

# OCCUPATIONAL MOBILITY AND GENDER: IMPLICATIONS FOR GOVERNMENT POLICY

Donald J. Robbins\*

## ABSTRACT

Data on all persons employed in the California State Civil Service between 1977 and 1985 reveals a marked improvement in the distribution of women across income classes. An important part of this improvement appears due to internal mobility. Survival function estimates show that upward mobility was high for employees starting in female-dominated occupations, absolutely and compared to mobility out of male-dominated, manual occupations. Hazard rate estimates show that mobility was increased by longer leaves and moving to full-time status and decreased by the number of separations. The effectiveness of occupational classifications designed to aid mobility was ambiguous.

## SÍNTESIS

Los datos que se refieren a todas las personas ocupadas en la Administración Civil del Estado de California entre 1977 y 1985 ponen de manifiesto un marcado aumento en la distribución de las mujeres en las categorías según niveles de ingreso. Una parte importante de esta mejor condición parece deberse a una movilidad interna. Las estimaciones de la función de supervivencia muestran que la movilidad ascendente fue elevada para aquellas funcionarias que empezaron desempeñándose en ocupaciones dominadas por el género femenino, en términos absolutos y también en comparación con la movilidad desde ocupaciones manuales dominadas por el género masculino. Las estimaciones hazard de la tasa demuestran que la movilidad aumentó debido a retiros más prolongados y el desplazamiento a una condición de empleo de tiempo completo y disminuyó debido al número de despidos. La efectividad de las clasificaciones ocupacionales diseñadas para facilitar la movilidad resultó ambigua.

\* Harvard Institute for International Development, U.S.A. The author acknowledges and thanks Aseel Rabie for her excellent research assistance.

# OCCUPATIONAL MOBILITY AND GENDER: IMPLICATIONS FOR GOVERNMENT POLICY\*

Donald J. Robbins

## 1. INTRODUCTION

The coincidence in the seventies and eighties of growth in the service and clerical sectors with higher female labor force participation rates has led to a concentration of women in these sectors, sometimes called "pink ghettos."<sup>1</sup> Despite Affirmative Action legislation enacted in the 1970s to remedy this situation, occupations remain segregated by sex. Of the ten occupations which employed the greatest percentage of women in 1980, nine were over 70 per cent female. The ten occupations with the greatest percentage of men were over 70 per cent male.<sup>2</sup> In addition, 48 per cent of women in the labor force worked in occupations that were at least 80 per cent female, and 71 per cent of men worked in occupations at least 80 per cent male.<sup>3</sup>

Occupational segregation could be mitigated by significant occupational mobility after the first job. Wolf and Rosenfeld (1978) found that starting in a female-dominated occupation<sup>4</sup> did not reduce the status mobility<sup>5</sup> of either sex, provided that those who started in such occupations eventually moved out of them. However, while 80 per cent of men move out of their initial jobs, only 31 per cent of women do. Furthermore, women are less likely than men to change occupations when they change jobs.<sup>6</sup>

\* *Estudios de Economía*, publicación del Departamento de Economía de la Facultad de Ciencias Económicas y Administrativas de la Universidad de Chile, vol. 21, n° 1, junio de 1994.

<sup>1</sup> Grusky and DiPrete (1990) discuss the impact of several factors on occupational segregation during the 1970s and 1980s.

<sup>2</sup> Hartmann and Reskin (1986).

<sup>3</sup> Hartmann and Reskin (1986).

<sup>4</sup> "Female-dominated" ("male-dominated") occupations are defined as such if they consist of 70 per cent or more females (males).

<sup>5</sup> The status or prestige of an occupation is measured as a function of the salary and level of educational attainment of that occupation's incumbents.

<sup>6</sup> Loprest (1992).

The persistence of occupational segregation, whereby women are hired into female-dominated occupations and tend not to move out of them, is associated with both lower wages and lower status. Bose (1973) finds that, when randomly selected respondents rate the social standing of various occupations, female-dominated jobs have a narrower prestige range and lower average prestige. Johnson and Solon (1986) demonstrate that a significant negative relationship still exists between wage rates and the percentage of women in an occupation after controlling for schooling and experience, geographic region, SMSA size, race, marital status and other factors.

Both supply and demand-side hypotheses have been advanced to explain this segregation of women into female-dominated, lower-paid occupations. On the supply side, some authors maintain that women occupy such positions by choice; because of their household duties, a number of women prefer jobs with more flexible schedules, fewer hours, and less responsibility.<sup>7</sup> For these women, these job characteristics compensate for the lower wages and status associated with such jobs. The same reasons then lead women to remain in these jobs.<sup>8</sup> Polachek (1981) claims that women who spend a great deal of time at home choose clerical and unskilled jobs because of the smaller effect that absences from the labor force have on earnings in these occupations.<sup>9</sup> According to both of these supply-side views, occupational segregation is the result of a process of self-selection attributable to women's home and family obligations and tastes.

On the demand side, other authors maintain that occupational segregation is caused by discrimination. Power, taste and information externalities are the three main economic explanations for labor market discrimination. According to the first explanation, the economic gain of the powerful group comes at the expense of the powerless group. Taste explanations contend that employers, co-workers, or sometimes customers prefer not to associate with members of a certain group. The third explanation, often termed statistical discrimination, states that discrimination in hiring and promotion results from the use of average information about groups. Women as a group may be less stable and/or may have greater variance in unobservable ability and lower average ability. In their desire to avoid unnecessary training and turnover costs and because they lack the information to evaluate women individually, employers judge a woman based on the perceived

<sup>7</sup> Loprest (1992).

<sup>8</sup> Tavis and Wade (1984), however, argue that women remain in such jobs not by choice, but rather because they have no other option. They claim that two-thirds of American working women never expect to be promoted and thus scale down their ambitions to their expectations.

<sup>9</sup> This argument seems to assume disutility from acquiring human capital. Women who leave the labor force frequently would have little or no return on their investment of effort in such occupations.

characteristics of her "group" (all women) and are thus reluctant to hire or promote her.<sup>10</sup>

Some authors argue that the interference of statistical discrimination with the occupational mobility of women is lessened by personal contacts within an organization that help overcome the underlying information imperfection. Looking at black managers, Nkomo and Cox (1989) find that help from mentors is more important to the advancement of women than men. Sagaria (1988) suggests that promoting women from within academic institutions reduces the statistical risks associated with hiring women and that being known through colleague networks (that is, academic meetings and publications) seems to be essential to inter-institutional mobility.

In more bureaucratic, governmental institutions, relying on women's personal contacts to aid mobility may be less feasible because of their size and impersonal operation. On the other hand, the potential for greater information within than across these institutions still exists where employee performance is systematically evaluated. In addition, such institutions have other options available to promote the upward mobility of women. These include lowering educational and/or experiential requirements for certain positions; instituting more flexible leave policies which allow women to get education; or engaging in proactive measures to improve the human capital of female employees. This study focuses on the California State Civil Service from 1976-1985 and examines whether its female-dominated occupations were "segmented" from other occupations and whether State efforts to promote the mobility of women were effective.<sup>11</sup>

Section 2 of this paper describes an improvement in the distribution of women across income classes within the State. The relative occupational wage structure was fairly constant during the 1976-1985 period,<sup>12</sup> so this improvement is due to changes in the occupational distribution of women which could come from either hiring and/or promotional policies.

Section 3 looks at several aspects of State mobility policies. First, did promotional patterns mitigate occupational segregation? Or were "female-dominated" jobs "dead-end" jobs offering little opportunity into better-paid professional and managerial jobs? Was mobility into professional and managerial occupations more difficult for workers starting in female-dominated occupations than for workers starting in male-dominated, manual occupations? To answer these

<sup>10</sup> Risk averse employers would also avoid hiring members of groups with larger variance in unobserved productivity while having the same average productivity.

<sup>11</sup> Hereafter it will be implicitly understood that we are referring to the California State Civil Service.

<sup>12</sup> Official State policy during the 1972-1982 period was a so-called "prevailing wage" structure which set State wages as moving averages of comparable private sector wages. To the extent this was true, State wage policy was neutral and will not be considered here.

questions, we examine occupational mobility rates and conclude that mobility out of female-dominated occupations was high, both in absolute terms as well as relative to mobility out of male-dominated, manual occupations.

Second, we examine the effects of several covariates on mobility. The first covariate examined in Section 3 is "bridging classes."<sup>13</sup> We discuss how widely they were used, by whom and whether their use increased upward mobility. Hazard function estimates suggest that although the innovation and use of "bridging classes" increased mobility out of both starting occupational groups, "bridging class" use was more effective for workers beginning in male-dominated, manual occupations than for workers starting in female-dominated occupations. This result is surprising due to the large percentage of "bridging class" users which is female and to high mobility rates out of the female-dominated occupations.

Section 3 then focuses on female-dominated occupations and looks at other factors affecting mobility. It concludes that after adding further controls bridging classes had an ambiguous or negative effect on women's chances of becoming mobile. Starting work part-time and then moving to full-time had a positive effect on mobility out of both female-dominated and male-dominated, manual occupations. Taking longer "leaves" also seems to have a positive effect on mobility, out of the female-dominated occupations as well as out of the semi-skilled category of male-dominated, manual starting occupations. These results suggest that a flexible State policy with regard to hours worked at the start of employment and temporary leaves is instrumental in aiding mobility. Such policies, however, are not targeted to women and thus do not directly promote the upward mobility of women.

## 2. INCOME DISTRIBUTION

The changing income distribution of women in any institution depends largely on where women are within that institution, i.e. on the occupations in which women are found. Thus discrimination in both hiring and promotion has a significant impact on the distribution of women across income classes.

Based on annual Census data on all persons employed in the California State Civil Service between 1977 and 1985, Figures 1, 2 and 3 reveal a pronounced rightward shift in the distribution of women into higher income classes.<sup>14</sup> The percentage of women in the lowest wage class decreased from 72.2 per cent in 1976 to 62.1 per cent in 1985, while it increased in every other wage class, with

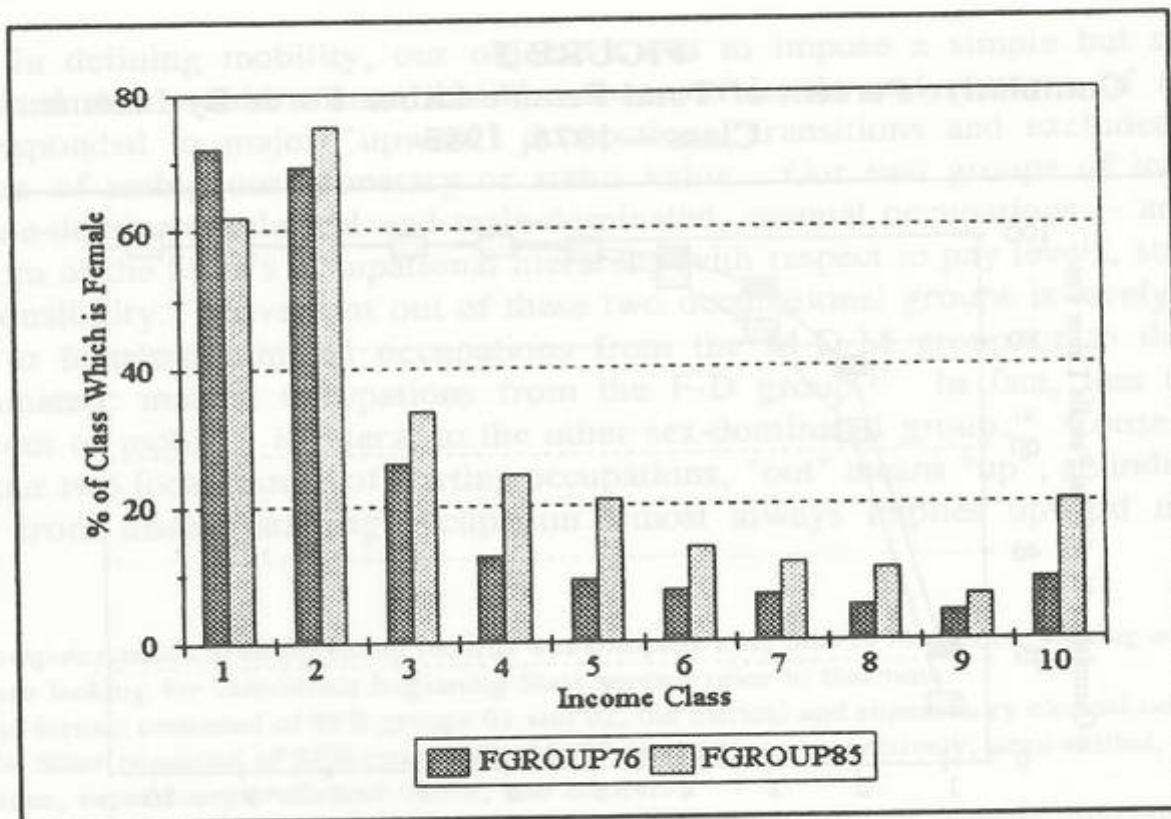
<sup>13</sup> Occupations largely designed to overcome experience or education requirements for promotion.

<sup>14</sup> Incomes from 1985 were deflated to 1976 dollars. It should be noted that an alternative deflation might have changed the results.

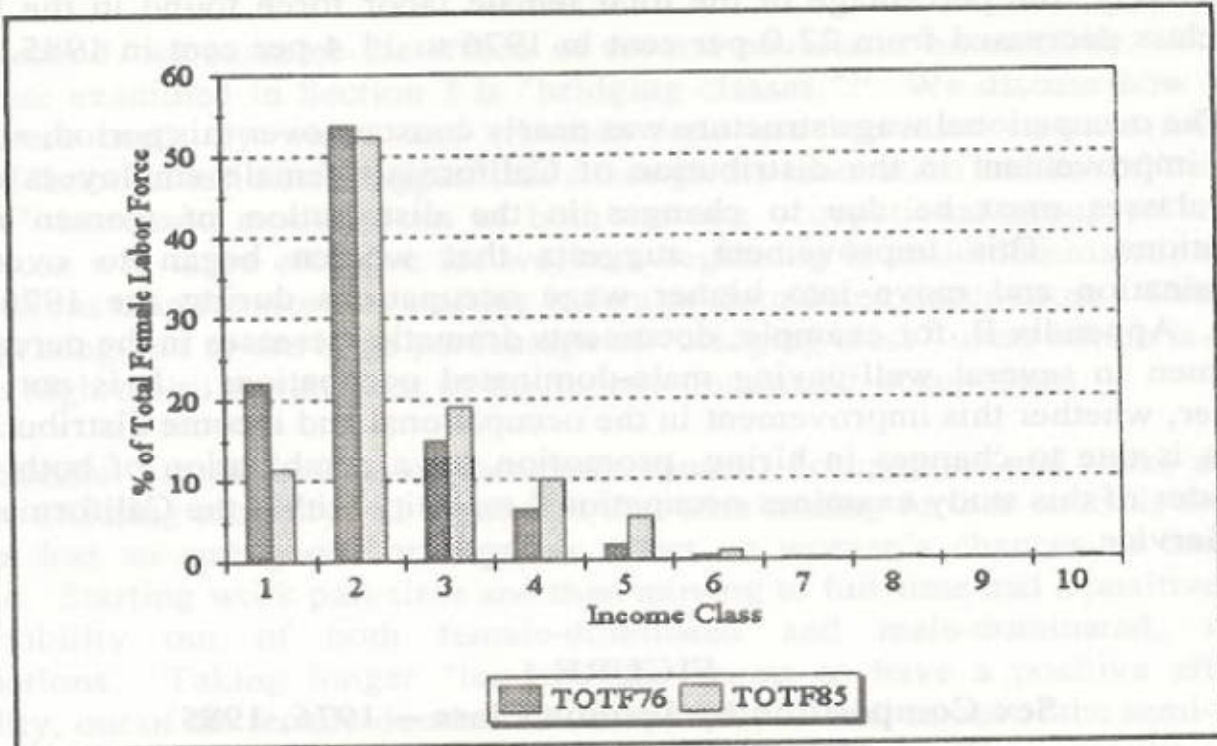
the largest percentage increases in the middle and at the upper end of the income distribution. The percentage of men in the lowest wage class increased from approximately 28 per cent to almost 40 per cent over the same period. Alternatively, the percentage of the total female labor force found in the lowest wage class decreased from 22.0 per cent in 1976 to 11.4 per cent in 1985.

The occupational wage structure was nearly constant over this period, so most of the improvement in the distribution of California's female employees across wage classes must be due to changes in the distribution of women across occupations. This improvement suggests that women began to overcome discrimination and move into higher wage occupations during the 1976-1985 period. Appendix B, for example, documents dramatic increases in the percentage of women in several well-paying male-dominated occupations. It is not clear, however, whether this improvement in the occupational and income distribution of women is due to changes in hiring, promotion, or a combination of both. The remainder of this study examines occupational mobility within the California State Civil Service.

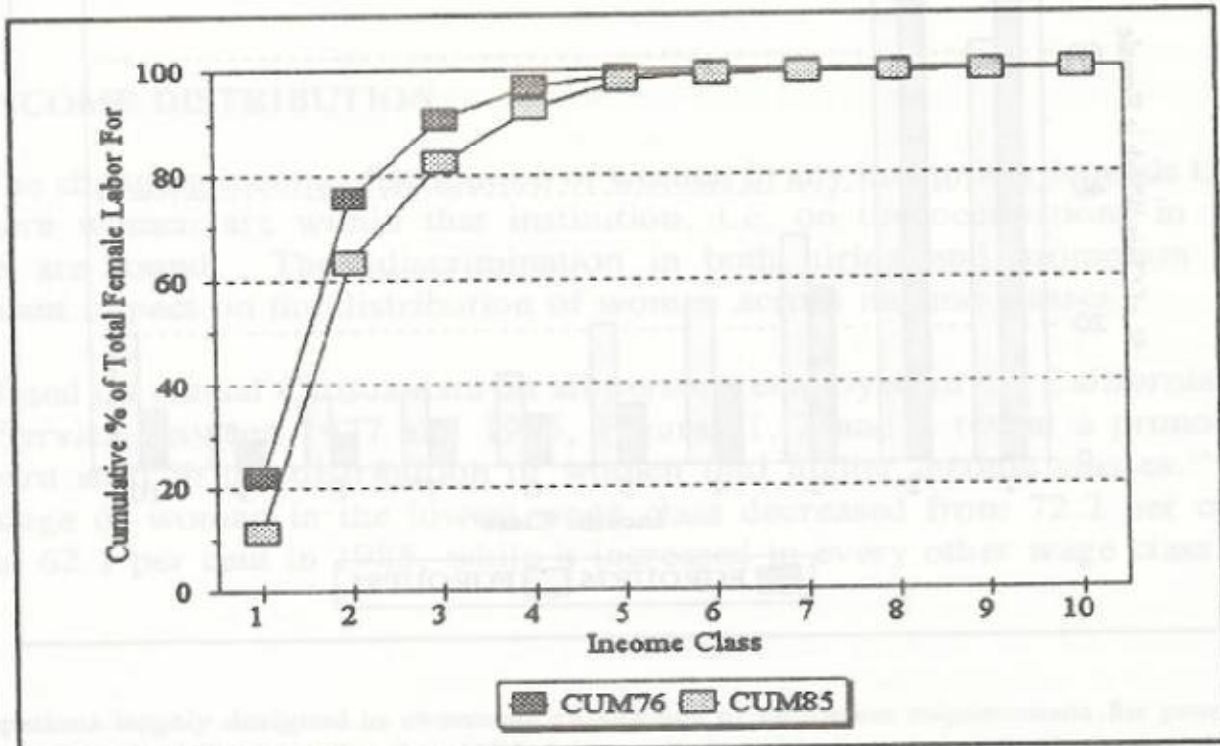
**FIGURE 1**  
**Sex Composition by Income Class – 1976, 1985**  
 (percent of class which is female)



**FIGURE 2**  
**Distribution of Women by Income Class – 1976, 1985**  
 (percent of total female labor force in each class)



**FIGURE 3**  
**Cumulative Percent of Total Female Labor Force By Income Class – 1976, 1985**



### 3. OCCUPATIONAL MOBILITY

In the following, we weigh evidence concerning patterns of upward mobility to evaluate whether the female-dominated clerical occupations were "segmented" from other occupations. We examine how the probability of an individual becoming mobile changed as his/her tenure in the State increased and how that probability was affected by the use of "bridging classes" and by other covariates.

#### 3.1. Data

The data studied cover all State Civil Service employees beginning work after September 1, 1976, for whom complete employment histories existed as of October 1985, or approximately 160,000 individuals.<sup>15</sup> Over four thousand occupational classes exist for the State of California. We employed the State Personnel Board's (SPB) twenty occupational categories to group these four thousand classes into categories reflecting functional occupational groupings. We focused on female-dominated and male-dominated, manual starting occupations<sup>16</sup> (hereafter we will refer to these starting occupations of interest as "F-D" and "M-D-M"). The subpopulations for which entire employment histories existed for the above named F-D and M-D-M occupational groups were of 25,757 and 35,548 individuals, respectively.

In defining mobility, our objective was to impose a simple but stringent standard that would ensure that the observed levels and patterns of mobility corresponded to major "upward" occupational transitions and excluded lateral moves of ambiguous monetary or status value. Our two groups of interest -- female-dominated clerical and male-dominated, manual occupations -- are at the bottom of the State's occupational hierarchy with respect to pay levels, status and responsibility. Movement out of these two occupational groups is rarely lateral, i.e. to female-dominated occupations from the M-D-M group or to the male-dominated, manual occupations from the F-D group.<sup>17</sup> In fact, less than six percent of mobility is lateral to the other sex-dominated group.<sup>18</sup> Consequently, for our two focal groups of starting occupations, "out" means "up"; an individual's exit from his/her starting occupation almost always implies upward mobility.

<sup>15</sup> Computerization of employment records was complete after mid-1976. Hence, starting occupations were lacking for individuals beginning State service prior to that time.

<sup>16</sup> The former consisted of SPB groups 01 and 02, the clerical and supervisory clerical occupations. The latter consisted of SPB groups 03, 04, 05, and 19, or, respectively, semi-skilled, crafts and trades, supervisory crafts and trades, and laborers.

<sup>17</sup> This was carefully checked by analyzing the frequency of destinations using the disaggregated SPB codes. Most mobility was into professional, sub-professional/technical, and non-supervisory administrative staff (SPB 06, 08, 14).

<sup>18</sup> Such lateral mobility from one sex-dominated group to the other may itself be considered "significant" though not strictly "upward" mobility.



Hence, we formulated our central definition of upward mobility as any movement out of the starting occupational group.<sup>19</sup>

### 3.2. Methods and Results

The evaluation addresses four questions. First, what is the level and pattern of mobility for workers beginning State Service in the F-D occupations? Second, how does mobility compare for individuals starting in F-D occupations versus for those starting in M-D-M occupations? Third, what is the impact of "bridging classes" and other covariates on mobility?

We first examine mobility patterns using separate Ordinary Least Squares (OLS) estimates for mobility out of F-D and M-D-M occupations. We then estimate Survival functions for mobility out of these starting occupations and test for the differences in mobility patterns for the two groups. Finally, we address the third question concerning the impact of "bridging classes" and other covariates of mobility by estimating hazard functions, focusing on the determinants of mobility out of F-D occupations.

#### 3.2.1. OLS Regression Estimates

Information was not available on schooling or true labor market experience.<sup>20</sup> To the extent that these omitted variables might be correlated with included variables, such as tenure and age, biased estimates could result. Estimating separately for the two sex-dominated starting occupational groups slightly reduces such bias, since individuals are more homogeneous within groups than across them.

We estimated the probability of becoming mobile, "p," for a sub-group of State employees who started in a given occupational group (F-D or M-D-M). OLS regressions were used to estimate the following equation for the  $i^{\text{th}}$  individual in the  $j^{\text{th}}$  starting occupation:

$$p_{ij} = a + b*T_{ij} + c*T_{ij}^2 + d*AGE_{ij} + V_{ij}$$

<sup>19</sup> The resulting dependent variable used in the various regressions was a binomial indicator variable taking value one if the individual ever left his/her occupational group of origin. Issues of "censorship" were addressed by estimating Survival Functions in addition to OLS estimates.

<sup>20</sup> The unavailability of the experience variable and consequent use of age (or age-schooling) is frequently cited as responsible for the lower estimated returns to other personal characteristics for women. This view argues that women are more prone to exiting the labor force, for longer durations than men – and hence the experience proxy on average overstates true experience for women. We do not rely in any way upon this interpretation, and our efforts to minimize bias which could arise from the omission of true experience is entirely independent therefrom.

where T is tenure in the state system<sup>21</sup>, AGE is the age of an individual at the beginning of his/her employment in the State, and V is an error term.

The results are plotted below. These plots and the underlying estimates reveal two points. First, mobility out of F-D occupations exceeded mobility out of M-D-M occupations at all levels of tenure, as well as for all sub-groups of M-D-M occupations (see Appendix B). Absolute mobility levels out of F-D occupations exceeded that out of M-D-M occupations by between five to over ten percent.<sup>22</sup> Second, mobility levels out of F-D occupations rose sharply with tenure.

The table below reports the estimates for the OLS regressions:<sup>23</sup>

**TABLE 1**  
**OLS Regressions – probability of becoming**  
**mobile with respect to tenure**

Variable	Female-Dominated Class of Origin	Male-Dominated Class of Origin
TENURE	0.048 (18.8)	0.067 (33.2)
TENURE <sup>2</sup>	-0.0012 (-3.73)	-0.005 (-18.16)
CONSTANT	0.102 (14.15)	0.018 (4.33)

(T-statistics reported in parentheses below coefficients)

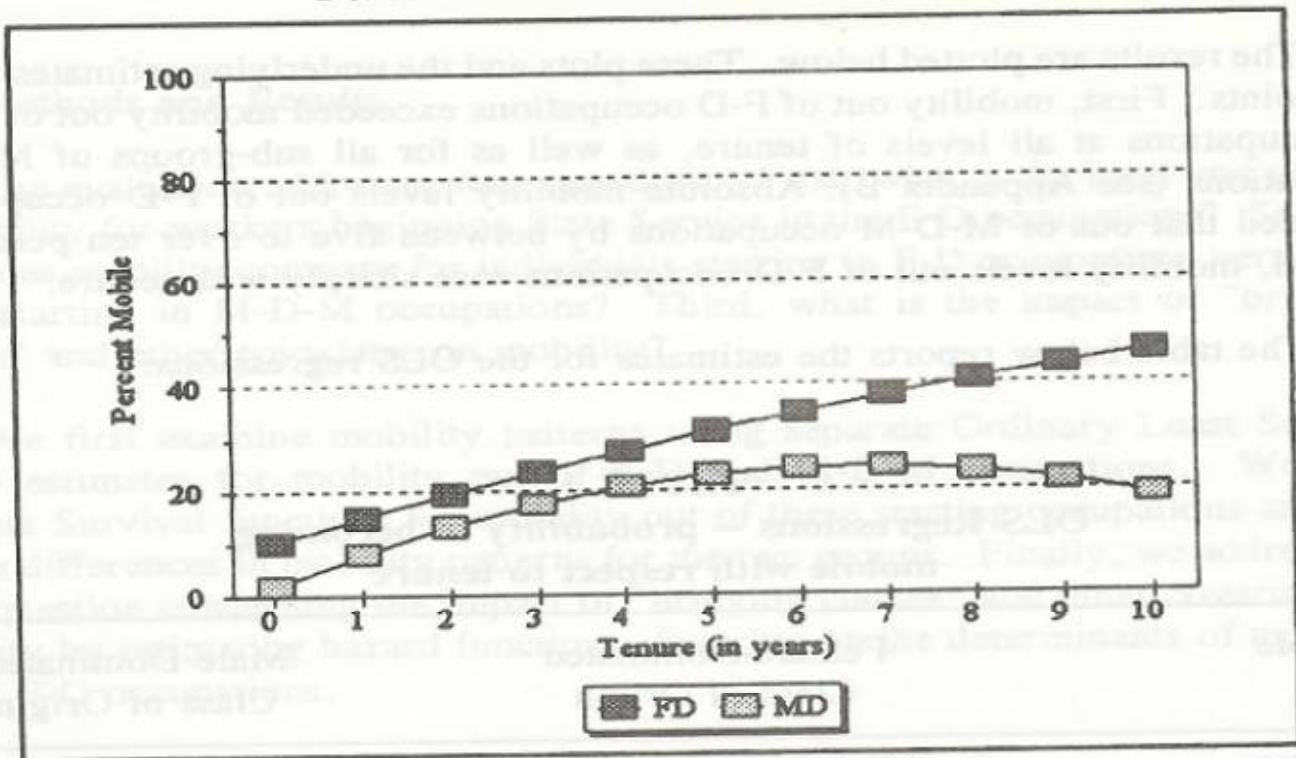
The above estimates are plotted in Figure 4. Similar equations for subpopulations of the M-D-M occupations are plotted in Figures 5, 6, and 7. As evidenced clearly in these figures, the probability of mobility starts and remains much higher for workers in F-D occupations than for workers in M-D-M occupations.

<sup>21</sup> Here we approximate mobility as a function of tenure by a second-order Taylor polynomial expansion. Non-linearities in the survival or hazard function are accounted for in the estimation of Groups II and III which use non-parametric estimation methods.

<sup>22</sup> Mobility out of female-dominated occupations is 1000 per cent higher for the initial months of tenure in State service and drops to a low of approximately 30 per cent higher after four years of tenure. Thereafter the differential in mobility rates grows rapidly.

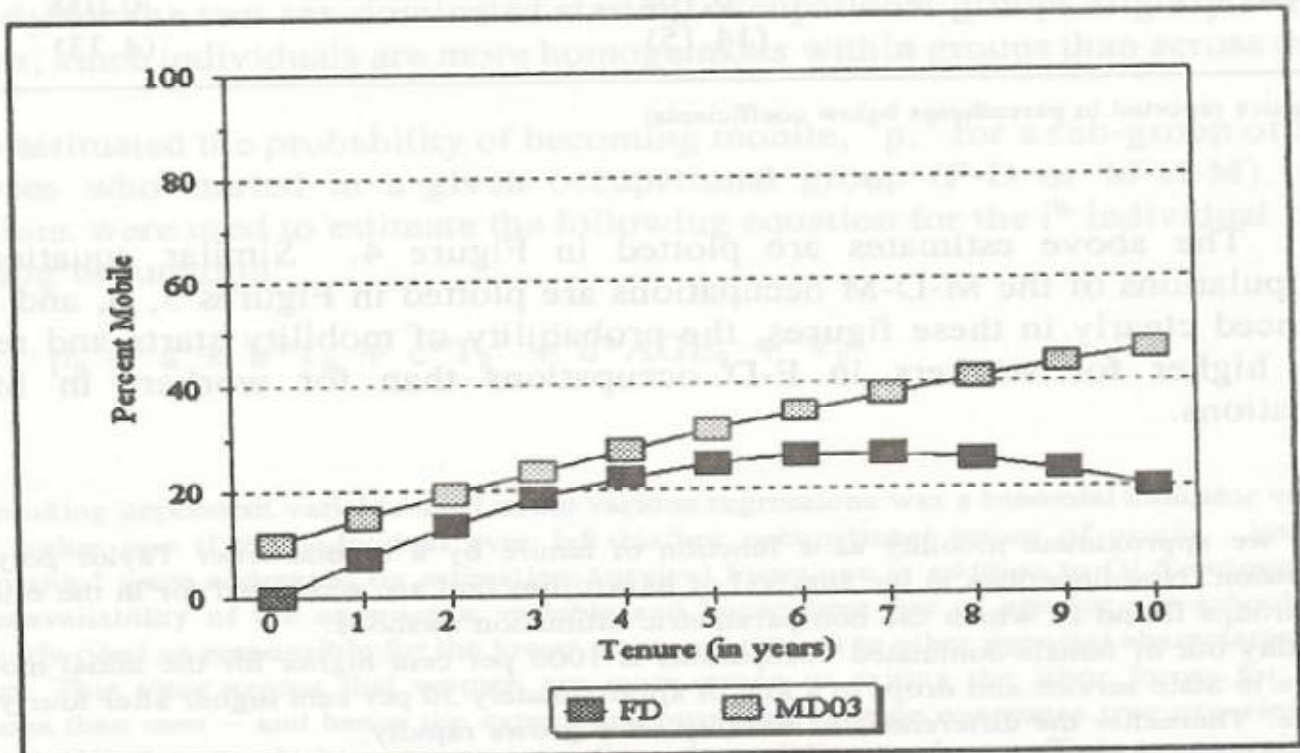
<sup>23</sup> I.e. approximating the underlying tenure function with a second-order Taylor polynomial to capture the non-linearity of the mobility relation which is consistently concave in tenure.

**FIGURE 4**  
**Percent Mobile as Tenure Varies**



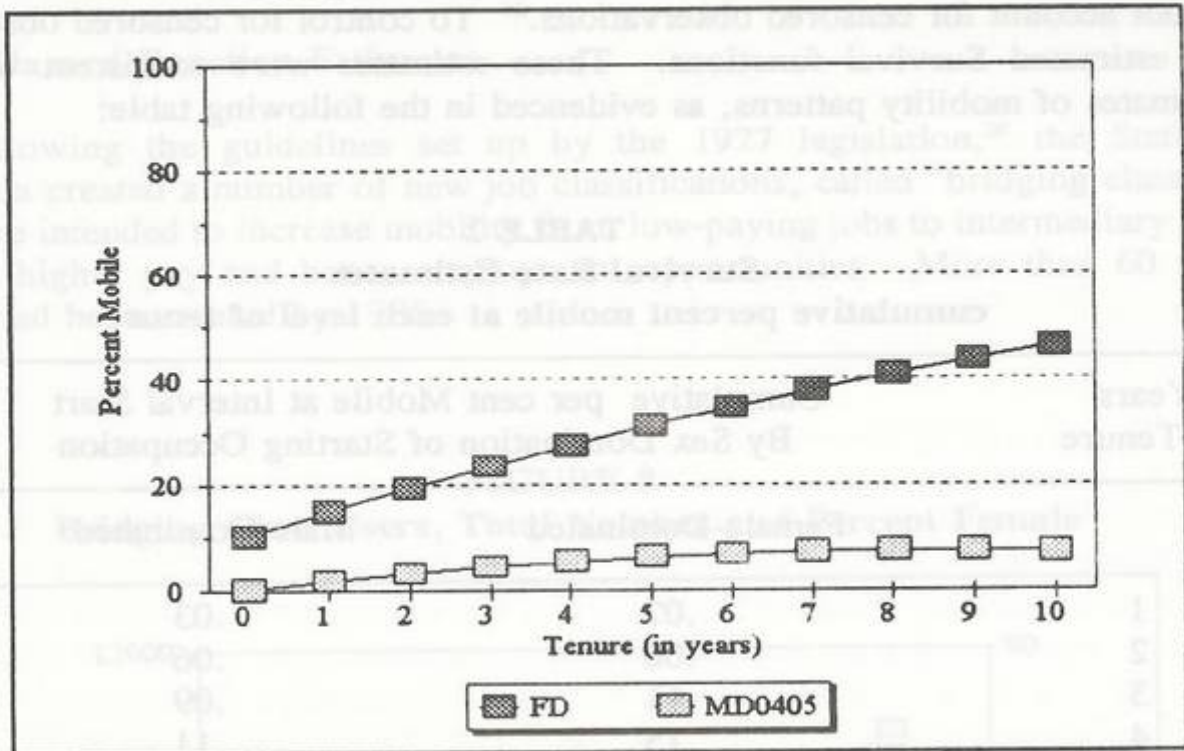
Female: SPB 01, 02. Male: SPB 03, 04, 05, 19  
 (All Male-Dominated, Manual Occupations of Origin)

**FIGURE 5**  
**Percent Mobile as Tenure Varies**



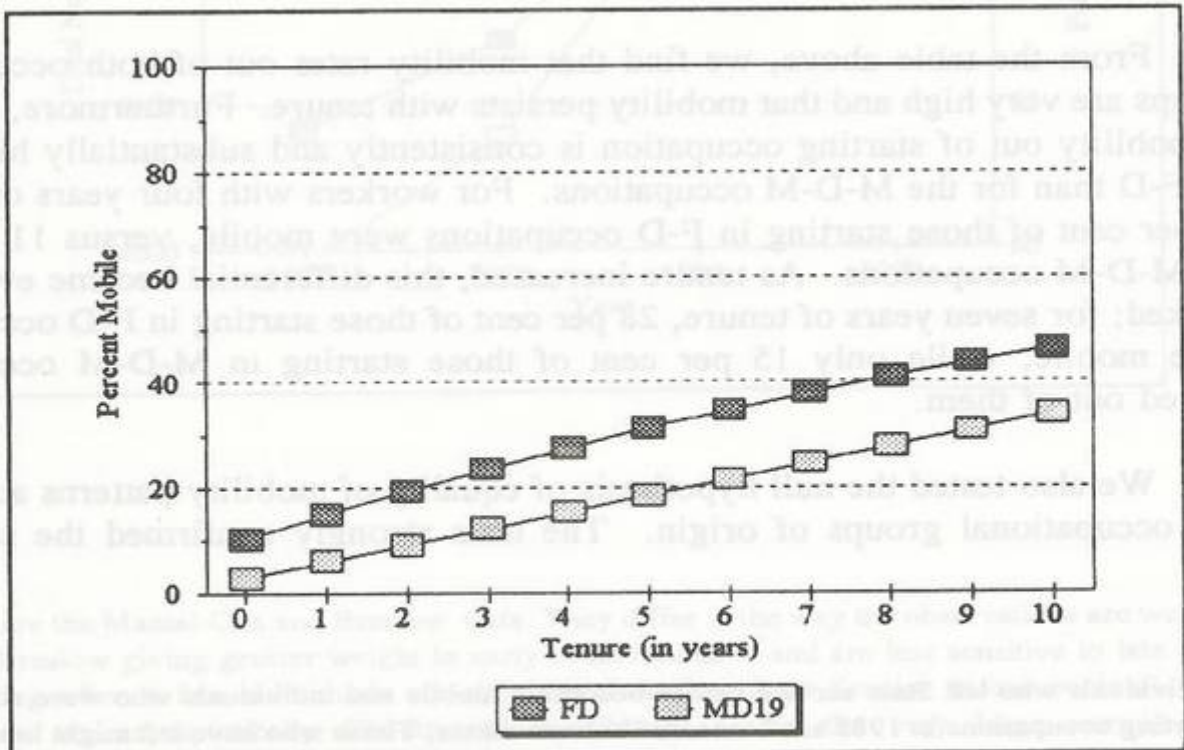
Female: SPB 01, 02. Male: SPB 04, 05

**FIGURE 6**  
**Female Versus Male-Dominated Crafts and Trades Starting Occupations**  
**Percent Mobile as Tenure Varies**



Female: SPB 01, 02. Male: SPB 03

**FIGURE 7**  
**Female Versus Male-Dominated Laborer Stating Occupations**  
**Percent Mobile as Tenure Varies**



Female: SPB 01, 02. Male: SPB 19

### 3.2.2. Survival Functions

The OLS estimates are only crude indicators of mobility patterns in that they do not account for censored observations.<sup>24</sup> To control for censored observations we estimated Survival functions. These estimates were consistent with OLS estimates of mobility patterns, as evidenced in the following table:

TABLE 2  
Survival Rate Estimates  
cumulative percent mobile at each level of tenure

Years of Tenure	Cumulative per cent Mobile at Interval Start By Sex Domination of Starting Occupation	
	Female-Dominated	Male-Dominated
1	.02	.03
2	.06	.06
3	.11	.09
4	.15	.11
5	.19	.13
6	.24	.14
7	.28	.15

From the table above, we find that mobility rates out of both occupational groups are very high and that mobility persists with tenure. Furthermore, the level of mobility out of starting occupation is consistently and substantially higher for the F-D than for the M-D-M occupations. For workers with four years of tenure, 15 per cent of those starting in F-D occupations were mobile, versus 11 per cent for M-D-M occupations. As tenure increased, this differential became even more marked; for seven years of tenure, 28 per cent of those starting in F-D occupations were mobile, while only 15 per cent of those starting in M-D-M occupations moved out of them.

We also tested the null hypothesis of equality of mobility patterns across the two occupational groups of origin. The tests strongly confirmed the statistical

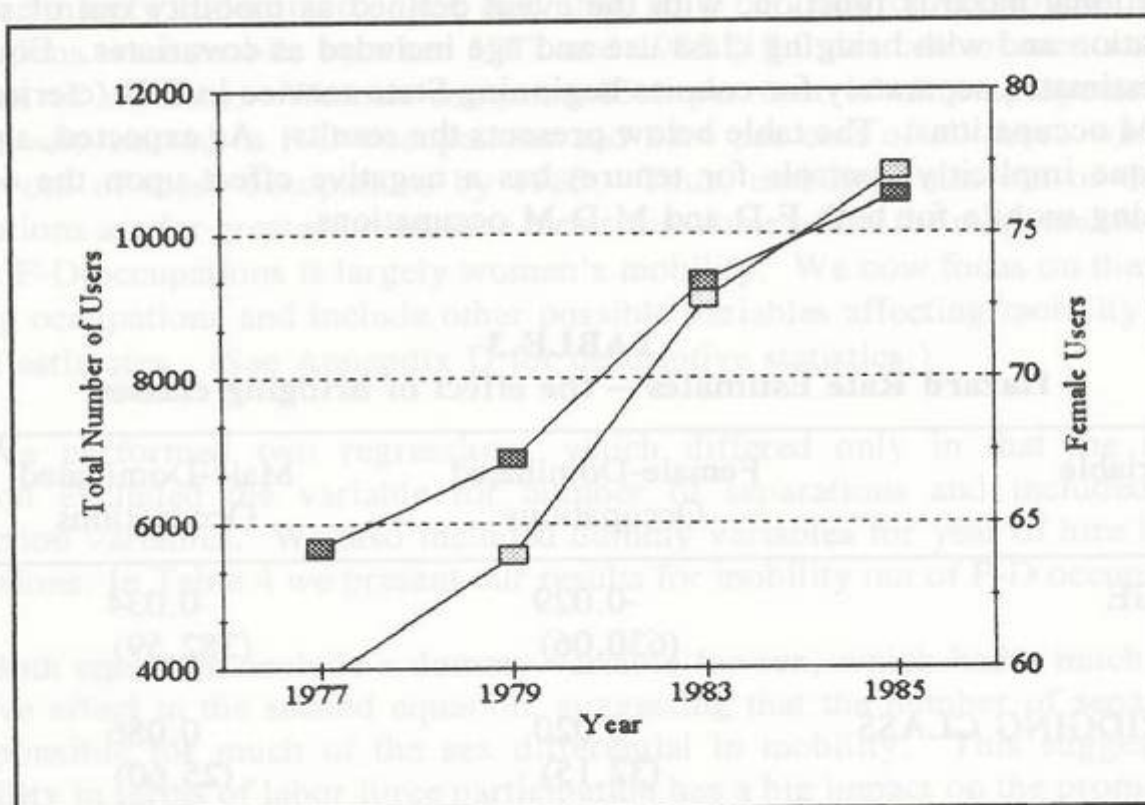
<sup>24</sup> Individuals who left State service before becoming mobile and individuals who were still in their starting occupations in 1985 are "censored" observations. Those who have left might have become mobile had they remained longer, and those still in their starting occupations may become mobile after the time period of this study.

significance of the discussed difference in mobility patterns, where mobility out of the F-D occupations is much higher than mobility out of M-D-M occupations.<sup>25</sup>

### 3.2.3. Hazard Function Estimates

Following the guidelines set up by the 1977 legislation,<sup>26</sup> the State of California created a number of new job classifications, called "bridging classes," which are intended to increase mobility from low-paying jobs to intermediary jobs offering higher pay and better employment opportunities. More than 60 such classes had been created by 1985.

**FIGURE 8**  
**Bridging Class Users, Total Number and Percent Female**



<sup>25</sup> These are the Mantel-Cox and Breslow tests. They differ in the way the observations are weighted – the Breslow giving greater weight to early observations – and are less sensitive to late events occurring when a few individuals are still "alive" (still in State Service in our context). Both statistics are asymptotically Chi-squared distributed. Given the very large sample used, convergence is virtually assured.

<sup>26</sup> Article 4.5, Chapter 7 of the California State Civil Service Act (1977).

Since 1975, a large and growing number of the State's labor force has begun to use bridging classes. As Figure 8 shows, the number of users increased dramatically from 6,000 in December of 1979 to over 10,000 in 1985. As Figure 8 also shows, the users of bridging classes have tended to be predominantly and increasingly female. Bridging class users were 60 per cent female in 1979, and over 75 per cent female in 1985. The total state labor force was 145,000 workers in 1979, rising to approximately 160,000 in 1985. The percentage of the entire labor force using bridging classes was over 6 per cent by 1985. Of the State employees who began work in the F-D occupations between August 31, 1976, and September 1, 1977, 16.4 per cent of those who were mobile by 1985 had used bridging classes (compared to only 0.3 per cent of those who were mobile out of the M-D-M occupations).

Thus bridging classes are widely and increasingly used, are predominantly used by women, and appear to lead to mobility out of F-D occupations. To better examine the effect of bridging classes on mobility, we estimated a Cox proportional hazards function, with the event defined as mobility out of starting occupation and with bridging class use and age included as covariates. Equations were estimated separately for cohorts beginning State service in F-D (clerical) and M-D-M occupations. The table below presents the results. As expected, age (this technique implicitly controls for tenure) has a negative effect upon the odds of becoming mobile for both F-D and M-D-M occupations.

**TABLE 3**  
**Hazard Rate Estimates – the effect of bridging classes**

Variable	Female-Dominated Occupations	Male-Dominated Occupations
AGE	-0.029 (630.06)	-0.034 (382.59)
BRIDGING CLASS	0.020 (32.15)	0.086 (25.60)

(Chi-squares reported in parentheses below coefficients)

The bridging class effect is somewhat surprising. Despite the large percentage of bridging class users who are female and high mobility rates out of F-D occupations, bridging classes appear to have a greater effect on mobility out of M-D-M occupations. Using a bridging class raises the odds of becoming mobile by 8.6 per cent for M-D-M starting occupations, while it increases the likelihood of becoming mobile by only 2 per cent for those starting in F-D occupations.

Since overall mobility rates are higher out of F-D occupations, this suggests either that other covariates are more important for mobility out of F-D occupations or that the effect of bridging classes is underestimated for the F-D occupations. This downward bias is possible because of the huge influx of women into bridging classes at the end of the period covered by our sample.

### 3.2.4. Additional Factors Affecting Mobility

We have seen from OLS, Survival function and hazard rate estimates that mobility rates out of F-D occupations are high both in absolute terms and in comparison to mobility out of M-D-M occupations but that bridging classes appear to have a greater effect on mobility out of the M-D-M occupations.

While both men and women move out of F-D occupations, this movement is overwhelmingly by women. We find that 16.8 per cent of employees in F-D occupations were mobile between 1977 and 1985 (18.7 per cent of men and 16.4 per cent of women). Women comprise 85.1 per cent of all employees in our sample who started in F-D occupations and 83.4 per cent of all those who were mobile out of these occupations by 1985. Thus, mobility rates out of the F-D occupations are far greater in absolute terms for women than for men, and mobility for the F-D occupations is largely women's mobility. We now focus on these F-D starting occupations and include other possible variables affecting mobility in our hazard estimates. (See Appendix D for descriptive statistics.)

We performed two regressions, which differed only in that the second equation excluded the variable for number of separations and included three interaction variables. We also included dummy variables for year of hire in both regressions. In Table 4 we present our results for mobility out of F-D occupations.

Both equations include a dummy variable for sex, which had a much larger negative effect in the second equation, suggesting that the number of separations is responsible for much of the sex differential in mobility. This suggests that instability in terms of labor force participation has a big impact on the promotional success of women, as mentioned earlier in our discussion of the supply-side hypotheses of occupational segregation.

Similarly, we expected the variable for duration of average separation to have a negative effect on the likelihood of becoming mobile. The variable's coefficient, however, was positive in both regressions. This result suggests that when employees take longer leaves from their jobs, perhaps to obtain education, and then return to State service, their likelihood of being promoted increases. If long separations are used for education, then the State's flexible leave policy may be efficient, allowing workers to upgrade their human capital.



**TABLE 4**  
**Hazard Rate Estimates – other covariates of mobility**

Variable	Equation 1	Equation 2
AGE	-0.029 (311.46)	-0.031 (60.58)
SEX	-0.199 (22.96)	-0.533 (15.88)
FULL-TIME START	0.949 (402.56)	0.892 (355.05)
MOVE TO FULL-TIME	1.694 (1012.30)	1.669 (981.47)
NUMBER OF SEPARATIONS	-0.400 (412.50)	
DURATION OF AVERAGE SEP.	0.001 (127.35)	0.001 (22.36)
BRIDGING CLASS USE	-0.851 (10.06)	0.499 (1.21)
SEX-BRIDGING CLASS		-1.612 (8.21)
SEX-AGE		0.009 (3.89)
SEX-DURATION OF AVER. SEP.		-0.0004 (6.84)

(Chi-squares reported in parentheses below coefficients)

The sex coefficient remains negative after controlling for instability (number of separations and average duration of separation). This suggests that either some discrimination exists or we have omitted variables (such as schooling) which are important to the mobility of women out of F-D occupations. However, the big drop from adding the number of separations suggests the omission of important worker characteristics.

Another interesting, and surprising, result is the positive coefficient for the sex-age interaction variable in Equation 2, showing that older women are more likely to be mobile. This may be because they have gained experience and/or proven their abilities and attachment to the labor market. This latter is consistent with the findings of Nkomo and Cox and Sagaria, where women need to overcome statistical discrimination by finding ways of conveying information on their productivity and stability as employees. Here, however, in contrast to the Nkomo and Cox and Sagaria findings, the systematic reviews and information flows of government bureaucracy are perhaps more likely than personal contacts to improve information flows and mobility.

Both equations also include dummy variables for full-time start and moving from part-time to full-time. Over 58 per cent of those employed in F-D occupations in our sample began employment as full-time workers. Another 2.3 per cent began as permanent part-time employees, and the remaining 39.3 per cent were employed as either seasonal, temporary or intermittent employees. A dummy variable for part-time starts was insignificant in our regressions, suggesting that employees are not penalized for beginning employment in the State as part-time employees. Moreover, the extremely large coefficient for movement to full-time suggests that there were ample opportunities for advancement for the group of employees who started part-time.

The reversal of the bridging class coefficient from our earlier regressions has two interpretations. Either bridging classes are not effective in increasing mobility out of F-D occupations, or they do increase mobility, but women have not yet moved out of them. In other words, the estimated coefficient is biased downward. (See previous discussion.)

Estimated hazard functions for the three subpopulations of M-D-M occupations find that age has a similar effect across all five regressions. Sex is insignificant for mobility out of M-D-M occupations, either because there is no sex difference or because there are too few female observations. Movement to full-time has a big effect on mobility for all regressions, and the duration of average separations and sex-age interaction are positive for the semi-skilled subpopulations, as they were in the regressions for the F-D occupations.

Thus, movement to full time and taking longer leaves aid mobility for all employees in these two occupational groups. Longer leaves have a larger effect on men than on women, as evidenced in the negative coefficient for the sex-duration of average separation interaction variable. State policies are not targeted specifically to women and do not only affect women, yet mobility is higher out of F-D occupations, implying that either it is easier to get out of these occupations, or more employees want to. The sex coefficient remains negative, but most of the employees moving out of F-D occupations are women, so women are mobile even if policies are not targeted to them.

#### 4. CONCLUSIONS

We asked several questions at the beginning of this paper: Does the State of California reproduce the occupational segregation found in the private sector, or has it been effective in counteracting such segregation? Are there female-dominated, clerical occupations in the State of California which are "ghettoes" for the women employed in them, or do women in these occupations have access to "better" jobs? Are women allowed to move out of the female-dominated occupations; and are workers allowed to take leave and advance upon their return?

Sections 2 and 3 provide evidence on occupational segregation and show that the average female employee in the State of California experienced an increase in real living standards between 1977 and 1985 and that levels of promotion out of female-dominated occupations were very high.

Section 3 showed that the flexibility of state policies - allowing workers to move from part to full-time, and to take leaves to increase their educations - contributed significantly to occupational mobility within the state, and that this had an especially large impact on women. Though males starting in female-dominated occupations were more mobile, the overall impact of flexible policies allowing upward mobility favored women because mobility out of female dominated occupations was higher than that out of male-dominated occupations. The precise role of Bridging Classes was harder to determine; this may have been because of the accelerating numbers of women moving into Bridging Classes so they had not yet been able to be mobile, or that slots to admit workers from Bridging Classes were becoming clogged up.

Weak job attachment was a major source of low mobility for workers starting in female-dominated occupations. Controlling for the number of separations reduced the measured sex-differential in job mobility by 63 per cent. Surprising, though, workers who had long separations and returned high higher changes of being mobile. This finding underscores the role of mid-career education, and the importance of supporting policies that permit or actively support it. Credits for such education would likely increase the demand for mid-career education and subsequent occupational mobility. Much of women's human capital accumulation may occur later in their lives than for men, supported by our finding here that while older persons were less mobile on average, that older women were more mobile than men.

## APPENDIX A

### GROUP I REGRESSIONS FOR SUB-GROUPS OF MALE-DOMINATED MANUAL OCCUPATIONS

#### SUB-GROUPS OF MALE-DOMINATED, MANUAL CLASSES OF ORIGIN

A. 03: SEMI-SKILLED

B. 04,05: CRAFTS AND TRADES & SUP. CRAFTS AND TRADES

C. 19: LABORERS

#### A. SPB 03: SEMI-SKILLED

VARIABLE	COEFFICIENTS	T-STAT
TENURE	.080	31.9
TENURE <sup>2</sup>	-.006	-17.6
CONSTANT	-.001	-0.2

#### B. SPB 04, 05: CRAFTS AND TRADES & SUP. CRAFTS AND TRADE

VARIABLE	COEFFICIENTS	T-STAT
TENURE	.017	6.8
TENURE <sup>2</sup>	-.001	-3.1
CONSTANT	.0029	.45

#### C. SPB 19: LABORERS

VARIABLE	COEFFICIENTS	T-STAT
TENURE	.064	9.4
TENURE <sup>2</sup>	-.00	-5.0
CONSTANT	.019	1.55

### CHANGING SEX COMPOSITION OF INDIVIDUAL OCCUPATIONS

Several occupations within the State Civil Service have experienced remarkable increases in the percentage of employees who are women. The examples below may be compared to Figure 2 in the text which shows a marked increase in the percent of women in the middle and higher income classes.

#### Women increased

- 1) from approximately 2 percent to about 17 per cent of Corrections Officers,
- 2) from 15 per cent to nearly 60 per cent of Staff Services Managers,
- 3) from 0 per cent to over 6 per cent of Traffic Officers,
- 4) from 2 per cent to 15 per cent of Biologists,
- 5) from 20 per cent to over 30 per cent of Teachers,
- 6) from 0 per cent to between 8 and 10 per cent of Police Officers,
- 7) from 1 per cent to 6 per cent of Assistant Engineers,
- 8) from 12 per cent to 22 per cent of Janitors,
- 9) from .5 per cent to 3 per cent of Associate Engineers.

## APPENDIX C

### BRIDGING CLASSES

Article 4.5 (1977), Chapter 7 of the State Civil Service Act mandates that State agencies and departments create an effective upward mobility program for State employees, including establishing bridging career ladders from sub-professional jobs to professional and managerial jobs

Bridging classes are new job classifications created to link one occupation to another, where previously, the gap was too wide to allow for a path of upward mobility between the two occupations. The link created by the bridging class allows a worker to move from a low-paying job into a position that offers both higher pay and a greater chance for expanded employment opportunities.

A bridging class is created by the State Personnel Board in response to a perceived need on the part of any of a number of people – department managers, employees, the Department of Personnel Administration, the Affirmative Action Officer, the Women's Program Officer, etc. When the case comes before the Personnel Board, information must be presented as to the need for the new classification, the specifications of the bridging class, what classifications it will bridge to, and what is hoped to be accomplished by the creation of the new classification. After the new classification is created, its role does not differ from that of any other occupational classification in terms of the following: In order to promote into the bridging class, an employee must meet the minimum qualifications for the job, must take an examination and be listed on an eligibility list, and must wait until a promotional opportunity becomes available and interview for the position.

Bridging classes have been in existence for a number of years but were not broadly utilized until the inception of the State's upward mobility program, mandated by the California State Legislature in 1977.

## APPENDIX D

### VARIABLE DEFINITION AND BASIC STATISTICS

Variable	Mean	Standard Deviation
<b>AGE in years</b>	31.86	11.36
<b>SEX 0 = male 1 = female</b>	0.85	0.36
<b>FULL-TIME START</b>	0.58	0.49
<b>MOVE TO FULL-TIME</b>	0.07	0.25
<b>NUMBER OF SEPARATIONS</b>	0.50	1.03
<b>DURATION OF AVER. SEP.</b>	59.70	226.70
<b>BRIDGING CLASS USE</b>	0.01	0.09

- BOSE, CHRISTINE E. (1973): *Jobs and Gender: Sex and Occupational Prestige*. Principal Investigator Peter H. Rossi. Baltimore: Center for Metropolitan Planning and Research, The John Hopkins University.
- GRUSKY, DAVID B. and THOMAS A. DIPRETE (1990): "Recent Trends in the Process of Stratification," *Demography*, Vol.27, 617.
- HARTMANN, HEIDI I. and BARBARA F. RESKIN (1986): *Women's Work, Men's Work: Sex Segregation on the Job*. Washington, D.C.: National Academy Press.
- JOHNSON, GEORGE and GARY SOLON (1986): "Estimates of the Direct Effects of Comparable Worth Policy," *The American Economic Review*, Vol. 76, 1117-1125.
- LEONARD, JONATHAN S. (1984): "The Impact of Affirmative Action on Employment," *Journal of Labor Economics*, Vol. 2, 439.
- LOPREST, PAMELA J. (1992): "Gender Differences in Wage Growth and Job Mobility," *The American Economic Review*, Vol. 82, 526-532.
- NKOMO, STELLA M. and TAYLOR COX, Jr., (1989): "Gender Differences in the Upward Mobility of Black Managers: Double Whammy or Double Advantage?" *Sex Roles* 21, 825.
- POLACHEK, SOLOMON W. (1981): "Occupational Self-Selection: A Human Capital Approach to Sex Differences in Occupational Structure," *Review of Economics and Statistics*, Vol. 63, 60-69.
- SAGARIA, MARY ANN D. (1981): "Administrative Mobility and Gender: Patterns and Processes in Higher Education," *Journal of Higher Education*, Vol. 59, 305.
- TAVRIS, CAROL and CAROLE WADE (1984): *The Longest War: Sex Differences in Perspective*. 2nd Edition. New York: Harcourt Brace Jovanovich College Publishers.
- WOLF, WENDY C. and RACHEL A. ROSENFELD (1984): "Sex Structure of Occupations and Job Mobility," *Social Forces*, Vol. 823.