DISCUSSION PAPER SERIES

IZA DP No. 704

Intrafirm Mobility and Sex Differences in Pay

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January 2003

Forschungsinstitut
zur Zukunft der Arbeit
Institute for the Study
of Labor

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ABSTRACT

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In this paper we analyze eight years of employment data of a regional grocery store chain in the U.S. The data include job titles, wage rates, and earnings for all employees. We examine initial job assignments, mobility between departments, and mobility into supervisory and management positions in the firm. We model the flows of individuals between different departments and jobs within the firm as a Markov process. The estimated transition probabilities imply that expected seniority is greater for women. We find a pattern of intrafirm mobility and initial job assignment that generally penalizes women, even after taking account of individuals' characteristics.

JEL Classification: J3, J6

Keywords: job mobility, seniority, gender wage differentials

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I. INTRODUCTION

A ubiquitous feature of the United States labor market is the segregation of men and women into different occupations and industries. An early paper by Oaxaca (1973) found that women tend to be in lower paying occupations. Some economists have argued that segregation of jobs into "men's work" and "women's work" is an essential element of labor market discrimination. The crowding hypothesis asserts that barriers that keep women from entering some jobs helps to maintain high wages for men, while forcing women to work for lower wages. Bergman (1986, Chapter 5) for example, stresses the role that segregation plays in reducing pay and advancement of women employees, especially within "internal" labor markets. Bielby and Baron (1984) examines how organizational structures and bureaucratic processes generate and sustain discrimination. Data based on 393 California establishments over the period 1959-79 indicated that segregation increases with establishment size and that establishment size accounts for most of the association between establishment characteristics and job segregation. Furthermore, the study observed that the scope for job segregation lessens with the female share of employment. Neuman and Oaxaca (2001) examines the effects of selection effects of occupational segregation on gender wage differentials among professional workers. Depending on how gender differences in the components on the selectivity terms are interpreted, estimates of gender discrimination can vary widely. Baldwin et al. (2001) identify the effects of occupational segregation on gender wage gaps using a model of hiearchical discrimination in which males have distaste for supervision by female managers. The model predicts that the relative proportion of female workers declines exponentially as one moves up the job ladder. Empirical results from a 1988 CPS sample of workers in the insurance industry support this prediction.

In this paper we take advantage of a unique data set to examine job placement

and promotions within a firm. We follow job progression and pay of the firm's retail employees for a period of 10 years, from 1976 to 1986. We find that the pattern of initial job placement and the promotion of female employees leads to a high level of segregation. This segregation also leads to lower pay for female employees.

II. DATA

The data on which this analysis is based come from a large grocery retailer in the United States. Table 1 briefly summarizes some of the characteristics of the firm during the period of our analysis. The firm operated between 55 and 60 retail stores, employing 2200 to 2500 workers in its retail operation. (We do not have data for non-retail employees, such as truck drivers, accountants or janitors.) About 60 percent of these stores were located within a single large metropolitan area. The company closed several stores and opened several new stores during this period.

The firm's employees have changed over the period of analysis. The proportion of employees who were women grew from about 36 percent to about 41 percent. Most employees worked part-time, but this changed rather dramatically over this period – growing from 1/2 to 3/4 of all employees. Seniority (and to a lesser extent, age) of the typical employee increased over this period.

In the early 1980's several women initiated a class action lawsuit, alleging discrimination. The company lost the suit in 1984 and eventually reached a settlement in 1986. The settlement required the firm to pay several million dollars in "back pay" and also to initiate affirmative action policies for promotion and job assignment. We show later in this paper that this had a dramatic impact on segregation of women and men across jobs.

Figure 1 presents a simple organization chart for the company. Each store has three salaried employees – the store manager, the assistant manager, and the relief manager. All employees are covered by collective bargaining agreements. Most em-

ployees are represented by the Retail Clerks Union, but meat department employees are represented by a separate union.

There are basically four "departments" in each store: meat, produce, grocery, and variety (non-foods). The produce and meat departments each have a manager. These managers are part of the collective bargaining unit, and they receive a higher wage than other employees. The night crew chief supervises stocking of the store during the night, and also receives a wage premium. The variety department does not have a manager. A few stores have specialized departments, such as a bakery; these employees are lumped together in the "other" category. Courtesy clerks bag and carry groceries for customers.

Table 2 provides summary statistics for the job categories shown in Figure 1. The average wage (or salary) is reported for each category, along with the average age, average seniority, and proportion who are female of individuals holding those jobs as of December 31, 1982. The average annual earnings are reported for employees who held the same job title on December 31, 1981. These annual earnings include bonuses paid to management employees. Most job titles encompass several different pay rates. Pay scales for clerks are based on seniority level. Scales may also vary slightly by location because the union contracts vary slightly from city to city.

Store level managers typically earn substantially more than other employees. However, the average earnings of the meat department manager are greater than the average earnings of the assistant or relief managers. Other meat department employees also receive relatively high wages compared with other departments.

Most employees in the store work as food clerks. This job includes those who stock shelves and those who operate cash registers. The average wage for food clerks was about $9 per hour at the end of 1982, excluding night shift or overtime premia. This was probably a fairly attractive wage for a job with no special education requirements. By comparison, the average wage of production workers in manufacturing in the

United States for June, 1982 was $8.50.[1]

Produce clerks and variety clerks also stock. Produce clerks have the same union wage scale as food clerks, but the variety clerks' scale is much lower. The average wage of variety clerks is $1.75 per hour less than for produce clerks or food clerks. Courtesy clerks work for near the minimum wage. There is heavy turnover among courtesy clerks, with average seniority of only about one year. Courtesy clerks are about 10 years younger, on average, than food clerks or produce clerks.

III. SEGREGATION AND WAGE DIFFERENTIALS

The distribution of men and women across job titles is reported in Table 3. Job titles within this company are highly segregated. For example, the store level management and department management positions are occupied almost completely by male employees. (No woman had ever been a store manager for the firm as of December 31, 1982.) While 39 percent of the work force is composed of women, 95 percent of variety clerks and meat wrappers were women, but only 12 percent of produce clerks were women, and less than 1 percent of meat cutters were women. Courtesy clerk jobs are disproportionately filled by men.

A convenient way to summarize the level of segregation is to use the dissimilarity index, D. This index is widely attributed to Duncan and Duncan (1955), who describe some of its properties. The Duncan index is defined as

$$D = \frac{1}{2} \sum_{i=1}^{K} \left| p_i^m - p_i^f \right|,$$

where p_i^f is the proportion of all females in job i, and p_i^m is the proportion of all males in job i. The dissimilarity index is bounded between 0 and 1. Proportional representation of men and women in all job categories would yield a value of 0; completely segregated categories would yield a value of 1. D has a convenient interpretation – it is equal to the fraction of women (or men) that would have to change jobs to have

equal proportions of men and women in each job. In this case, about 46 percent of women would have to change jobs to achieve proportional representation in all jobs. For other applications of the dissimilarity index to labor market segregation, see Albelda (1986) or Ransom (1990).

Table 4 reports the average characteristics of men and women in the various hourly-paid jobs. In most jobs, the average woman is paid more than the average man, reflecting the typically higher seniority and age of women employees. This is also demonstrated in Table 5.

Table 5 presents results of regression analysis of the natural logarithm of the hourly wage. (Salaried employees are excluded.) The first column shows that women's wages are about 8.5 percent higher than men's, on average. However, this difference is due to the higher seniority and age of women. Column 2 shows that after allowing for these differences, women's wages are actually about 8 percent *less* than the wages of similarly qualified men.

The third column of Table 5 includes indicators for the job title of the employee. Once these are included, the male/female wage difference falls to only about 1 percent. Thus, virtually all sex differences in pay can be explained by the job assignment of the employee. In fact, column IV shows that job title variables explain about 95 percent of all of the variation in wages. Of course, this result cannot be a surprise, since job titles are associated contractually with wage levels. But this analysis does point out that the substantial wage differential observed in column II is the result of segregation – women tend to be placed in low wage jobs relative to their seniority and age.

IV. INTRAFIRM MOBILITY

The relatively disadvantageous job assignments for women can arise from two sources: (1) initial assignment at time of hire, and (2) promotions or other job changes

during the employee's tenure at the firm. We will examine both of these issues using various models.

A Markov Model of Mobility

One way to capture intrafirm job movements is with a simple Markov model. Assume that there are K job categories. At any time, t, the proportion of employees in each category can be represented by a 1xK vector, P_t, where the ith element is P_{it}. We are interested in examining both the relationship between P_t and P_{t-1}, as well as the long run value of P_t as t becomes very large.

Central to this model is a matrix of transition probabilities. We define a KxK matrix, A, whose $ijth$ element a_{ij} represents the probability of moving from category i in period $t-1$ to category j in period t. The ith row contains the probabilities of moving from category i in $t-1$ to each of the K categories in period t. Thus, the elements of each row sum to 1. If the job mobility process is stationary, then the following relationship must hold:

$$P_t = P_{t-1}A. \tag{1}$$

In general, one can express P_t in terms of an initial period job distribution and the transition matrix by backward recursion:

$$P_t = P_0 A^t. \tag{2}$$

The long-run distribution of employees across the K categories, P^* is independent of the initial distribution, and is defined by

$$\lim_{t\to\infty} \left(P_0 A^t\right) = P^*. \tag{3}$$

Without loss of generality, we designate the first row of the transition probability matrix A as the transition probabilities corresponding to a new hire being assigned job

titles 1 through K. We designate the first column of A as the transition probabilities corresponding to an employment separation (quit, discharge, retirement) from job titles 1 through K. The steady state solution P_1^* (the first element of P^*) may be interpreted as the probability that an employee would leave the company in any given period. Therefore, an employee's expected tenure equals $1/P_1^*$.

Assuming that the long-run distribution is stationary, the solution for the elements of P^* is obtained from

$$P_1^* = 1 - \sum_{i=2}^{K} P_i^* \tag{4}$$

and

$$P_j^* = \sum_{i=1}^{K} a_{ij} P_i^* \text{ for } j = 2, ..., K. \tag{5}$$

In matrix notation the steady state solution to the process may be expressed as

$$P^* = P^* \tilde{A} + b \tag{6}$$

$$\Rightarrow P^* = b \left(I_K - \tilde{A} \right)^{-1}, \tag{7}$$

where $P^* = (P_1^*, P_2^*, ..., P_K^*)$, $\tilde{A} = \begin{pmatrix} 0 & -1 & \cdot & \cdot & \cdot & -1 \\ a_{12} & a_{22} & \cdot & \cdot & \cdot & a_{K2} \\ \cdot & \cdot & \cdot & \cdot & \cdot & \cdot \\ \cdot & \cdot & \cdot & \cdot & \cdot & \cdot \\ \cdot & \cdot & \cdot & \cdot & \cdot & \cdot \\ a_{1K} & a_{2K} & \cdot & \cdot & \cdot & a_{KK} \end{pmatrix}$, $b = (1, 0, ..., 0)$, and I_K is an identity matrix of dimension K.

In our case, the elements of A are estimated from observed transitions. We use the following estimator:

$$\hat{a}_{ij} = \frac{\sum_{t=2}^{T} E_{ijt}}{\sum_{t=2}^{T} N_{i,t-1}}$$

where E_{ijt} is the number of employees in category j in year t who were in category i in year $t-1$ and $N_{i,t-1}$ is the number of employees in category i in year $t-1$. We have estimated these separately for men and women employees.

Tables 6.a and 6.b present our estimates of the transition matrices based on job titles held by employees as of year-end 1976, 1977, 1978, and 1979 transitions observed. The entries in the rows of the table show the disposition of the individuals who held the job title the previous year. For example, the second entry in the first column of Table 6.a shows that 8.45 percent of male store managers had separated from the company by the end of the next year. This matrix clearly shows the path to management – 3.9% of food clerks were promoted to night crew chief each year, while 18.5 percent of crew chiefs were promoted to relief manager, and 19.5 percent of relief managers were promoted to assistant manager, and 9.7 percent of assistant managers were promoted to store manager.

This table also shows why men are absent from some job titles. For example, the first row of the table shows that no men were hired as meat wrappers or variety clerks during the period. Those who held meat wrapper or variety clerk jobs at the beginning of the period left the company at a high rate.

Table 6.b offers a graphic explanation of the source of segregation. Many more entries in this matrix contain zeroes than in the corresponding male matrix. The largest fraction of women who are hired become food clerks, but about 7 percent of all hires become meat wrappers and about 6 percent become variety clerks. Of the food clerks, about 80 percent remain in the category each year and almost all of the remaining 20 percent leave the firm. Less than 3/10ths of 1 percent move to the crew chief position.[2]

The glass ceilings are apparent in Table 6.b. Female variety clerks have about a 2 percent chance of becoming food clerks, otherwise they either remain variety clerk or leave the firm. Less than 1/2 of 1 percent of meat wrappers move to a different

position within the company each year. (Male meat department employees do not move to other parts of the store, either.)

The implications of these transition rates can be summarized by looking at the long-run job distribution for men and women. For the 1976-79 period the probabilities of a job separation were 0.218 and 0.197 for men and women, respectively. These probabilities imply an expected tenure of 4.6 years for men and 5.1 years for women. For the 1983-86 period, the probabilities of a job separation increased to 0.270 and 0.231 for men and women. Correspondingly, the expected tenure fell to 3.7 years for men and to 4.3 years for women. Therefore, the company could expect that women would stay with the firm on average a half-year longer than the men. Conditional upon remaining with the company, the steady state job title distribution is calculated according to $P_j^* / (1 - P_1^*)$, $j = 2, ..., K$. Table 7 presents the long-run job title distribution for the 1976-79 data that are presented in Tables 6.a and 6.b, and also the long-run distribution implied by transitions observed between 1983 and 1986. The level of segregation implied, as measured by the dissimilarity index, falls dramatically from 0.562 to 0.325. The law suit filed against the company in the early 1980's may have changed some of the employment practices of the firm.

Regression Analysis of Mobility

One weakness of the preceding Markov model is that it fails to take account of differences in characteristics of men and women in the various job groups. While this is unlikely to explain much of the gender difference (due to the higher average qualifications of women in our sample), it is interesting to observe the patterns of mobility related to characteristics of individuals. The most interesting group to examine is the food clerks, since that category contains significant numbers of both men and women. This is also a step in the track from hire to store level management positions.[3] We concentrate on two aspects of mobility: (1) separations (voluntary),

and (2) promotions into management positions.

Table 8 examines separation probabilities, using a probit regression model. We study the group of individuals present as food clerks as of December 31, 1978, and employees have separated if they do not appear as employees in 1982. The first column shows that women are much less likely than men to leave the firm which is consistent with the overall results of our Markov analysis. However, after controlling for age and seniority the difference among Food Clerks is not statistically significant. This contrasts with the conventional wisdom that women have higher quit propensities. Weiss' (1984) analysis also found lower quit rates for women. He argues that women should have lower quit rates if their opportunities outside the firm are generally inferior to men's. There is a strong correlation between age, seniority, and the separation rate, with the rate falling with age, and falling with seniority for the first 10 years.[4]

In Table 9 we analyze the probability of a food clerk being promoted to a store level management position (store manager, assistant manager or relief manager). Again, we analyze employees who held the food clerk job as of December 31, 1978. The dependent variable in the analysis indicates whether the employee held a store level management job in 1982. (This will obviously understate the total number of promotions, since some managers may leave the company and others may be demoted in the intervening period.) Female food clerks are much less likely to be promoted, and the difference is statistically significant. Age and seniority do a poor job of identifying those who will be promoted.

V. CONCLUSIONS

In our analysis of the employment records of a single firm, we have found that there is a high level of segregation of jobs along gender lines. This segregation arises because some entry level jobs are assigned almost exclusively to women (and others to

men), and because movements between jobs are much less likely to occur for women than for men. In particular, women were almost totally excluded from department level and store level management positions during the early years of our study. These rates were more favorable for women in the later years of our data, perhaps due to the "shock effect" of a class action lawsuit.

This segregation results in lower pay for women. Our analysis of hourly workers found that in 1982, women's wage rates were about 8 percent lower than men's, after controlling for age and seniority.[5]This difference can be explained almost completely by the different job assignments for men and women. This measure clearly understates the pay gap due to segregation, since the predominantly male, high paying, store management positions are salaried, and thus are not included in this analysis.

Given a finding of gender inequity in the workplace, inquiry would naturally shift to the remedies that a firm or court of law should consider. In Oaxaca and Ransom (2000) several within-firm equity salary adjustment algorithms are developed. These algorithms are designed to satisfy various constraints such as total disbursement of the originally estimated aggregate salary inequity, invariance of the salaries of male workers with respect to a salary adjustment mechanism, the avoidance of salary reductions for women stemming from an adjustment mechanism, and positive lower bound constraints on salary adjustments for women. Simulations were run in which these salary adjustment algorithms were applied to a 1986 data set from the same company represented in the present study. Depending on which constraints are satisfied, the distribution of equity salary adjustments can be quite different. However, these algorithms beg the question of how they should be implemented. This is an important question in the light of this paper's findings that gender differences in job titles can be a major, if not the sole, reason for gender salary inequity. Pure salary adjustments without a program for short-term job reassignments and long-term equity in promotion and hiring is tantamount to a comparable worth solution. A solution

along these lines most likely would distort the occupational wage structure.

End Notes

* We gratefully acknowledge the helpful comments of seminar participants at the Universidad del Pais Vasco, Bilbao Spain. We also gratefully acknowledge the capable research assistance of Francesco Renna.

1. Source, *Statistical Abstract of the United States, 1982-83* (103rd edition), Table 665.

2. Note that the fact that women crew chiefs present in one year always show up in the same job the next year presents a problem for our long-run analysis. We have assumed that no women will have the job title.

3. Positions such as variety clerk and meat wrapper show almost no mobility, so they do not present an interesting case for regression analysis.

4. Using a different functional form, we found that separation rates were about the same for those above about 25 years of age. Of course, separation rates among the youngest workers are extremely high.

5. Oaxaca and Ransom (1994) reports wage decompositions based on a 1986 sample from the same firm. Separate (log) earnings equations were estimated for males and females. Depending on the type of decomposition used, the unexplained earnings gap ranged from 28.8 percent to 33.1 percent in favor of men after accounting for age and seniority. Some of the unexplained gap may have resulted from different labor supply choices, but much had to do with job assignment.

REFERENCES

Albelda, Randy P. (1986) "Occupational Segregation by Race and Gender, 1958-1981," *Industrial and Labor Relations Review.* 39(3): 404-411.

Baldwin et al. (2001) "A Hierarchical Theory of Occupational Segregation and Wage Discrimination," Economic Inquiry 39(1): 94-110.

Bergman, Barbara R. (1986) *The Economic Emergence of Women.* New York: Basic Books, Inc.

Bielby, William T. and James N. Baron (1984) "A Woman's Place Is With Other Women: Sex Segregation Within Organizations," In *Sex Segregation in the Workplace,* B. Reskin, ed., Washington: National Academy Press: 27-55.

Duncan, Otis D. and Beverly Duncan (1955) "A Methodological Analysis of Segregation Indexes," *American Sociological Review.* 10(2): *210-217.*

Neuman, Shoshana and Ronald L. Oaxaca (April 2001) "Estimating Labor Market Discrimination with Selectivity-Corrected Wage Equations: Methodological Considerations and An Illustration from Israel," mimeo.

Oaxaca, Ronald (1973) "Male-Female Wage Differentials in Urban Labor Markets," *International Economic Review.* 14(3): 693-709.

Oaxaca, Ronald L. and Michael R Ransom (1994) "On Discrimination and the Decomposition of Wage Differentials," *Journal of Econometrics.* 61: 5-21.

Oaxaca, Ronald L. and Michael R Ransom (May 2000) "Using Econometric Models for Intrafirm Equity Salary Adjustments," mimeo.

Ransom, Michael R (1980) "Gender Segregation by Field in Higher Education," *Research in Higher Education.* 31(5): 477-494.

Weiss, Andrew (1984) "Determinants of Quit Behavior," *Journal of Labor Economics.* 2(3): 371-87.

Table 1

Company Characteristics
Retail Operations
Selected Years (As of 31 December)

	1976	1982	1986
Number of Stores	60	58	55
Number of Stores in Largest Metropolitan Area	35	36	32
Number of Retail Employees	2,182	2,480	2,489
Percent of Employees who are Female	36.20%	38.80%	41.20%
Percent of Employees who work Part Time	50.80%	65.40%	75.60%
Average Age	29.6	31	31.7
Average Seniority	4.5	5.9	6.3

Table 2

Characteristics of Job Holders
Year End, 1982

Job Title	Variable	Mean	Standard Deviation	Minimum	Maximum
Store Manager (N=58)	Weekly Salary	609.00	0	609.00	609.00
	Annual Earnings	34,099.05	3,859.89	31,543.00	44,204.10
	Seniority	15.61	8.23	0.38	34.12
	Age	39.44	9.92	25.19	63.14
	Female	0.00	0.00	0.00	0.00
Assistant Manager (N=58)	Weekly Salary	541.00	0.00	541.00	541.00
	Annual Earnings	28,308.88	386.64	27,536.00	29,199.00
	Seniority	10.85	6.42	0.41	34.21
	Age	33.34	8.68	21.97	54.97
	Female	0.05	0.22	0.00	1.00
Relief Manager (N=57)	Weekly Salary	513.00	0.00	513.00	513.00
	Annual Earnings	26,561.52	146.16	26,147.00	27,047.00
	Seniority	7.04	5.06	0.55	31.13
	Age	30.16	9.44	20.30	58.44
	Female	0.05	0.23	0.00	1.00
Food Clerk (N=1,114)	Hourly Wage	9.06	0.99	5.58	9.55
	Annual Earnings	17,222.82	3199,21	3,283.58	23,297.20
	Seniority	6.39	5.08	0.03	32.83
	Age	33.36	11.76	17.72	65.02
	Female	0.54	0.50	0.00	1.00
Night Crew Chief (N=56)	Hourly Wage	9.65	0.12	9.50	9.75
	Annual Earnings	20,984.38	1,391.08	17,841.61	24,153.07
	Seniority	6.32	3.98	0.50	22.34
	Age	29.68	8.97	20.54	56.83
	Female	0.05	0.23	0.00	1.00
Courtesy Clerk (N=568)	Hourly Wage	3.19	0.29	2.85	3.60
	Annual Earnings	4,859.61	1,408.86	1,760.35	9,761.70
	Seniority	0.90	0.83	0.02	4.40
	Age	19.16	4.62	16.09	72.63
	Female	0.29	0.46	0.00	1.00
Produce Manager (N=58)	Hourly Wage	9.85	0.10	9.65	10.01
	Annual Earnings	23,454.38	1,108.86	18,900.44	25,165.37
	Seniority	14.64	8.61	2.17	31.90
	Age	36.29	9.86	20.04	56.61
	Female	0.00	0.00	0.00	0.00

Table 2 (con't)

Characteristics of Job Holders
Year End, 1982

Job Title	Variable	Mean	Standard Deviation	Minimum	Maximum
Produce Clerk (N=109)	Hourly Wage	8.95	1.13	5.58	9.55
	Annual Earnings	17,899.87	3,478.52	7,811.48	22,281.83
	Seniority	6.61	6.62	0.22	32.78
	Age	30.21	10.39	16.73	61.89
	Female	0.12	0.33	0.00	0.00
Meat Manager (N=57)	Hourly Wage	11.64	0.09	11.29	11.67
	Annual Earnings	29,147.17	1,572.17	25,116.82	32,309.71
	Seniority	11.43	7.43	1.42	29.08
	Age	40.65	9.05	27.21	64.48
	Female	0.00	0.00	0.00	0.00
Meat Cutter (N=168)	Hourly Wage	11.28	0.33	7.20	11.33
	Annual Earnings	24,523.44	2,652.64	3,212.41	28,909.21
	Seniority	7.19	5.87	0.41	28.64
	Age	41.36	11.01	23.11	65.98
	Female	0.01	0.08	0.00	1.00
Meat Wrapper (N=89)	Hourly Wage	10.28	0.27	9.07	10.40
	Annual Earnings	18,758.66	4,164.13	2,156.20	24,197.57
	Seniority	8.33	6.88	0.23	26.00
	Age	41.90	11.42	20.47	64.84
	Female	0.97	0.18	0.00	1.00
Variety Clerk (N=78)	Hourly Wage	7.26	0.96	5.39	8.64
	Annual Earnings	13,132.72	2,410.48	7,736.17	17,021.99
	Seniority	6.42	4.67	0.16	16.31
	Age	32.69	12.63	16.71	63.34
	Female	0.95	0.22	0.00	1.00
Other (N=13)	Hourly Wage	6.55	0.95	5.58	8.47
	Annual Earnings	11,659.68	3,074.14	7,674.86	18,272.61
	Seniority	5.86	5.59	0.24	18.96
	Age	36.28	15.57	18.05	62.08
	Female	0.77	0.44	0.00	1.00

Table 3

Distribution of Men and Women Across Jobs
in 1982

	Women Holding Title	Fraction of All Women	Men Holding Title	Fraction of All Men
Store Manager	0	0.000	58	0.038
Assistant Manager	3	0.003	55	0.036
Relief Manager	3	0.003	55	0.036
Food Clerk	599	0.623	507	0.334
Night Crew Chief	3	0.003	53	0.035
Courtesy Clerk	170	0.177	403	0.265
Produce Manager	0	0.000	58	0.038
Produce Clerk	13	0.014	96	0.063
Meat Manager	0	0.000	57	0.038
Meat Cutter	1	0.001	167	0.110
Meat Wrapper	86	0.089	3	0.002
Variety Clerk	74	0.077	4	0.003
Other	10	0.010	3	0.002
Total	962	1.000	1518	1.000

Table 4

Average Characteristics of Employees
in Hourly-Paid Jobs, By Sex
(December 31, 1982)

Job Title	Variable	Average Male	Average Female
Food Clerk	Wage	9.03	9.09
	Seniority	5.84	6.88
	Age	27.9	37.99
Night Crew Chief	Wage	9.66	9.58
	Seniority	6.10	10.35
	Age	29.03	41.17
Courtesy Clerk	Wage	3.17	3.23
	Seniority	0.90	0.99
	Age	18.95	19.41
Produce Manager	Wage	9.85	-
	Seniority	14.64	-
	Age	36.29	-
Produce Clerk	Wage	9.02	8.48
	Seniority	7.10	2.95
	Age	30.56	27.65
Meat Manager	Wage	11.64	-
	Seniority	11.43	-
	Age	40.65	-
Meat Cutter	Wage	11.28	11.33
	Seniority	7.22	1.47
	Age	41.44	28.7
Meat Wrapper	Wage	9.76	10.3
	Seniority	2.15	8.55
	Age	21.25	42.63
Variety Clerk	Wage	5.71	7.35
	Seniority	2.15	8.55
	Age	18.31	33.47
Other	Wage	5.81	6.77
	Seniority	2.43	6.88
	Age	29.33	38.37

Table 5

Regression Results, Hourly Workers 1982
Dependent Variable is Logarithm of Hourly Wage

(Standard Errors are in Parentheses)

	I	II	III	IV
Intercept	1.926	-0.221	0.870	1.152
	(0.013)	(0.047)	(0.018)	(0.005)
Female	0.084	-0.078	-0.013	0.011
	(0.020)	(0.012)	(0.005)	(0.005)
Seniority	-	0.065	0.019	-
		(0.003)	(0.001)	
$(\text{Seniority})^2$	-	-2.25e-03	-6.23e-04	-
		(1.26e-04)	(4.60e-05)	
Age	-	0.111	0.019	-
		(0.003)	(0.001)	
$(\text{Age})^2$	-	-1.30e-03	-2.19e-04	-
		(3.04e-05)	(1.61e-05)	
Food Clerk	-	-	0.903	1.039
			(0.007)	(0.006)
Night Crew Chief	-	-	0.966	1.115
			(0.015)	(0.015)
Produce Manager	-	-	0.946	1.135
			(0.015)	(0.015)
Produce Clerk	-	-	0.900	1.029
			(0.011)	(0.011)
Meat Manager	-	-	1.100	1.303
			(0.015)	(0.015)
Meat Cutter	-	-	1.100	1.303
			(0.015)	(0.015)
Meat Wrapper	-	-	1.014	1.167
			(0.013)	(0.013)
Variety Clerk	-	-	0.689	0.811
			(0.013)	(0.014)
Other	-	-	0.596	0.710
			(0.027)	(0.031)
Courtesy Clerk	-	-	-	-
R^2	0.007	0.676	0.961	0.949

Table 6.a.

Transition Probabilities - Male Employees
December 31, 1976 - December 31, 1979

Source Category	Destination Category													
	Terminated	Store Manager	Assistant Manager	Relief Manager	Food Clerk	Crew Chief	Courtesy Clerk	Produce Manager	Produce Clerk	Meat Manager	Meat Cutter	Meat Wrapper	Variety Clerk	Other
New Hires	0	0.0026	0.0013	0.0086	0.205	0.0086	0.6839	0.002	0.0271	0.0007	0.0602	0	0	0
Store Manager	0.0847	0.8701	0.0282	0	0.0113	0	0	0.0056	0	0	0	0	0	0
Assistant Manager	0.1257	0.0971	0.7371	0.0229	0.0171	0	0	0	0	0	0	0	0	0
Relief Manager	0.1379	0	0.1954	0.6207	0.0402	0	0	0.0057	0	0	0	0	0	0
Food Clerk	0.2277	0.0008	0.0024	0.0295	0.6561	0.039	0.0247	0.0024	0.0175	0	0	0	0	0
Crew Chief	0.1481	0	0	0.1852	0.1852	0.463	0	0	0.0185	0	0	0	0	0
Courtesy Clerk	0.6487	0	0	0	0.1377	0.0024	0.1733	0	0.0364	0	0.0016	0	0	0
Produce Manager	0.0457	0	0.0057	0.0057	0	0	0	0.88	0.0629	0	0	0	0	0
Produce Clerk	0.1709	0	0	0.0028	0.1289	0	0.0112	0.0364	0.6471	0	0.0028	0	0	0
Meat Manager	0.0629	0	0	0	0	0	0	0	0	0.8914	0.0457	0	0	0
Meat Cutter	0.1111	0	0	0	0	0	0	0	0.0025	0.042	0.8444	0	0	0
Meat Wrapper	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Variety Clerk	0.4	0	0	0	0	0	0	0	0	0	0	0	0.6	0
Other	0.3333	0	0	0	0	0	0.333	0	0	0	0	0	0	0.333

Table 6.b.

Transition Probabilities - Female Employees
December 31, 1976 - December 31, 1979

Source Category	Destination Category													
	Terminated	Store Manager	Assistant Manager	Relief Manager	Food Clerk	Crew Chief	Courtesy Clerk	Produce Manager	Produce Clerk	Meat Manager	Meat Cutter	Meat Wrapper	Variety Clerk	Other
New Hires	0	0	0	0	0.4627	0	0.4004	0	0.0044	0	0	0.069	0.0567	0.0067
Store Manager	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Assistant Manager	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Relief Manager	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Food Clerk	0.1895	0	0	0.0006	0.804	0.0026	0.0019	0	0.0006	0	0	0	0.0006	0
Crew Chief	0	0	0	0	0	1	0	0	0	0	0	0	0	0
Courtesy Clerk	0.6122	0	0	0	0.1749	0	0.1574	0	0.0117	0	0	0.0058	0.0379	0
Produce Manager	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Produce Clerk	0.2500	0	0	0	0.2500	0	0.125	0	0.375	0	0	0	0	0
Meat Manager	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Meat Cutter	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Meat Wrapper	0.1853	0	0	0	0	0	0.0035	0	0	0	0	0.8112	0	0
Variety Clerk	0.2222	0	0	0	0.0206	0	0.0041	0	0	0	0	0	0.7531	0
Other	0.3235	0	0	0	0	0	0	0	0	0	0	0,0294	0	0.6471

Table 7

Long-Run Job Distributions From Markov Model

	Based On 1976-79 Transitions		Based On 1983-86 Transitions	
Job Title	Males	Females	Male	Female
Store Manager	0.041	0.000	0.025	0.007
Assistant Manager	0.045	0.000	0.020	0.012
Relief Manager	0.045	0.000	0.022	0.016
Food Clerk	0.313	0.700	0.323	0.583
Night Crew Chief	0.028	0.000	0.035	0.003
Courtesy Clerk	0.240	0.120	0.371	0.267
Produce Manager	0.037	0.000	0.032	0.000
Produce Clerk	0.071	0.005	0.063	0.020
Meat Manager	0.051	0.000	0.019	0.000
Meat Cutter	0.126	0.000	0.056	0.003
Meat Wrapper	0.000	0.094	0.003	0.011
Variety Clerk	0.000	0.076	0.005	0.051
Other	0.000	0.005	0.016	0.027
Retail Operations	0.000	0.000	0.010	0.000
Expected Tenure	4.6 yrs	5.1 yrs	3.7 yrs	4.3 yrs
Dissimilarity Index	0.562		0.325	

Table 8

Probit Regression Results - Food Clerks
Determinants of Separation, 1978-1982
(Standard Errors are in Parenthesis)

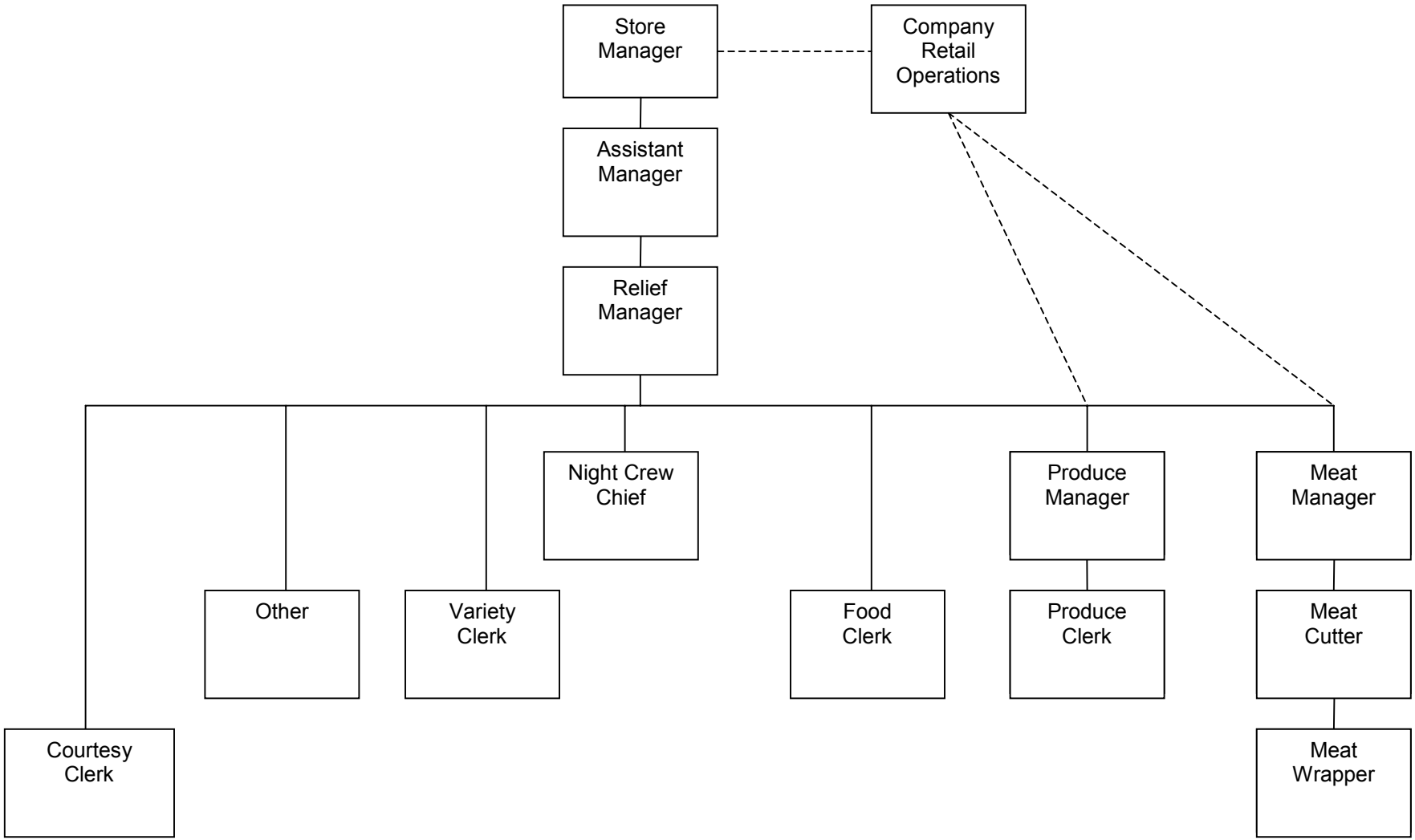
Variable	I	II
Intercept	-0.109 (0.059)	1.651 (0.410)
Female	-.245 (0.080)	-0.108 (0.100)
Age	--	0.001 (0.025)
Age^2	--	0.001 (0.0003)
Seniority	--	-0.129 (0.023)
$Seniority^2$	--	0.006 (0.001)
Sample Size	1,001	1,001
Log Likelihood	-670.87	-638.79

Table 9

Probit Regression Results - Food Clerks
Promotions to Store Level
Management Positions, 1978-82
(Standard Errors are in Parenthesis)

Variable	I	II
Intercept	-1.363 (0.084)	-0.952 (1.063)
Female	-0.999 (0.185)	-0.755 (0.217)
Age	--	-0.018 (0.072)
Age^2	--	-0.0001 (0.0011)
Seniority	--	0.096 (0.092)
$Seniority^2$	--	-0.013 (0.011)
Sample Size	1,001	1,001
Log Likelihood	-161.21	-155.46

Figure 1
Company Organization



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