
**USING CURRENT POPULATION SURVEY DATA TO EXAMINE
SCHOOL ADMINISTRATORS' CAREERS**

The Current Population Survey (CPS) is a monthly household survey conducted by the Bureau of the Census for the Bureau of Labor Statistics (BLS). Approximately 60,000 households are interviewed each month. One adult in each household is asked to provide information for all adult members of the household; the data file generated contains an individual record for each adult person in each interviewed household. Sample weights are provided so that nationally representative tabulations can be made.

Households that enter the CPS are interviewed for four consecutive months, ignored for the subsequent eight months, then interviewed again for four additional consecutive months, and then dropped from the sample. With the eight-month break between interview spells, each household is interviewed over the same four-month period in two consecutive years. As a result, individuals can be matched across the two years they are included in the sample. However, the survey follows dwelling units, not specific people, so if people move out of a household during its time in the CPS interview sample, the new occupants are interviewed in subsequent months. This raises issues that must be considered when attempting to match individuals across years.

Different sets of questions are asked in different interview months. In the fourth and eighth month interviews, called the Outgoing Rotation Group (ORG) interviews, detailed employment-related questions are asked in addition to those about standard demographics. In these months, the data include information on weekly earnings and usual hours worked. Each year the BLS generates the Merged ORG file, which contains all ORG interviews in a given year. Because of this construction, an individual is observed only once in the Merged ORG file for a given year.

We obtained the data for our analysis from the National Bureau of Economic Research, which has compiled the Merged ORG files for 1979 through 2000. The variable definitions and response categories in the CPS vary across the years for which we had data, so we coded the data to make the variables we used consistent across all years. In doing so, we were constrained by the variable definitions with the least amount of detail. For example, the pre-1994 CPS questions on educational attainment asked for the highest grade attended and whether that grade had been completed. The responses for highest grade attended were then topcoded at 18 years or

more, making it impossible to distinguish between a master's degree (18 years of schooling) and a doctorate (20 or more years). Beginning in 1994, the CPS asked about the highest degree awarded. Thus, to have a consistent time series, we collapsed the later, more detailed data into the broader categories we are able to identify in the pre-1994 data.

ANALYSIS OF TRENDS IN AVERAGE EARNINGS

We used the Merged ORG files to analyze trends in compensation for school administrators and for several other categories of professional occupations. Lawyers and judges, medical professionals, managers, and teachers are the other occupational categories we considered in our analysis.¹ We defined school administration rather broadly for this analysis: an individual is said to be in school administration if he or she is in a managerial occupation and reports elementary and secondary education as his/her industry.² We chose this broad definition because the occupation measures in the CPS appear to be rather noisy. Although there is a specific occupational category called "Administrators, education and related fields," we felt that it was not clear exactly which jobs would fit into this category. In analyzing the data, we found a lot of movement between managerial occupations within the elementary and secondary education industry. Although the broad definition brings in many people who are not principals and superintendents, we feel it is more important to have a clear understanding of who is truly included in the category.

Our sample was limited to full-time workers (people working 30 or more hours per week)³ and excluded people who moved into or out of school administration from administrative support or service occupations. We made the latter restriction because we expected that such cases reflect a misreporting of occupation in one period. In addition, we restricted the sample for our analysis of trends in earnings to people we were able to match across years. Thus, we used a consistent sample across all analyses of CPS data reported here. Finally, we used data from 1983 through 2000 because CPS occupational categories changed in 1983 and there is no clear mapping between the two measures.

We used the consumer price index (CPI) for all urban consumers to convert the earnings measures to constant 1998 dollars. The conversion to real dollars allowed us to make comparisons over time that reflect changes in the purchasing power of an

¹As defined by the 1980 Census of Population three-digit occupational classification, the occupational categories and associated codes are as follows: education administration ($3 \leq \text{occ} \leq 37$ and industry = 842), lawyers and judges ($\text{occ} = 178$ or 179), medical professionals ($84 \leq \text{occ} \leq 89$), managers ($3 \leq \text{occ} \leq 37$ and ind = 842), and teachers ($155 \leq \text{occ} \leq 159$).

²Examples of managerial occupations in the education industry are financial managers, personnel and labor relation managers, purchasing managers, and accountants and auditors.

³We limited the sample to full-time workers to purge any differences in compensation across occupations that are attributable to differences in the share of part-time workers.

occupation's compensation. We used the edited earnings per week variable, a continuous variable that is topcoded.⁴

Although the CPS is large and nationally representative, sample sizes can become relatively small when the analysis focuses on a specific occupation. Each year, the Merged ORG file contains between 250,000 and 300,000 observations, but only about 500 people report their occupation as education administration. When the yearly sample size for populations of interest is relatively small, descriptive statistics can be somewhat volatile, as the means are more sensitive to outliers. To address this issue, we constructed a three-year moving average for each of the outcome variables of interest for each occupation group.⁵ The moving average smooths the observed trends by dampening the effects of extreme outliers on the year-to-year changes in the outcome variable.

Level of compensation is the primary determinant of how much labor is supplied to an occupation. Changes in compensation over time for a particular profession thus help to explain variations in the number of people willing and qualified to work in that area. We used CPS data to analyze trends in the compensation of school administrators between 1980 and 1999. We also compared the wages of school administrators with those of other professional occupations. These comparisons served two important purposes: (1) they allowed us to disentangle changes in compensation specific to educational administrators from broader trends seen throughout the labor market; (2) they allowed us to see whether the number of people entering or leaving positions in school administration was affected by any differences in compensation between school administrators and other, similar professionals.

It is important to note that the set of similar, or substitute, occupations that are relevant for comparison is determined by the definition of the career field boundary within the career flow model. For example, if the career field is defined very broadly to include all administrative positions in elementary and secondary education, then occupations such as lawyers, medical professionals, and managers are outside the career field and can be used for comparison. However, if the career field is defined more narrowly and the focus is on public education, then positions in private schools are outside the career field and can be considered as relevant occupations for comparison. In our analysis, we considered the career flow model from both of these perspectives. We defined the career field broadly and compared all school administrators to lawyers, medical professionals, and managers, and we then turned to the narrower definition and compared public school administrators to their counterparts in private schools. It is especially important to note that teachers—perhaps the

⁴Topcoding changed twice during the period we looked at. From 1983 to 1988, weekly earnings were topcoded at \$999 per week (in nominal terms). From 1989 to 1997, they were topcoded at \$1,923 per week; from 1998 on, they were topcoded at \$2,884 per week.

⁵The three-year moving average for a particular year is calculated by taking the average of the mean value of the outcome variable over the three-year period surrounding the year of interest. For example, to calculate the moving average of weekly earnings for 1996, we took the average of mean weekly earnings for the years 1995, 1996, and 1997. Since three years of data are needed to calculate the moving average for a particular year, we were unable to calculate values for 1983 and 2000, the first and last years of the sample period.

most relevant career alternative for school administrators—are defined as outside the administrative career path. As a result, the results of our compensation comparisons between teachers and school administrators are given separately at the end of this section.

Comparison of School Administrators and Other Professional Occupations

To avoid interpretation problems related to differing contract lengths (school administrators typically have 11-month contracts, whereas other professionals tend to have 12-month appointments), we used real weekly earnings as a measure of compensation rather than annual income. Figure D.1 displays the average real weekly earnings for each profession between 1984 and 1999. The data show that while the level of compensation for school administrators grew by 11 percent over the two decades, the earnings gaps between school administrators and lawyers and between school administrators and medical professionals widened. In contrast, the earnings gap between school administrators and managers—the occupation most similar to school administration—remained relatively constant. In addition, the results show that the earnings of school administrators were subject to less cyclical variation than were the earnings of medical professionals and lawyers.

Even though school administrators typically are not paid by the hour, it is instructive to decompose the weekly earnings into the number of hours worked and the hourly wage. The decomposition is useful because the total weekly earnings may mask changes in hours worked and wages earned that may be of interest. Figure D.2 presents data indicating that school administrators earned on average 10 percent more

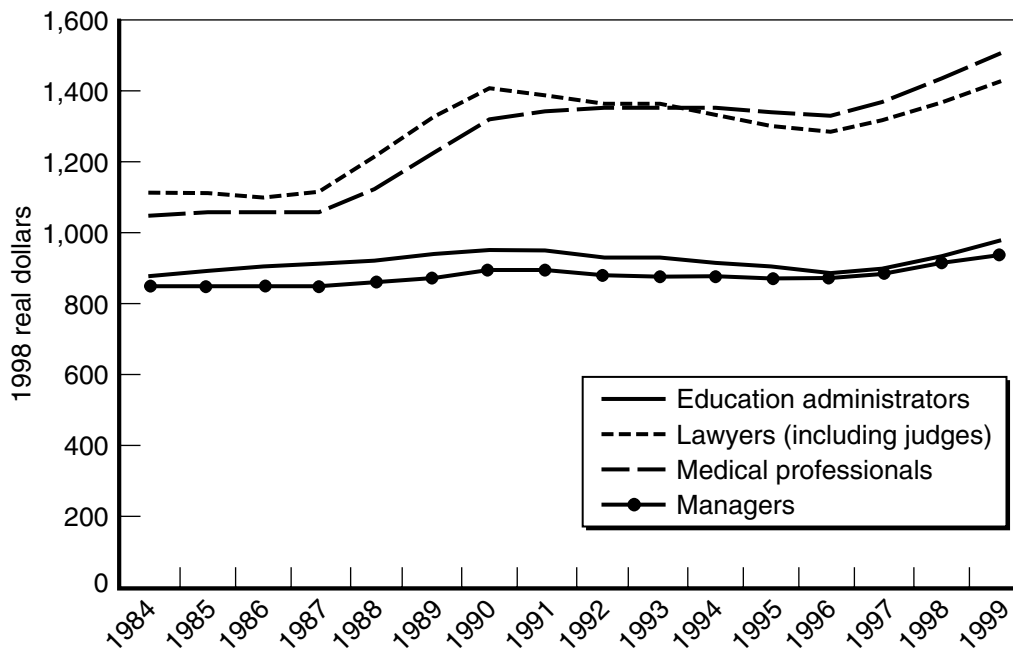


Figure D.1—Average Real Weekly Earnings Across Professions, 1984–1999

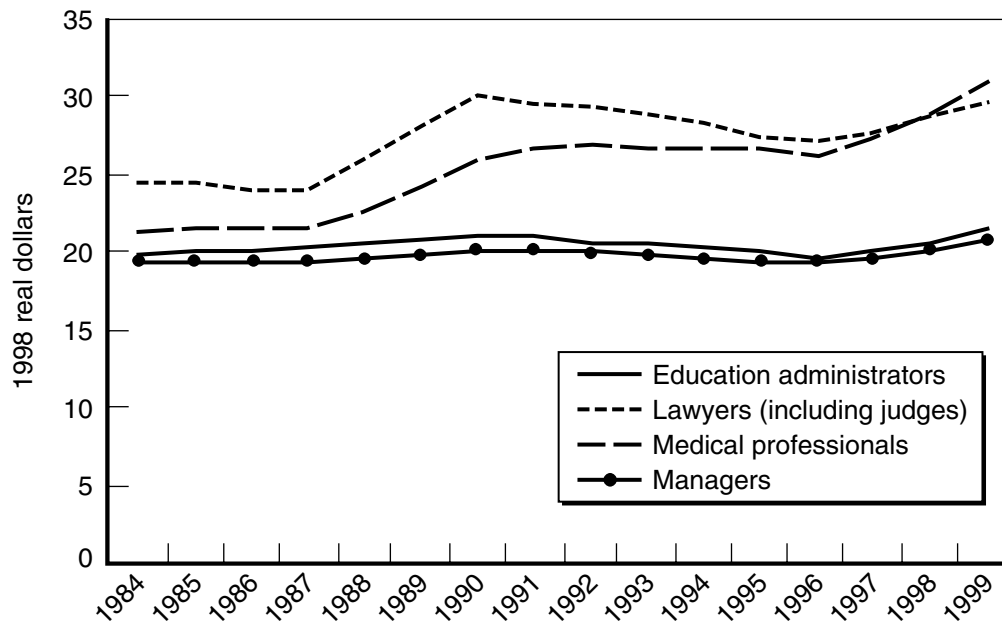


Figure D.2—Average Real Hourly Earnings Across Professions, 1984–1999

per hour in 1999 than they did in 1984. This growth in the hourly rate is slightly less than the observed growth in total weekly earnings, suggesting that the hours worked per week must have remained relatively constant during this time. Figure D.3's results show that this is the case: school administrators worked an additional hour per week in 1999 compared with 1984 (44.5 versus 44.6).

It is interesting to note that the gap between school administrators and lawyers is somewhat smaller for hourly wage rates (Figure D.2) than for weekly earnings (Figure D.1). The strong growth in earnings for lawyers during the late 1980s and early 1990s appears to have been driven in large part by an increase in the number of hours worked rather than an increase in the wage rate. Moreover, the hourly rate gap between school administrators and medical professionals was quite small until 1989, when the hourly rate for medical professionals began to grow relatively quickly. In this light, the changes in relative compensation between school administrators and other professional occupations are not as striking as the initial comparison of total weekly earnings suggested they would be.

Based on this examination, the compensation data do not suggest that the labor market for administrators is in a state of crisis. As evidence, the real value of compensation for school administrators has grown since 1980. Furthermore, the results from the comparisons across occupations indicate that although earnings have deteriorated for school administrators relative to some of the other professional occupations, the average weekly earnings of school administrators relative to managers have remained constant. Of the alternative professional occupations considered, the managerial ones are perhaps the most relevant to the choices potential school administrators make. The lower compensation of school administrators relative to

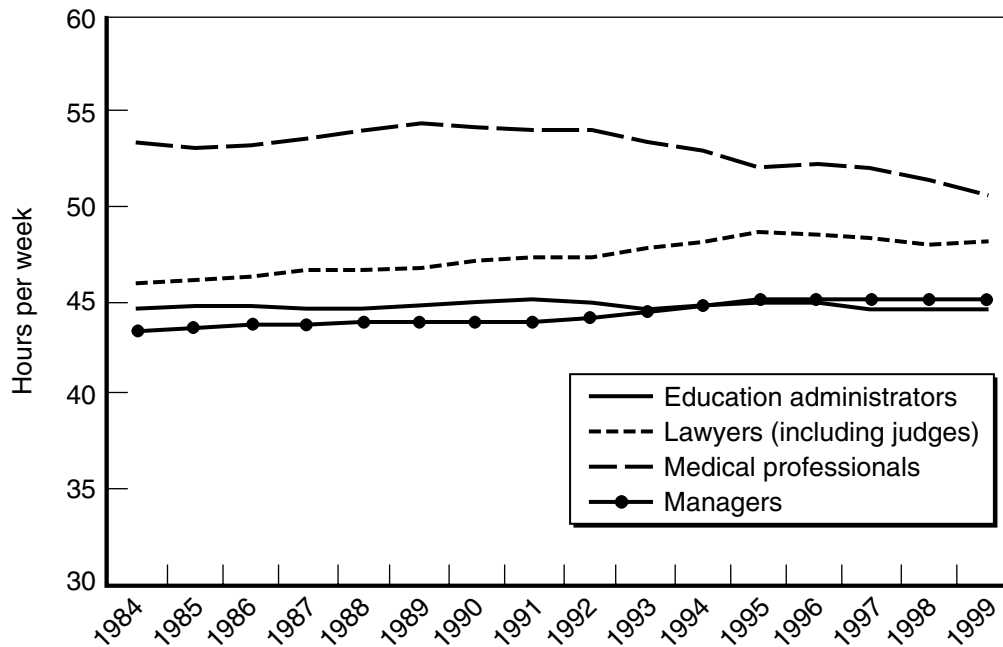


Figure D.3—Average Weekly Hours Worked Across Professions, 1984–1999

medical professionals and lawyers likely affects a person's choice of which occupation to enter originally, but the different schooling requirements among these professions make it unlikely that the compensation difference will spur many school administrators to leave school administration for careers in medicine or law. In contrast, the skills and training required for school administration and other managerial occupations are quite similar, making it relatively easy for someone to move between these two occupations. Thus, in this case, relative compensation is an important consideration.

Comparison of Public and Private School Administrators

A somewhat different picture emerged when we defined the career field more narrowly. Although public school administrators consistently earned more than their counterparts in private schools did, over the past two decades, the differential fell significantly. Figure D.4 shows that in 1984, public school administrators earned on average approximately 40 percent more per week than private school administrators did. By 1999, this earning gap had fallen to 12 percent. Average real hourly earnings saw a similar pattern, as shown in Figure D.5. If working conditions in the two sectors are assumed to have remained relatively constant, these findings suggest that private school administration has become more attractive relative to public school administration. Consequently, we might expect to see people moving out of public and into private school administrative positions.

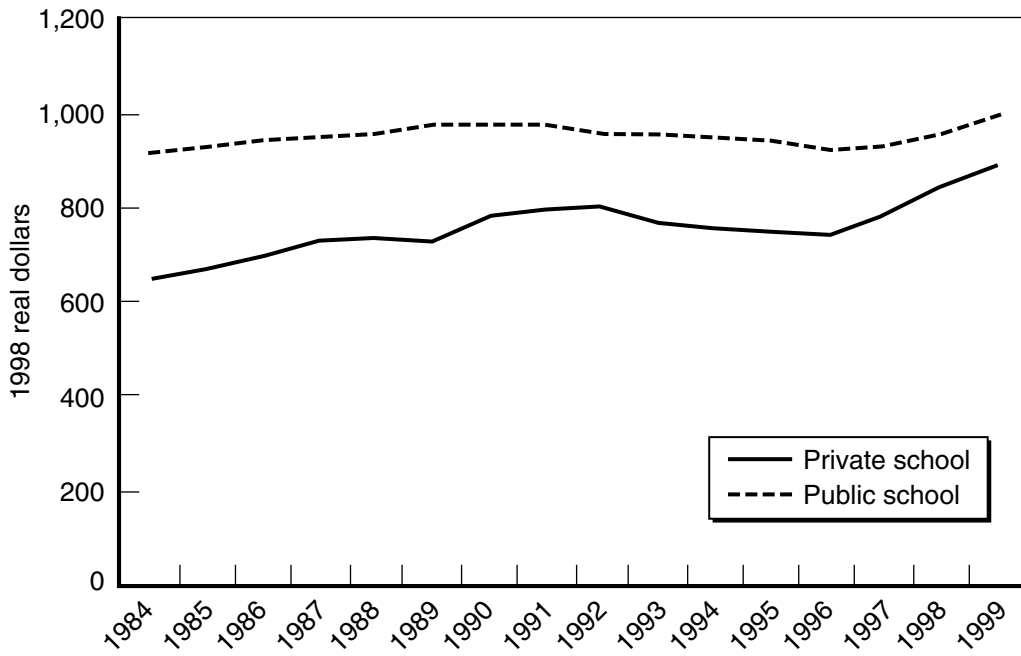


Figure D.4—Average Real Weekly Earnings of Public and Private School Administrators, 1984–1999

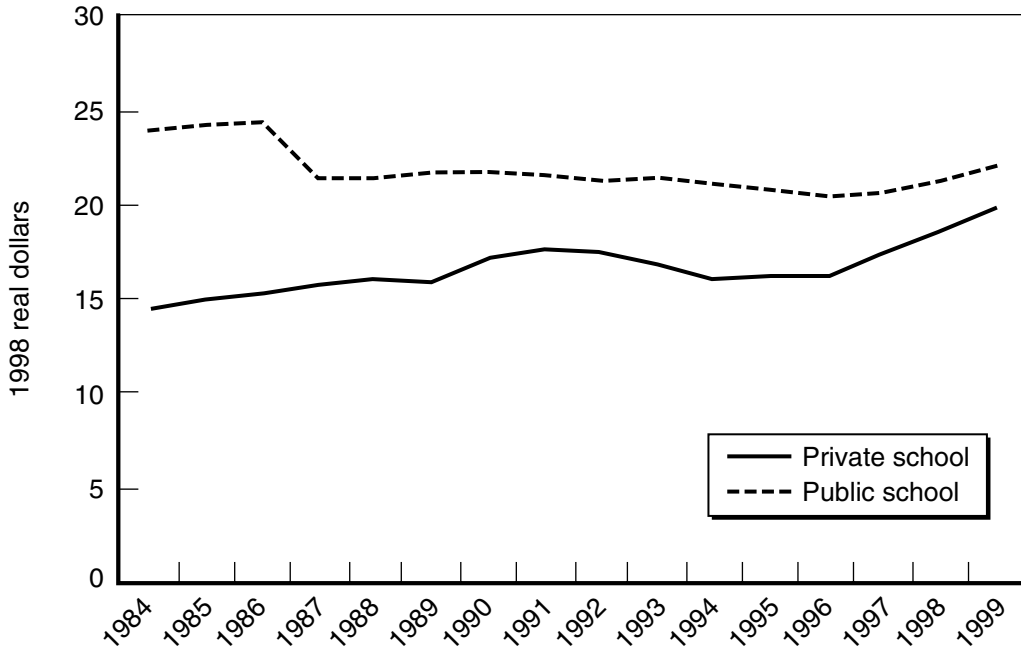


Figure D.5—Average Real Hourly Earnings of Public and Private School Administrators, 1984–1999

Taken together, the results from these analyses raise some interesting issues. Within elementary and secondary school administration, compensation changes may have led school administrators to move between the public and private sectors. However, the compensation for public school administrators remained higher than that for similar positions in the private sector. More broadly, compensation for school administrators did not deteriorate, and their work hours did not increase dramatically over time relative to the work hours of other professionals. It thus appears that other factors affecting labor supply would have to have been changing in order for a reduction in the number of people willing and qualified to fill school administrative positions to occur. One likely candidate is a change in the relative working conditions of the occupations.

Comparison of School Administrators and Teachers

The changes in relative compensation between school administrators and teachers over time can help to explain the movement between these two occupations. Although school administrators earned more than teachers from 1984 to 1999, the size of the earnings gap varied, as shown in Figure D.6. In 1984, the real weekly earnings of school administrators were 31 percent higher than those of teachers. This gap then narrowed until 1996, when it hit 15 percent. After 1996, the trend turned, and the earnings of school administrators grew relative to those of teachers. By 1999, school administrators were earning 24 percent more than teachers.

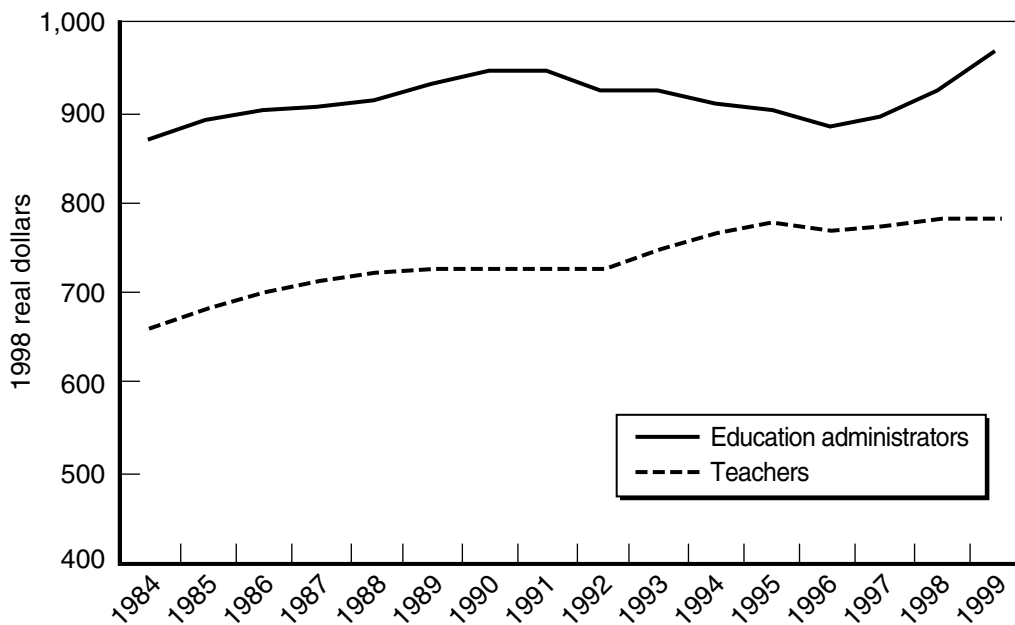


Figure D.6—Average Real Weekly Earnings of School Administrators and Teachers, 1984–1999

This change in weekly earnings between school administrators and teachers appears to have been driven primarily by changes in the hourly wage rate, which, as shown in Figure D.7, followed the same pattern seen for weekly earnings. The gap in hourly wages fell between 1984 and 1997 from 23 to 7 percent. By 1999, however, it had risen: the wage of school administrators was 16 percent greater than the wage of teachers. On average, school administrators reported working more hours per week than teachers did. The difference in hours worked for the two groups fluctuated within a narrow range over time, moving between 2.5 and 1.8 hours per week.

The narrowing of the compensation gap between 1984 and 1996 suggests that school administrative positions may have been becoming less attractive relative to teaching positions. If this were true, we might expect to see fewer teachers willing to move into school administration during this period. After 1996, however, when compensation for school administrators was growing relative to compensation for teachers, we might expect to see more teachers willing to move into administrative roles. This is where it is important to keep in mind that compensation is only one determinant of labor supply. If the working conditions for the two jobs were also changing over time, the effects of the compensation changes on the labor supply might not be observed. Anecdotally, we have heard that the job of school administrator has become more difficult over time. If it has become more difficult relative to the difficulty of a teacher's job, then the increases in the labor supply associated with the compensation increases of the late 1990s could have been canceled out by decreases in the labor supply because of worsening working conditions.

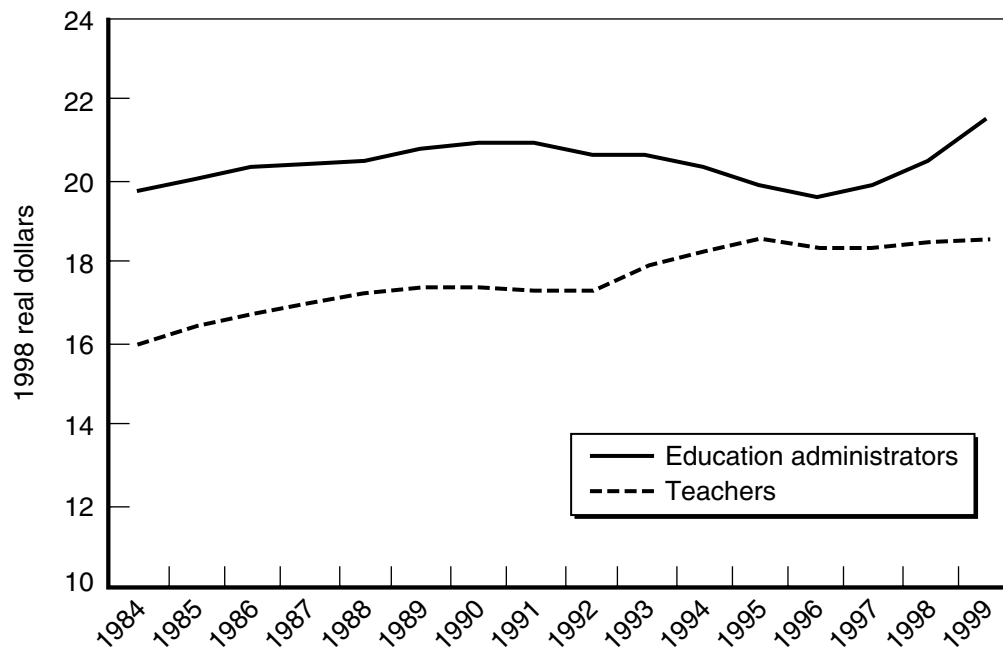


Figure D.7—Average Real Hourly Earnings of School Administrators and Teachers, 1984–1999

ANALYSIS OF ENTRY INTO AND EXIT FROM SCHOOL ADMINISTRATION

An analysis of entry into and exit from school administration requires that individuals in the CPS be matched across years. As noted above, the CPS follows dwelling units, not individuals, so matching is only possible among individuals who remain in the same dwelling unit across years. This aspect of the matched sample is important to keep in mind, since people who move, potentially for a new job, are not included in the sample. As a result, our estimates of entry and exit may serve as a lower bound for the true rates of entry and exit. The match rate for the sample is approximately 80 percent.

Of those people who were school administrators in the first year we observed them, anyone who in the second year has either a non-managerial job or a managerial job outside the elementary and secondary education industry is said to have left his or her school administration occupation. Similarly, anyone who was not in school administration in the first year and then is observed in school administration in the second year is defined as a new entrant to school administration.

Entries

The rate of entry into school administration is calculated as the percentage of people in school administration in the second year who were not in school administration in the first year. As Figure D.8 shows, for the sample period (1983–1999), the entry rate varied significantly from year to year, ranging from 19 to 29 percent. The entry rate becomes somewhat more stable (ranging from 22 to 26 percent), however, when the years are grouped into four time periods.⁶ This result is consistent with the earlier

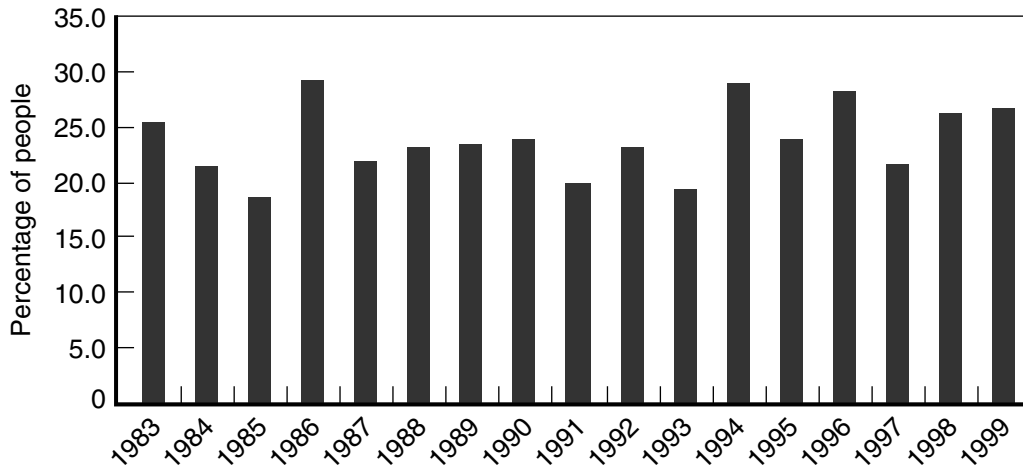


Figure D.8—Rates of Entry into School Administration, 1983–1999

⁶The groupings are: 1983–1984, 1985–1989, 1990–1994, and 1995–1999.

finding that the real value of compensation for school administrators has not changed substantially over time. If we had seen large increases in the compensation for this occupation, then, to the extent that positions in school administration were available, we would have expected to see increased entry into the field.

To characterize where new entrants to school administration are coming from, one must look at their previous occupations. Entrants came primarily from management occupations outside education and from teaching occupations.⁷ The largest share of entrants, nearly 50 percent, had been teachers in the previous year, and people entering from managerial occupations in other professions/industries made up about 20 percent. Only about 7 percent moved into the labor force to take positions in school administration. This category appears to comprise people coming out of retirement and people coming directly from an academic program, because the group's age distribution is very wide.⁸

Typically, one expects to see increases in earnings for people switching jobs, and we did see increases, albeit relatively small ones, in real weekly earnings for people entering the field. On average, we found a \$20 increase in real weekly earnings among individuals moving into administration from another job. The move into school administration was also associated with an increase in wage rate (\$0.25 per hour) and in the reported number of usual hours worked per week (0.9 hours). No differences in the changes in earnings, wages, or hours were found when we compared entrants from teaching positions with entrants from other occupations.

If we focus solely on the school administrative field, then movements from private to public school administration must also be considered as new entries. We found that the percentage of people moving from private to public school administration was approximately equal to the percentage moving in the other direction. Slightly under 3 percent of the people in public school administration in the second year had been in private school administration the previous year.

Exits

As Figure D.9 shows, estimates of the percentage of people leaving school administration fluctuated between 15 and 33 percent during the sample period. When looking at the year-to-year changes in the figure, no consistent trend emerges; but when several years are grouped together, as was done for entries into the field, the exit rates produced are relatively constant, ranging from 22 to 25 percent over time.⁹ And, as was the case for entries, this result is consistent with the finding that compensation for school administrators remained relatively steady over the period.

⁷Teaching occupations are defined as including pre-kindergarten, kindergarten, elementary, and secondary education teachers and school-based counselors.

⁸The mean age across this group is 54 and the standard deviation is 16. Moreover, the interquartile range is 25. These descriptive statistics indicate that the age distribution across this group is relatively wide.

⁹As for the entries, the years are grouped as follows: 1983–1984, 1985–1989, 1990–1994, and 1995–1999.

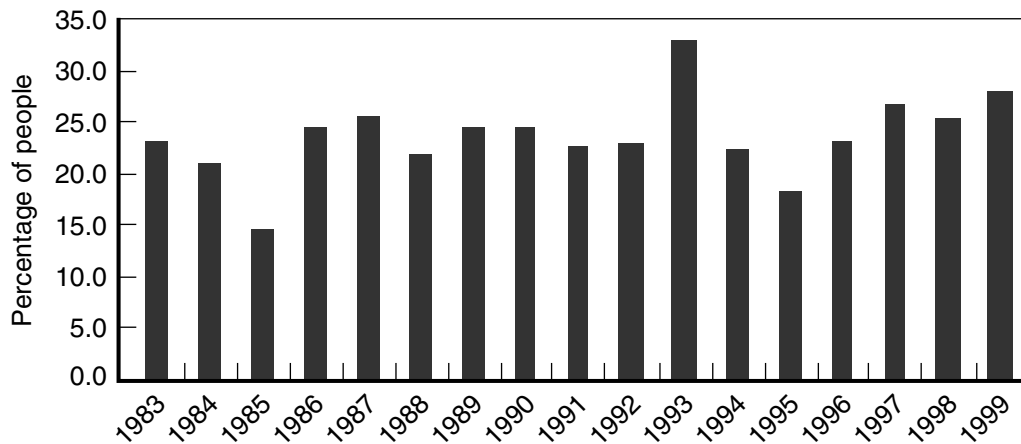


Figure D.9—Rates of Exit from School Administration, 1983–1999

To understand the flows out of school administration, knowing where people are going is important because it can shed light on why people leave. From the results, it appears that people left school administration either to get out of the labor force, primarily through retirement, or to go to a new occupation. Movement out of the labor force accounted for slightly over 18 percent of the exits, and this type of exit appears to have been through retirement, because the average age across this group was 60 (median age, 63). Of all the people leaving school administration, many remained in the labor force. Of those, 22 percent moved into a management position in another industry, and 37 percent moved into teaching occupations. Interestingly, approximately 23 percent of exits were to a wide array of other occupations, none of which accounted for more than 1 or 2 percent by itself.

Compensation and working conditions are factors that might affect an individual's choice to leave an occupation. Among the people leaving school administration for another job, weekly earnings fell on average by \$40. This reduction in weekly earnings included both a reduction in hours worked per week (approximately one hour) and a reduction in the hourly wage rate (approximately \$0.30 per hour). This result at first seems somewhat counterintuitive, since, as noted earlier, one generally expects to see increases in compensation for job switchers. However, it may be that working conditions and job requirements, rather than compensation, are driving the decision to leave school administration. In addition, many of those leaving returned to teaching occupations, a move for which a reduction in compensation might be expected. To address this issue, we looked at the change in compensation for two groups of people who left: those who left for teaching occupations and those who left for non-teaching occupations. We found greater reductions in weekly earnings for those who left for teaching (–\$50), but there were reductions for the other group as well (–\$29).

If we define the population of interest as public school administrators, then a move from the public to the private sector would be considered an exit. From 1983 to 1999, only 3 percent of school administrators left public schools for private schools. This

movement was relatively small given how the compensation for private school administrators grew relative to that for public school administrators during the same period.