.000***	-0.001***	-0.000*	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Cons	0.795***	1.008***	1.906***	2.228***
	(0.022)	(0.020)	(0.190)	(0.168)
NT	49,767	55,258	15,520	18,230
N	42,007	46,143	7,760	9,115
R^2	0.166	0.242	0.460	0.526

Additional dummy variables included in all regressions: Married, African American, Metro, and Year.

Table 7: Retail Trade By Gender (NLSY); Dependent Variable: Log Wage

	OLS		Fixed Effects	
	Female	Male	Female	Male
Estab 10-24	.187***	.062***	.089***	.145***
	(.023)	(.021)	(.020)	(.018)
Estab 25-49	.173***	.121***	.104***	.070***
	(.024)	(.022)	(.024)	(.018)
Estab 50-499	.321***	.204***	.184***	.112***
	(.022)	(.021)	(.024)	(.019)
Estab 500+	.466***	.303***	.193***	.159***
	(.033)	(.027)	(.031)	(.026)
Manager	.224***	.136***	.107***	.042***
	(.020)	(.018)	(.017)	(.014)
Education	.084***	.076***	.026	.023
	(.077)	(.005)	(.020)	(.017)
Experience	.019***	.049***	.042***	.026***
	(.006)	(.006)	(.016)	(.014)
Experience^2	-.0005***	-.0011	-.0005***	-.001***
	(.0001)	(.0002)	(.0002)	(.0002)
Cons	1.02***	1.11	1.29	2.71
	(.19)	(.17)	(.65)	(.52)
NT	9,778	12,100	9,778	12,100
N	2,920	3,175	2,920	3,175
R^2	0.25	0.25	0.59	0.65

Additional dummy variables included in all regressions: Married, African American, Urban, and Year.

Table 8 Manufacturing By Gender (CPS); Dependent Variable: Log Wage

	OLS		Fixed Effects	
	Female	Male	Female	Male
Size 10-49	0.103***	0.133*	-0.012	0.040
	(0.02)	(0.015)	(0.055)	(0.035)
Size 50-99	0.117***	0.167***	-0.036	0.045
	(0.022)	(0.014)	(0.059)	(0.038)
Size 100-999	0.184***	0.234***	0.017	0.074**
	(0.020)	(0.013)	(0.055)	(0.035)
Size: 1,000+	0.400***	0.393***	0.059	0.084**
	(0.020)	(0.013)	(0.056)	(0.035)
Manager	0.333***	0.264***	0.069	0.052***
	(0.011)	(0.006)	(0.028)	(0.016)
Education	0.091***	0.095***	0.043***	0.018*
	(0.001)	(0.001)	(0.014)	(0.010)
Experience	0.019***	0.025***	0.011	0.017*
	(0.001)	(0.001)	(0.013)	(0.010)
Experience^2	-0.000***	-0.000***	0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Cons	0.936***	0.977***	1.807***	2.479***
	(0.031)	(0.020)	(0.324)	(0.233)
NT	23,261	55,590	9,190	23,024
N	18,666	44,078	4,595	11,512
R^2	0.328	0.355	0.643	0.601

Additional dummy variables included in all regressions: Married, African American, Metro, and Year.

Table 9: Manufacturing By Gender (NLSY); Dependent Variable: Log Wage

	OLS		Fixed Effects	
	Female	Male	Female	Male
Estab 10-24	.037	.020	-.004	.065***
	(.045)	(.027)	(.047)	(.023)
Estab 25-49	.061	.031	.020	.081***
	(.044)	(.027)	(.041)	(.023)
Estab 50-499	.095***	.085***	.074***	.111***
	(.040)	(.024)	(.040)	(.022)
Estab 500+	.295***	.267***	.162***	.191***
	(.042)	(.025)	(.041)	(.023)
Manager	.290***	.220***	.041	.045***
	(.029)	(.023)	(.030)	(.013)
Education	.089***	.102***	.055***	.028***
	(.006)	(.006)	(.025)	(.015)
Experience	.017***	.040***	.050***	.040***
	(.006)	(.006	(.015)	(.010)
Experience^2	-.0005***	-.0006***	-.0009***	-.0012***
	(.0002)	(.0002)	(.0002)	(.0001)
Cons	1.44	.78	1.30	2.48
	(.019)	(.15)	(.65)	(.44)
NT	6,627	13,102	6,627	13,102
N	1,625	2,671	1,625	2,671
R^2	0.338	0.35	0.66	0.69

Additional dummy variables included in all regressions: Married, African American, Urban, and Year.

Appendix A: Industry and Occupation Codes

Industrial Classifications—2003 Code Order

Applicable from 2003 and Beyond

Retail Trade

4670 – Automobile dealers
4680 – Other motor vehicle dealers
4690 – Auto parts, accessories, and tire stores
4770 – Furniture and home furnishings stores
4780 – Household appliance stores
4790 – Radio, TV, and computer stores
4870 – Building material and supplies dealers
4880 – Hardware stores
4890 – Lawn and garden equipment and supplies stores
4970 – Grocery stores
4980 – Specialty food stores
4990 – Beer, wine, and liquor stores
5070 – Pharmacies and drug stores
5080 – Health and personal care, except drug, stores
5090 – Gasoline stations
5170 – Clothing and accessories, except shoe, stores
5180 – Shoe stores
5190 – Jewelry, luggage, and leather goods stores
5270 – Sporting goods, camera, and hobby and toy stores
5280 – Sewing, needlework and piece goods stores
5290 – Music stores
5370 – Book stores and news dealers
5380 – Department stores and Discount stores
5390 – Miscellaneous general merchandise stores
5470 – Retail florists
5480 – Office supplies and stationary stores
5490 – Used merchandise stores
5570 – Gift, novelty, and souvenir shops
5580 – Miscellaneous stores
5590 – Electronic shopping
5591 – Electronic auctions
5592 – Mail order houses
5670 – Vending machine operators
5680 – Fuel dealers
5690 – Other direct selling establishments
5790 – Not specified trade

Arts, Entertainment and Recreation

8580 – Bowling centers
8590 – Other amusement, gambling, and recreation

Accommodations and Food Services

8660 – Traveler accommodation
8670 – Rec. vehi. parks/camps, and room /boarding houses
8680 – Restaurants and other food services
8690 – Drinking places, alcohol beverages

Other Services

8890 – Footwear and leather goods repair
8970 – Barber shops
8980 – Beauty salons
8990 – Nail salons and other personal care services
9070 – Dry cleaning and laundry services

Manufacturing

1070 – Animal food, grain and oilseed milling
1080 – Sugar and confectionery products
1090 – Fruit and veg. preserving and specialty foods
1170 – Dairy products
1180 – Animal slaughtering and processing
1190 – Retail bakeries
1270 – Bakeries, except retail
1280 – Seafood and other miscellaneous food
1290 – Not specified food industries
1370 – Beverage
1390 – Tobacco
1470 – Fiber, yarn, and thread mills
1480 – Fabric mills, except knitting
1490 – Textile and fabric finishing and coating mills
1570 – Carpets and rugs
1590 – Textile product mills except carpets and rugs
1670 – Knitting mills
1680 – Cut and sew apparel
1690 – Apparel accessories and other apparel
1770 – Footwear
1790 – Leather tanning and products, except footwear
1870 – Pulp, paper, and paperboard mills
1880 – Paperboard containers and boxes
1890 – Miscellaneous paper and pulp products
1990 – Printing and related support activities
2070 – Petroleum refining
2090 – Miscellaneous petroleum and coal products
2170 – Resin, synthetic rubber and fibers, and filaments
2180 – Agricultural chemicals
2190 – Pharmaceuticals and medicines
2270 – Paint, coating, and adhesives
2280 – Soap, cleaning compound, and cosmetics
2290 – Industrial and miscellaneous chemicals
2370 – Plastics products
2380 – Tires
2390 – Rubber products, except tires
2470 – Pottery, ceramics, and related products
2480 – Structural clay products
2490 – Glass and glass products
2570 – Cement, concrete, lime, and gypsum products
2590 – Miscellaneous nonmetallic mineral products
2670 – Iron and steel mills and steel products
2680 – Aluminum production and processing
2690 – Nonferrous metal production and processing
2770 – Foundries
2780 – Metal forgings and stampings
2790 – Cutlery and hand tools
2870 – Struct. metals, and tank and shipping containers
2880 – Mach. shops; turned prod.; screws, nuts, bolts
2890 – Coating, engraving, heat treating, etc
2970 – Ordnance
2980 – Miscellaneous fabricated metal products
2990 – Not specified metal industries
3070 – Agricultural implements
3080 – Construction mining and oil field machinery
3090 – Commercial and service industry machinery
3170 – Metalworking machinery
3180 – Engines, turbines, and power transmission equipment
3190 – Machinery
3290 – Not specified machinery
3360 – Computer and peripheral equipment

3370 – Communications, audio, and video equipment
3380 – Navigational, measuring, electomedical, and control instruments
3390 – Electronic components and products
3470 – Household appliances
3490 – Electrical machinery, equipment, and supplies,
3570 – Motor vehicles and motor vehicle equipment
3580 – Aircraft and parts
3590 – Aerospace products and parts
3670 – Railroad rolling stock
3680 – Ship and boat building
3690 – Other transportation equipment
3770 – Sawmills and wood preservation
3780 – Veneer, plywood, and engineered wood products
3790 – Prefabricated wood buildings and mobile homes
3870 – Miscellaneous wood products
3890 – Furniture and fixtures
3960 – Medical equipment and supplies
3970 – Toys, amusement, and sporting goods
3980 – Miscellaneous manufacturing
3990 – Not specified industries

Industrial Classifications—2002 Code Order

Applicable to 2002 Only

Retail Trade

4670 – Automobile dealers
4680 – Other motor vehicle dealers
4690 – Auto parts, accessories, and tire stores
4770 – Furniture and home furnishings stores
4780 – Household appliance stores
4790 – Radio, TV, and computer stores
4870 – Building material and supplies dealers
4880 – Hardware stores
4890 – Lawn and garden equipment and supplies stores
4970 – Grocery stores
4980 – Specialty food stores
4990 – Beer, wine, and liquor stores
5070 – Pharmacies and drug stores
5080 – Health and personal care, except drug, stores
5090 – Gasoline stations
5170 – Clothing and accessories, except shoe, stores
5180 – Shoe stores
5190 – Jewelry, luggage, and leather goods stores
5270 – Sporting goods, camera, and hobby and toy stores
5280 – Sewing, needlework and piece goods stores
5290 – Music stores
5370 – Book stores and news dealers
5380 – Department stores
5390 – Miscellaneous general merchandise stores
5470 – Retail florists
5480 – Office supplies and stationary stores
5490 – Used merchandise stores
5570 – Gift, novelty, and souvenir shops
5580 – Miscellaneous retail stores
5590 – Electronic shopping and mail-order houses
5670 – Vending machine operators
5680 – Fuel dealers
5690 – Other direct selling establishments
5790 – Not specified retail trade

Arts, Entertainment and Recreation

8580 – Bowling centers
8590 – Other amusement, gambling, and recreation industries

Accommodations and Food Services

8660 – Traveler accommodations
8670 – Recreational vehicle parks/ camps, and room./ boarding houses
8680 – Restaurants and other food services
8690 – Drinking places, alcoholic beverages

Other Services

8890 – Footwear and leather goods repair
8970 – Barber shops
8980 – Beauty salons
8990 – Nail salons and other personal care services
9070 – Dry cleaning and laundry services

Manufacturing

1070 – Animal food, grain, and oilseed milling
1080 – Sugar and confectionery products
1090 – Fruit and veg. preserving and specialty food manuf.
1170 – Dairy product manufacturing
1180 – Animal slaughtering and processing
1190 – Retail bakeries
1270 – Bakeries except retail
1280 – Seafood and other miscellaneous foods
1290 – Not specified food industries
1370 – Beverage manufacturing
1390 – Tobacco manufacturing
1470 – Fiber, yarn, and thread mills
1480 – Fabric mills, except knitting
1490 – Textile and fabric finishing and coating mills
1570 – Carpets and rugs manufacturing
1590 – Textile product mills except carpets and rugs
1670 – Knitting mills
1680 – Cut and sew apparel manufacturing
1690 – Apparel accessories and other apparel manufacturing
1770 – Footwear manufacturing
1790 – Leather tanning and products, except footwear manuf.
1870 – Pulp, paper, and paperboard mills
1880 – Paperboard containers and boxes
1890 – Miscellaneous paper and pulp products
1990 – Printing and related support activities
2070 – Petroleum refining
2090 – Miscellaneous petroleum and coal products
2170 – Resin, synthetic rubber and fibers, and filaments manuf.
2180 – Agricultural chemical manufacturing
2190 – Pharmaceutical and medicine manufacturing
2270 – Paint, coating, and adhesives manufacturing
2280 – Soap, cleaning compound, and cosmetic manufacturing
2290 – Industrial and miscellaneous chemicals
2370 – Plastics product manufacturing
2380 – Tire manufacturing
2390 – Rubber products, except tires, manufacturing
2470 – Pottery, ceramics, and related products manufacturing
2480 – Structural clay product manufacturing
2490 – Glass and glass product manufacturing
2570 – Cement, concrete, lime, and gypsum product manufacturing
2590 – Miscellaneous nonmetallic mineral product manufacturing
2670 – Iron and steel mills and steel product manufacturing
2680 – Aluminum production and processing
2690 – Nonferrous metal production and processing
2770 – Foundries
2780 – Metal forgings and stampings
2790 – Cutlery and hand tool manufacturing
2870 – Structural metals and tank and shipping container manuf.
2880 – Machine shops; turned product; screw nut and bolt manuf.
2890 – Coating, engraving, heat treating and allied activities
2970 – Ordnance
2980 – Miscellaneous fabricated metal products manufacturing
2990 – Not specified metal industries
3070 – Agricultural implement manufacturing
3080 – Construction mining and oil field machinery manufacturing
3090 – Commercial and service industry machinery manufacturing
3170 – Metalworking machinery manufacturing
3180 – Engines, turbines, and power transmission equip. manuf.
3190 – Machinery manufacturing
3290 – Not specified machinery manufacturing
3360 – Computer and peripheral equipment manufacturing
3370 – Communications, audio, and video equipment manuf.
3380 – Navigational, measuring, electromedical, and control instruments manuf.
3390 – Electronic component and product manufacturing
3470 – Household appliance manufacturing

3490 – Electrical machinery, equipment, and supplies manufacturing.
3570 – Motor vehicles and motor vehicle equipment manufacturing
3580 – Aircraft and parts manufacturing
3590 – Aerospace product and parts manufacturing
3670 – Railroad rolling stock manufacturing
3680 – Ship and boat building
3690 – Other transportation equipment manufacturing
3770 – Sawmills and wood preservation
3780 – Veneer, plywood, and engineered wood product manufacturing
3790 – Prefabricated wood buildings and mobile homes manufacturing
3870 – Miscellaneous wood product manufacturing
3890 – Furniture and fixtures
396 Medical equipment and supplies manufacturing
3970 – Toys, amusement, and sporting goods manufacturing
3980 – Miscellaneous manufacturing
3990 – Not specified manufacturing industries

Industrial Classifications—1970 Code Order

Applicable from 1970 to 1999

Retail Trade

607 Lumber and building material retailing
608 Hardware and farm equipment stores
609 Department and mail order establishments
617 Limited price variety stores
618 Vending machine operators
619 Direct selling establishments
627 Miscellaneous general merchandise stores
628 Grocery stores
629 Dairy products stores
637 Retail bakeries
638 Food stores
639 Motor vehicle dealers
647 Tire, battery, and accessory dealers
648 Gasoline service stations
649 Miscellaneous vehicle dealers
657 Apparel and accessories stores
658 Shoe stores
667 Furniture and home furnishings stores
668 Household appliances, T.V., and radio stores
669 Eating and drinking places
677 Drug stores
678 Liquor stores
679 Farm and garden supply stores
687 Jewelry stores
688 Fuel and ice dealers
689 Retail florists
697 Miscellaneous retail stores
698 Not specified retail trade

Ent. and Recreation Services

807 Theaters and motion pictures
808 Bowling alleys, billiard and pool parlors
809 Miscellaneous entertainment and recreation services

Personal Services

777 Hotels and motels
778 Lodging places, except hotels and motels
779 Laundering, cleaning, and other garment services
787 Beauty shops
788 Barber shops
789 Shoe repair shops
797 Dressmaking shop

Manufacturing

107 Logging
108 Sawmills, planing mills, and mill work
109 Miscellaneous wood products
118 Furniture and fixtures
119 Glass and glass products
127 Cement, concrete, gypsum, and plaster products
128 Structural clay products
137 Pottery and related products
138 Miscellaneous nonmetallic mineral and stone products
139 Blast furnaces, steel works, rolling and finishing mills
147 Other primary iron and steel industries
148 Primary aluminum industries
149 Other primary nonferrous industries
157 Cutlery, hand tools, and other hardware
158 Fabricated structural metal products
159 Screw machine products
167 Metal stamping
168 Miscellaneous fabricated metal products
169 Not specified metal industries
177 Engines and turbines
178 Farm machinery and equipment
179 Construction and material handling machines
187 Metalworking machinery
188 Office and accounting machines
189 Electronic computing equipment
197 Machinery, except electrical
198 Not specified machinery
199 Household appliances
207 Radio, T.V., and communication equipment
208 Electrical machinery, equipment, and supplies
209 Not specified electrical machinery, equipment, and supplies
219 Motor vehicles and motor vehicle equipment
227 Aircraft and parts
228 Ship and boat building and repairing
229 Railroad locomotives and equipment
237 Mobile dwellings and campers
238 Cycles and miscellaneous transportation equipment
239 Scientific and controlling instruments
247 Optical and health services supplies
248 Photographic equipment and supplies
249 Watches, clocks, and clockwork-operated devices
257 Not specified professional equipment
258 Ordinance
259 Miscellaneous manufacturing industries
268 Meat products
269 Dairy products
278 Canning and preserving fruits, vegetables, and sea foods
279 Grain-mill products
287 Bakery products
288 Confectionery and related products
289 Beverage industries
297 Miscellaneous food preparation and kindred products
298 Not specified food industries
299 Tobacco manufactures
307 Knitting mills
308 Dyeing and finishing textiles, except wool and knit goods
309 Floor coverings, except hard surface
317 Yarn, thread, and fabric mills
318 Miscellaneous textile mill products
319 Apparel and accessories
327 Miscellaneous fabricated textile products
328 Pulp, paper, and paperboard mills
329 Miscellaneous paper and pulp products
337 Paperboard containers and boxes
338 Newspaper publishing and printing
339 Printing, publishing, and allied industries, except newspapers
347 Industrial chemicals
348 Plastics, synthetics and resins, except fibers
349 Synthetic fibers
357 Drugs and medicines
358 Soaps and cosmetics
359 Paints, varnishes, and related product
367 Agricultural chemicals

368 Miscellaneous chemicals
369 Not specified chemicals and allied products
377 Petroleum refining
378 Miscellaneous petroleum and coal products
379 Rubber products
387 Miscellaneous plastic products
388 Tanned, curried, and finished leather
389 Footwear, except rubber
397 Leather products, except footwear
398 Not specified manufacturing industries

Industrial Classifications—2000 Code Order

Applicable from 2000 to 2001

Retail Trade

607 Lumber and building material retailing
608 Hardware and farm equipment stores
609 Department and mail order establishments
617 Limited price variety stores
618 Vending machine operators
619 Direct selling establishments
627 Miscellaneous general merchandise stores
628 Grocery stores
629 Dairy products stores
637 Retail bakeries
638 Food stores
639 Motor vehicle dealers
647 Tire, battery, and accessory dealers
648 Gasoline service stations
649 Miscellaneous vehicle dealers
657 Apparel and accessories stores
658 Shoe stores
667 Furniture and home furnishings stores
668 Household appliances, T.V., and radio stores
669 Eating and drinking places
677 Drug stores
678 Liquor stores
679 Farm and garden supply stores
687 Jewelry stores
688 Fuel and ice dealers
689 Retail florists
697 Miscellaneous retail stores
698 Not specified retail trade

Arts, Ent. and Recreation Services

807 Theaters and motion pictures
808 Bowling alleys, billiard and pool parlors
809 Miscellaneous entertainment and recreation services

Other Services

889 Footwear and leather goods repair

Personal Services

777 Hotels and motels
778 Lodging places, except hotels and motels
779 Laundering, cleaning, and other garment services
787 Beauty shops
788 Barber shops
789 Shoe repair shops
797 Dressmaking shop

Manufacturing

107 Logging
108 Sawmills, planing mills, and mill work
109 Miscellaneous wood products
118 Furniture and fixtures
119 Glass and glass products
127 Cement, concrete, gypsum, and plaster products
128 Structural clay products
137 Pottery and related products
138 Miscellaneous nonmetallic mineral and stone products
139 Blast furnaces, steel works, rolling and finishing mills
147 Other primary iron and steel industries
148 Primary aluminum industries
149 Other primary nonferrous industries
157 Cutlery, hand tools, and other hardware
158 Fabricated structural metal products
159 Screw machine products
167 Metal stamping
168 Miscellaneous fabricated metal products
169 Not specified metal industries
177 Engines and turbines
178 Farm machinery and equipment
179 Construction and material handling machines
187 Metalworking machinery
188 Office and accounting machines
189 Electronic computing equipment
197 Machinery, except electrical
198 Not specified machinery
199 Household appliances
207 Radio, T.V., and communication equipment
208 Electrical machinery, equipment, and supplies
209 Not specified electrical machinery, equipment, and supplies
219 Motor vehicles and motor vehicle equipment
227 Aircraft and parts
228 Ship and boat building and repairing
229 Railroad locomotives and equipment
237 Mobile dwellings and campers
238 Cycles and miscellaneous transportation equipment
239 Scientific and controlling instruments
247 Optical and health services supplies
248 Photographic equipment and supplies
249 Watches, clocks, and clockwork-operated devices
257 Not specified professional equipment
258 Ordinance
259 Miscellaneous manufacturing industries
268 Meat products
269 Dairy products
278 Canning and preserving fruits, vegetables, and sea foods
279 Grain-mill products
287 Bakery products
288 Confectionery and related products
289 Beverage industries
297 Miscellaneous food preparation and kindred products
298 Not specified food industries
299 Tobacco manufactures
307 Knitting mills
308 Dyeing and finishing textiles, except wool and knit goods
309 Floor coverings, except hard surface
317 Yarn, thread, and fabric mills
318 Miscellaneous textile mill products
319 Apparel and accessories
327 Miscellaneous fabricated textile products
328 Pulp, paper, and paperboard mills
329 Miscellaneous paper and pulp products
337 Paperboard containers and boxes
338 Newspaper publishing and printing
339 Printing, publishing, and allied industries, except newspapers
347 Industrial chemicals
348 Plastics, synthetics and resins, except fibers
349 Synthetic fibers
357 Drugs and medicines
358 Soaps and cosmetics
359 Paints, varnishes, and related product
367 Agricultural chemicals

368 Miscellaneous chemicals
369 Not specified chemicals and allied products
377 Petroleum refining
378 Miscellaneous petroleum and coal products
379 Rubber products
387 Miscellaneous plastic products
388 Tanned, curried, and finished leather
389 Footwear, except rubber
397 Leather products, except footwear
398 Not specified manufacturing industries

Managerial Occupation Classifications

Management Occupations—1970 Code Order

Applicable from 1970 to 1999

056 – Personnel and Labor Relations Workers
192 – Public Relations Men and Publicity Writers
201 – Assessors, Controllers, and Treasurers; Local Public Administration
202 – Bank Officers and Financial Managers
203 – Buyers and Shippers, Farm Products
205 – Buyers, Wholesale and Retail Trade
210 – Credit Men
211 – Funeral Directors
212 – Health Administrators
213 – Construction Inspectors, Public Administration
215 – Inspectors, Except Construction, Public Administration
216 – Managers and Superintendents Building
220 – Office Managers, n.e.c.
221 – Officers, Pilots, and Pursers; Ship
222 – Officials and Administrators; Public Administration, n.e.c.
223 – Officials of Lodges, Societies, and Unions
224 – Postmasters and Mail Superintendents
225 – Purchasing Agents and Buyers, n.e.c.
226 – Railroad Conductors
230 – Restaurant, Cafeteria, and Bar Managers
231 – Sales Managers and Department Heads, retail trade
233 – Sales Managers, Except Retail Trade
235 – School Administrators, College
240 – School Administrators, Elementary and Secondary
245 – Managers and Administrators, n.e.c.
801 – Farmers (Owners and Tenants)
802 – Farm Managers

Management Occupations—2000 Code Order

Applicable from 2000 to 2001

001 – Chief Executives
002 – General and Operations Managers
003 – Legislators
004 – Advertising and Promotions Managers
005 – Marketing and Sales Managers
006 – Public Relations Managers
010 – Administrative Services Managers
011 – Computer and Information Systems Managers
012 – Financial Managers
013 – Human Resources Managers
014 – Industrial Production Managers
015 – Purchasing Managers
016 – Transportation, Storage, and Distribution Managers
020 – Farm, Ranch, and Other Agricultural Managers
021 – Farmers and Ranchers
022 – Construction Managers
023 – Education Administrators
030 – Engineering Managers
031 – Food Service Managers
032 – Funeral Directors
033 – Gaming Managers
034 – Lodging Managers
035 – Medical and Health Services Managers
036 – Natural Sciences Managers
040 – Postmasters and Mail Superintendents
041 – Property, Real Estate, and Comm. Assoc. Managers
042 – Social and Community Service Managers
043 – Managers, All Other
470 – First-line sup./managers of retail sales workers
471 – First-line sup./managers of non-retail sales workers
700 – First-line sup./managers of mechanics, installers, and rep.
770 – First-line sup./managers of prod. and operating workers
900 – Supervisors, transportation, and material moving workers

Management Occupations—2002 Code Order

Applicable to 2002 Only

0010 – Chief Executives
0020 – General and Operations Mangers
0030 – Legislators
0040 – Advertising and Promotions Managers
0050 – Marketing and Sales Managers
0060 – Public Relations Managers
0100 – Administrative Services Managers
0110 – Computer and Information Systems Managers
0120 – Financial Managers
0130 – Human Resources Managers
0140 – Industrial Production Managers
0150 – Purchasing Managers
0160 – Transportation, Storage, and Distribution Managers
0200 – Farm, Ranch, and Other Agricultural Managers
0210 – Farmers and Ranchers
0220 – Construction Managers
0230 – Education Administrators
0300 – Engineering Managers
0310 – Food Service Managers
0320 – Funeral Directors
0330 – Gaming Managers
0340 – Lodging Managers
0350 – Medical and Health Services Managers
0360 – Natural Sciences Managers
0400 – Postmasters and Mail Superintendents
0410 – Property, Real Estate, and Comm. Assoc. Managers
0420 – Social and Community Service Managers
0430 – Managers, All Other
4700 – First-line sup./managers of retail sales workers
4710 – First-line sup./managers of non-retail sales workers
7000 – First-line sup./managers of mechanics, installers, and rep.
7700 – First-line sup./managers of prod. and operating workers
9000 – Supervisors, transportation, and material moving workers

Management Occupations—2003 Code Order

Applicable to 2003 and Beyond

0010 – Chief executives
0020 – General and operations managers
0040 – Advertising and promotions managers
0050 – Marketing and sales managers
0060 – Public relations managers
0100 – Administrative services managers
0110 – Computer and information systems managers
0120 – Financial managers
0130 – Human resources managers
0140 – Industrial production managers
0150 – Purchasing managers
0160 – Transportation, storage, and distribution managers
0200 – Farm, ranch, and other agricultural managers
0210 – Farmers and ranchers
0220 – Construction managers
0230 – Education administrators
0300 – Engineering managers
0310 – Food service managers
0320 – Funeral directors
0330 – Gaming managers
0340 – Lodging managers
0350 – Medical and health services managers
0360 – Natural sciences managers
0410 – Property, real estate, and community assoc. managers
0420 – Social and community service managers
0430 – Managers, all other
4700 – First-line sup./managers of retail sales workers
4710 – First-line sup./managers of non-retail sales workers
7000 – First-line sup./managers of mechanics, installers, and rep.
7700 – First-line sup./managers of prod. and operating workers
9000 – Supervisors, transportation, and material moving workers

Service Occupation Classifications

Service Occupations—1970 Code Order
Applicable from 1970 to 1999

901 – Chambermaids and Maids, Except Private Household
902 – Cleaners and Charwomen
903 – Janitors and Sextons
910 – Bartenders
911 – Busboys
912 – Cooks, Except Private Household
913 – Dishwashers
914 – Food Counter and Fountain Workers
915 – Waiters
916 – Food Service Workers, n.e.c., Except Private Household
921 – Dental Assistants
922 – Health Aides, Exc. Nursing
923 – Health Trainees
924 – Lay Midwives
925 – Nursing Aides, Orderlies, and Attendants
926 – Practical Nurses
931 – Airline Stewardesses
932 – Attendants, Recreation and Amusement
933 – Attendants, Personal Service, n.e.c.
934 – Baggage Porters and Bellhops
935 – Barbers
940 – Boarding and Lodging Housekeepers
941 – Bootblacks
942 – Child Care Workers, Exc. Private Household
943 – Elevator Operators
944 – Hairdressers and Cosmetologists
945 – Personal Service Apprentices
950 – Housekeepers, Exc. Private Household
952 – School Monitors
953 – Ushers, Recreation and Amusement
954 – Welfare Service Aides
980 – Child Care Workers, Private Household
981 – Cooks, Private Household
982 – Housekeepers, Private Household
983 – Laundresses, Private Household
984 – Maids and Servants, Private Household
026 – Home Management Advisors
101 – Recreation Workers
390 – Ticket, Station, and Express Agents
310 – Cashiers
505 – Motion Picture Projectionists
701 – Boatmen and Canal Men
703 – Bus Drivers
704 – Conductors and Motormen, Urban Rail Transit
711 – Parking Attendants
714 – Taxicab Drivers and Chauffeurs
740 – Animal Caretakers, Exc. Farm

Service Occupations—2000 Code Order
Applicable from 2000 to 2001

400 – Chefs and Head Cooks
401 – First-Line Sup./Managers of Food Prep. and Serving Workers
402 – Cooks
403 – Food Preparation Workers
404 – Bartenders
405 – Combined Food Preparation and Serving Workers, Including Fast Food
406 – Counter Attendants, Cafeteria, Food Concession, and Coffee Shop
411 – Waiters and Waitresses
412 – Food Servers, Non-restaurant
413 – Dining Room and Cafeteria Attendants and Bartender Helpers
414 – Dishwashers
415 – Hosts and Hostesses, Restaurant, Lounge, and Coffee Shop
416 – Food Preparation and Serving Related Workers, All Other
420 – First-Line Sup./Managers of Housekeeping and Janitorial Workers
421 – First-Line Sup./Managers of Landscaping, Lawn, and Grounds Workers
422 – Janitors and Building Cleaners
423 – Maids and Housekeeping Cleaners
424 – Pest Control Workers
425 – Grounds Maintenance Workers
430 – First-Line Sup./Managers of Gaming Workers
432 – First-Line Sup./Managers of Personal Service Workers
434 – Animal Trainers
435 – Nonfarm Animal Caretakers
440 – Gaming Services Workers
441 – Motion Picture Projectionists
442 – Ushers, Lobby Attendants, and Ticket Takers
443 – Miscellaneous Entertainment Attendants and Related Workers
446 – Funeral Service Workers
450 – Barbers
451 – Hairdressers, Hairstylists, and Cosmetologists
452 – Miscellaneous Personal Appearance Workers
453 – Baggage Porters, Bellhops, and Concierges
454 – Tour and Travel Guides
455 – Transportation Attendants
460 – Child Care Workers
461 – Personal and Home Care Aides
462 – Recreation and Fitness Workers
464 – Residential Advisors
465 – Personal Care and Service Workers, All Other

Service Occupation Classifications (Cont'd)

Service Occupations—2002 Code Order
Applicable to 2002 Only

4000 – Chefs and Head Cooks
4010 – First-Line Sup./Managers of Food Prep. and Serving Workers
4020 – Cooks
4030 – Food Preparation Workers
4040 – Bartenders
4050 – Combined Food Preparation and Serving Workers, Including Fast Food
4060 – Counter Attendants, Cafeteria, Food Concession, and Coffee Shop
4110 – Waiters and Waitresses
4120 – Food Servers, Non-restaurant
4130 – Dining Room and Cafeteria Attendants and Bartender Helpers
4140 – Dishwashers
4150 – Hosts and Hostesses, Restaurant, Lounge, and Coffee Shop
4160 – Food Preparation and Serving Related Workers, All Other
4200 – First-Line Sup./Managers of Housekeeping and Janitorial Workers
4210 – First-Line Sup./Managers of Landscaping, Lawn, and Grounds Workers
4220 – Janitors and Building Cleaners
4230 – Maids and Housekeeping Cleaners
4240 – Pest Control Workers
4250 – Grounds Maintenance Workers
4300 – First-Line Sup./Managers of Gaming Workers
4320 – First-Line Sup./Managers of Personal Service Workers
4340 – Animal Trainers
4350 – Nonfarm Animal Caretakers
4400 – Gaming Services Workers
4410 – Motion Picture Projectionists
4420 – Ushers, Lobby Attendants, and Ticket Takers
4430 – Miscellaneous Entertainment Attendants and Related Workers
4460 – Funeral Service Workers
4500 – Barbers
4510 – Hairdressers, Hairstylists, and Cosmetologists
4520 – Miscellaneous Personal Appearance Workers
4530 – Baggage Porters, Bellhops, and Concierges
4540 – Tour and Travel Guides
4550 – Transportation Attendants
4600 – Child Care Workers
4610 – Personal and Home Care Aides
4620 – Recreation and Fitness Workers
4640 – Residential Advisors
4650 – Personal Care and Service Workers, All Other

Service Occupations—2003 Code Order
Applicable to 2003 and Beyond

4000 – Chefs and Head Cooks
4010 – First-Line Sup./Managers of Food Prep. and Serving Workers
4020 – Cooks
4030 – Food Preparation Workers
4040 – Bartenders
4050 – Combined Food Preparation and Serving Workers, Including Fast Food
4060 – Counter Attendants, Cafeteria, Food Concession, and Coffee Shop
4110 – Waiters and Waitresses
4120 – Food Servers, Non-restaurant
4130 – Dining Room and Cafeteria Attendants and Bartender Helper
4140 – Dishwashers
4150 – Hosts and Hostesses, Restaurant, Lounge, and Coffee Shop
4160 – Food Preparation and Serving Related Workers, All Other
4200 – First-Line Sup./Managers of Housekeeping and Janitorial Workers
4210 – First-Line Sup./Managers of Landscaping, Lawn, and Grounds Workers
4220 – Janitors and Building Cleaners
4230 – Maids and Housekeeping Cleaners
4240 – Pest Control Workers
4250 – Grounds Maintenance Workers
4300 – First-Line Sup./Managers of Gaming Workers
4320 – First-Line Sup./Managers of Personal Service Workers
4340 – Animal Trainers
4350 – Nonfarm Animal Caretakers
4400 – Gaming Services Workers
4410 – Motion Picture Projectionists
4420 – Ushers, Lobby Attendants, and Ticket Takers
4430 – Miscellaneous Entertainment Attendants and Related Workers
4460 – Funeral Service Workers
4500 – Barbers
4510 – Hairdressers, Hairstylists, and Cosmetologists
4520 – Miscellaneous Personal Appearance Workers
4530 – Baggage Porters, Bellhops, and Concierges
4540 – Tour and Travel Guides
4550 – Transportation Attendants
4600 – Child Care Workers
4610 – Personal and Home Care Aides
4620 – Recreation and Fitness Workers
4640 – Residential Advisors
4650 – Personal Care and Service Workers, All Other