

New evidence on male-female differences in search

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Abstract:

In this paper we reconsider the question whether women search longer than men and extend the analysis by taking differences in age into account. We use a large sample of displaced men and women from German register data that covers all industrial sectors. We follow workers aged 20 to 50 throughout the period 1975 to 2001. We focus on the analysis of the length of displacement and adopt a differences-in-differences approach where we compare men and women, before and after displacement. The main findings are that young women search longer than comparable men and that these differences decline with age or even convert. These findings are in line with an opportunity cost model where the reservation wage varies with age through fertility, and not consistent with an equilibrium search model with discrimination.

I. Introduction

It has been demonstrated that mobility among young workers is an important source of wage growth (Topel and Ward, 1992; von Wachter and Bender, 2006) and that differences in mobility are partly related to the gender wage gap (Loprest, 1992). The estimation of gender differences in mobility and its effects on wages is complicated primarily because of non-random selection effects. Those workers for whom we observe a job change are a composite of voluntary and involuntary job moves and, in addition, one usually does not know for how long they have been searching. Therefore, in a few studies displaced workers through closure have been used to analyze gender differences in search.

This approach assumes that displacement is unexpected and not driven by individual behavior. (Jacobsen et al 1992) Therefore the comparison between men and women in the length of displacement is a less biased measure of differential outcomes than from population samples. Furthermore, the sample of women before and after displacement may be less affected by non-random selection into work which again makes the comparison a more reliable estimate. This literature suggests that women search longer and experience no significant difference (or lower) wage changes. (Crossley, et al. 1994, Abbring et al 2002) In this study we reconsider the question whether women after displacement through the closure of an establishment search longer than comparably men. A novel aspect is that we investigate whether this difference varies with age.

Empirical research on gender differences in search provides further evidence on sources of the gender wage gap. Theoretically, gender differences in search can be explained by differences in reservation wages that are dependent on search cost and the value of home production. If women have better outside the labor market options,

through a higher utility from raising children, for example, then this could explain that women will search longer.¹ In fact one could expand on this argument and specify that it should then be younger women that have a relatively higher reservation wage than men and it should converge with age to the one of men. This can be argued in view of an opportunity cost model. An alternative hypothesis is that differences are explained by discriminatory behavior of establishments in an equilibrium search model (Black, 1995). Then differences are expected to be constant between men and women and independent of age.

In our study we use a large sample of displaced men and women from German register data, the IABS, which covers all industrial sectors. We follow workers aged 20 to 50 throughout the period 1975 to 2001. We focus on the analysis of the length of displacement and adopt a differences-in-differences estimation technique where we compare men and women, before and after displacement. The main findings are that young women search longer than comparable men and that these differences decline with age or even convert. These findings are in line with an opportunity cost model where the reservation wage varies with age through fertility, and not consistent with an equilibrium search model with discrimination.

The remainder of the paper is organized as follows. Section two gives an overview of previous studies on gender differences in search. Section three describes the data and summary statistics. Section four presents empirical results. Section four is a discussion of the results and section five concludes.

¹ This untested assumption is in fact a standard assumption made in the literature and is often crucial to generate gender differences. An example for a model of gender differences in wages that is driven by this assumption is the influential paper by Lazear and Rosen (1992).

II. Previous Empirical Literature on Male/Female Differences in Search

Much of the early empirical work examining gender differences in search and wages has focused on displaced workers. These studies found that women tend to experience longer spells of displacement (Podgursky and Swaim, 1987) and greater wage-loss due to displacement (Manning, 1987; Podgursky and Swaim, 1987; and Crossley et al., 1994). Both Manning (1987) and Crossley et al. (1994) examine both wage growth prior to displacement as well as wage change after displacement. Since both studies find that wage levels and growth prior to displacement are similar for men and women they conclude that differential accumulation of specific human capital cannot account for the differences in wage loss from displacement. Instead the differences appear to be due to differences in search behavior between men and women (See Crossley et al., 1994).

More recent empirical research continues to find that women experience longer spells of displacement (Farber, 1997; Abbring et al., 2002; Kletzer and Fairlie, 2003). However, unlike the earlier literature, the more recent studies find that men and women experience a similar loss in wages after displacement.

In related work Bowlus (1997) estimates an equilibrium search model with three states, employment, unemployment, and out of the labor force. She examines how differences between men and women in the probability of occupying one of these states affect the male/female wage gap. She finds that gender differences in labor market behavior accounts for 20-30 percent of the male/female wage differential, with the remaining difference attributable to productivity differentials which include the effects of labor market discrimination.

The consistent finding in the previous literature that women experience longer spells of displacement is consistent with our alternative theory that women will

experience longer spells of displacement due to more valuable non-market opportunities. In contrast, the Black (1995) model makes no prediction concerning how search length should differ between men and women. However, no study has examined life-cycle changes in the differential search behavior between men and women.

III. The Data

We focus on West-Germany and extract a sample of displaced workers with completed education from the IAB employment sample (IABS)² which includes in our version supplemented information on the establishment.³ We have data for the period 1975 to 2001. Our sample covers workers in jobs where they pay social security contributions, which is about 80 per cent of the total work force. Our sample contains detailed work history variables as well as some information on establishment characteristics. Flow variables are generated from the entire data source starting in 1975 ensuring best measures of work history.

A. Definition and identification of closing establishments and displaced workers

We identify displaced workers through the closure of an establishment. The year of closure of the establishment is generated by the IAB from the exact establishment size variable (which has been deleted from the scientific use file accessible to us). Every June of a year the establishment identifier and the size of the establishment is observed and if the identifier disappears this is labeled as a closure. This information has been transformed into a variable that contains the year of

² IABS abbreviates *Institut für Arbeitsmarkt und Berufsforschung* Sample.

³ This is information on the year of closure in particular. For further details see appendix I.

establishment closure which we use for selection of our sample. This information is available for every year from 1975 to 2001.

As has been discussed in some places of the literature (Eliason and Storrie, JOLE 2006) the way closures are identified in register data may lead to false establishment deaths. One problem is that some establishments are part of a multi establishment, which is usually not observed in the register data, or that small establishments change owner or change establishment identifier for other reasons. The latter may apply particularly to small establishments. To reduce these problems, we drop workers who were displaced from a small establishment that employed 5 workers or less.

From the IABS we select workers who have been displaced at least once. Workers may experience multiple displacement events and we include in our sample up to the fourth displacement. We keep also a control variable for the total number of displacement events for each individual. Around 20 percent of workers in our sample have more than one displacement. For further details see table B.1. To ensure we include highly attached workers we keep only jobs where the employee works at least half of full time hours (that is 37 hours) or full time. Hence, we keep only women who are highly attached in the sense that they work the main part of the working week. This applies both to the pre displacement job as well as to the post displacement job. We keep only workers for whom we observe at least 4 years of data after the displacement event. Hence 1997 is the last year of displacement in our data. The sample contains censored spells and some events where the length of duration is extremely long. We choose 104 weeks as the censoring point and, hence, do not use any job found after that period. For censored spells the length of displacement is calculated as the time elapsed from year of displacement until 2001.

Education is measured in three levels: unskilled, skilled, and graduates. Unskilled are those with one year of vocational training or less. Skilled workers are defined as those who have undertaken establishment based vocational training within the German dual system apprenticeship program and 10 years of schooling (intermediate schooling degree). Vocational training program combine school and work-based education. In West-Germany this has been the main route into the labor market. Since the 1970's 60-70 percent of each birth cohort fall into this category.⁴ Graduates are those with 13 or 12 years of schooling and who achieved a technical college degree, 3 to 4 years, or a university degree, 4-6 years. Graduates are underrepresented in our sample, mainly because we do not cover the private sector and self-employed.

For approximately 50 percent of the sample we can generate precise actual experience since we observe the complete work history. We generate that by accumulating the duration of each work spell, given by the starting and ending date in the original data. For those workers observed from the beginning of their work history this gives the exact work experience. We assume that graduates are not older than 23 in 1975, and everybody else is not older than 16 in 1975. Especially, for the latter group this is a precise procedure. For the older workers for which we do not observe work histories from the beginning, we generate actual work experience for the period 1975 to 2001 as they appear in the data. As a correction of the initial value in 1975 we take the age in the first spell minus 6 years of pre-school periods minus years of education. Here we assume 9 years for the unskilled/low skilled educational level, 11 years for the medium level and 16 years for graduate education. Since we can identify establishment to establishment mobility in the data, we can also generate tenure,

⁴We cannot distinguish in the data whether individuals graduate after 9 or 10 years of schooling from the Hauptschule or Realschule.

which we measure in weeks. Likewise, we can measure mobility between occupations and sectors, also related to establishment closure. Wages are measured as daily wages and are adjusted by the CPI index. The base year is 1995. In addition to establishment size we have information on the skill composition of the establishment.

By contrast to other studies we have a large sample that covers all industries. In their study on gender difference in search, Crossley et al. (1994) relies on 21 firms for which they have data on 2700 workers. But also in the displacement literature generally studies often rely on data for manufacturing or small samples.

B. The sample retained for analysis and summary statistics

The sample of displaced workers that we select from the IABS data contains 64693 observations. Since we are interested in the analysis of search behavior we first exclude job to job transitions. This rule excludes 36 847 observations (56.9 per cent). We confine our sample to those who were 20 to 50 years old at displacement. Our final sample contains 17 398 observations for 14 043 individuals. The selection of the sample is summarized in table B.2.

Table 1 here

In Table 1 we present summary statistics for our entire sample of displaced workers as well as the sample of first displacements. 30 percent of individuals in our sample are women. On average workers are 33 years old, the youngest in our sample are 20 and the oldest are 50, since we exclude older workers. Women are slightly younger than men. The data confirms the typical finding that men work more continuously than women. By selection of displaced workers we hope to select

workers who are highly attached to the labor market, and hence effects through labor supply are less likely to bias results regarding search. Men in our sample have accumulated 14.8 years of work experience, and women 12.8 years of work experience. That is approximately 10 per cent less. Also we observe for an extremely large fraction a job after displacement. If we disregard the censoring point which we set to 104 weeks, more than 98 per cent of men and more than 83 per cent of women are observed in a post displacement job. In more detail, for 13.38 per cent of observations we do not observe a post displacement job in the raw data. That is 11 per cent for men and 18 per cent for women. We choose as the censoring point 104 weeks. As a result 23.81 per cent of observations are censored; hence without observe a new job after displacement. That is 19 per cent for men and 38 per cent for women.

We observe composition differences in skill between men and women. Relatively more displaced women than men in our sample are unskilled. The largest fraction of displaced workers is skilled, which is also by far the largest group in the population and therefore not surprising. Measuring the male-female wage differential in the last observation before displacement, it is approximately 34 percent in terms of differences in mean logarithmic full time wages. Full time work is 37.5 hours per week or more. Including part time work (more than half the hours of full time work) increases the differential to 40 percent.

Women search at the mean 72 weeks longer than men in our sample. Since our sample includes censored spells, this statistic may however be biased. The difference in wages before and after displacement shows that on average men experience 1 percent real wage loss which is the same for women. As a measure of the quality of the new match we calculate the average tenure in the first post displacement job,

which includes censored observations. It shows that women have higher tenure which could be interpreted such that they end in better matches.

Furthermore, we find the typical segregation of women and men between part and full time jobs. Virtually all men work full time, while 83.3 per cent of women do so before the displacement. A substantial fraction of women changes to part time work afterwards. Since we focus on workers who are highly attached to the labor market and exclude those working less than 18.5 hours per week, it is consistent that we measure a slightly lower fraction of part time workers than aggregate statistics for Germany. Aggregate national statistics show about 29 percent of all women work part time during the recent years. This fraction has however been much lower during the 1980s.

Workers in our sample get displaced from establishment with approximately 30 employees at the mean. Interestingly, those establishments have a high fraction of unskilled workers, which is at the mean actually larger than the fraction skilled workers.

Based on simple means our data suggest that women search longer than men. This is confirmed when we look at the simple unconditional Kaplan-Meier survival estimates. The line for women lies strictly above the line for men.

Figure 1 here

The focus of our paper is to investigate to what extent the difference in the length of displacement differs by sex and age. It is crucial to have enough heterogeneity in age within and between groups (that is men and women). Given the sample size the most detailed age brackets we can also use in the following regression

analysis and the distribution are shown in Table 2. We see that relatively more women than men younger than 28 are in the sample. At older age the distributions become again more similar.

Table 2 here

Before turning to the duration analysis, we want to get an idea how representative our sample of displaced workers is in view of wages and distribution across sectors. This however is difficult to infer particularly for women. Our comparison is all workers who are highly attached in the sense that they work more than half the hours of full time work hours, and are observed in work. We therefore extract a sample of 20 to 50 year old from the total IABS scientific use file, excluding agricultural sector, excluding part time workers with hours less than half the hours of full time work. Comparison of distributions both for men and women is a test to what extent the support of the distributions is the same. Figure 2 shows that distribution of wages for men. While the shape and support of the distributions are very similar, wages of the population are slightly higher than those of displaced workers. Also the top coding of the register data are very striking in the population sample distribution, but visible at all in our sample of displaced workers. Similarly, also for women, figure 3, we see that displaced women have relatively higher wages. But this is particularly true above the mean. At the lower end of the distribution wages are much more similar.

Figure 2 and 3 here

Turning to the comparison of the distribution across sectors, we find differences. *How should we read the difference. Interpret ?*

Table 2 here

IV. Duration analysis of length of displacement

Our analysis of the length of displacement is based on a proportional hazard model. The advantage of this simple duration model is that we do not need to make any distributional assumptions. Our analysis is descriptive in the sense that we do not derive the empirical equation and hence assume ad hoc a flexible specification.

For our purposes the proportional hazard model can be specified as:

$$\lambda(t | x, \beta) = \lambda_0(t) * \phi(x, \beta)$$

Where $\lambda_0(t)$ is the baseline hazard which is the same for any individuals. Differences across individuals are modeled only through the shift of the hazard. The systematic part, $\phi(x, \beta)$ is modeled as:

$$\phi(x, \beta) = \exp(x' \beta)$$

In x we include controls measured at the last spell before displacement. These include work experience, work experience squared, tenure, as well as dummy variables for education group (3 groups), sector (15 groups), occupation (7 groups), full time / part time, and calendar year. The omitted group is skilled workers, in raw material and production of goods sector, and the omitted occupational group is book binder, wrapping material producing worker and paper/cell-producing worker.

Table 3 here

To analyze gender differences in search we choose as a base specification a regression where we add a dummy variable for being female. In Table 3 we show the result that even controlling for differences in worker and establishment characteristics before displacement women search longer. The hazard ratio which is shown here is .72 and significant. It is the proportional change when the variable is increased by one unit, and hence the difference is quite substantial. Noteworthy, this is a mean across age. To investigate whether this difference varies with age we interact the dummy variable for female with the age brackets, as we have defined them in Table 2. For our first estimates we use only the first displacement event of any individual, which increases homogeneity of our sample and decreases sources of bias. Results are also reported in Table 3. For brevity, we only show the results for the interaction terms. Otherwise, our results are in line with general findings that the duration tends to decrease with experience and increase with tenure. We also confirm the expected results that the length of displacement increases with age for men. This can be explained by vintage effects of human capital and technological change. Young new workers have fresh human capital and knowledge of new technologies and are therefore more quickly matched. With regard to sex differences, results in column (2) suggest that it is particularly the women younger than 30 who search longer than comparable men. Between ages 38 and 46 differences are not significant, but become again negative for older women. Finally, we use all displacement events and adjust standard errors for clustering. Now differences are significant and negative for women from 20 to 38 years old. The other patterns are confirmed.

In column (3) the proportional hazard model includes in addition establishment size, which does not change the hazard ratios at all. We also used the

characteristics of the composition of the establishment, which however did not change results either and are therefore not presented here.

IV.1 Birth cohort

Cohort effects may be a confounding factor that can bias the age patterns in length of displacement. As we have found for a cohort of workers age 14-22 in 1979 from the NLSY, it is only young women who search longer than men, and this is explained by life cycle fertility patterns. In order to compare results across these studies, we construct two cohorts and rerun regressions separately for cohorts. We define cohort 1979 similarly to the NSLY and include only workers who were in 1979 24 or younger. Cohort 1984 includes workers 24 or younger in 1984. (Summary statistics in Table A.2) In Table 4 we present the results for each cohort both using only the first displacement event for each individual and all displacement events (that is up to the fourth one).

Table 4 here

The results for the cohort 1984 are most striking and in line with the hypothesis that it is young women who search longer and not women per se. The hazard ratio is less than 1 for those younger than age 39. For women older than 35 it is even above 1 indicating that older women even search shorter. These are however imprecisely estimated. Effects for the cohort 1979 are estimated with much less precision but the point estimates confirm this pattern even more strongly than for the cohort 1984. An explanation why older women search shorter than men could be that those are very career committed women, and a highly selected group.

IV.2 Specification with random fixed effects

Now we make use of multiple displacement events which we observe for the same individual. Our basic model in equation (1) may be complicated by an individual specific effect. Hence the model may be rewritten as:

$$\lambda(t | x, \beta) = \lambda_0(t) * \phi(x, \beta) * \nu_i$$

In order to account for that factor in the error term we make use of the information on multiple displacement events observed for individual i . We assume that the individual specific effect follows a Weibull distribution. In Table A.3 we give an overview how many second and further displacement events are observed.

Table ?? here (TBA)

V. Discussion of the results

What could explain the age variation of gender differences in search? Is it birth of a child, periods without searching for a job or decreased search effort? While the latter two explanations are impossible to investigate with our data any further, the first is a very difficult one.

If it is because women give birth to a child after displacement, then one would expect the distribution of the length of displacement to have a hump at around 40 weeks, the normal duration of a pregnancy. In figures 4 and 5 we show the distribution of the duration of displacement. First we show all uncensored observations and then the distribution when we choose 104 weeks as the censoring point, which does not affect the main finding. We see that men are more likely to have shorter spells, and women are more likely to have longer durations. These empirical

simple graphs show however a smooth distribution of durations. Hence, we do not find humps as the hypothesis is.

Figure 4 to 7 here

We plot the distribution for all women and for women changing to part time in figure 6. Here we include for comparison the distribution for men and censor durations at 104 weeks. Since one can assume (*referene ?*) women have an increased likelihood to work part time when they have young children, this graph is the better comparison. But also here eyeballing this graph does not reveal any irregularity. This is also not due to the censoring of spells as figure 7 shows.

Another indication that it is in fact women who have a child who search longer and drive our results can be derived from wage outcomes. Other studies have found large wage losses in connection with non work periods related to birth for women (Ellwood, et al. (2004), Ejrnes and Kunze (2007), Miller ?? (2005)) Losses from non work for men are usually smaller. In table 5 we therefore run a regression post displacement wages on the length of displacement and an interacted term with the female dummy variable. We find that women earn on average 31 per cent less than men, even after we control for experience and experience squared, education and year effects. While generally the post displacement wage is decreasing the longer the displacement, it decreases not significantly more for women. When we estimate the regressions for men and women separately we even find that women lose less from displacement. The mean effect is 7.2 per cent per year, and 4.8 per cent for women.

Table 5 here

Analyzing post displacement wages in this simple framework may be problematic since unobserved heterogeneity may bias results. In order to address this we turn to wage change within individuals which therefore excludes unobserved individual specific components. Noteworthy, these estimates are conditional on work. Again regressions show that women experience significantly lower wage changes than men. The wage change is negatively related to length of displacement. It is however not related to differential group effects in the displacement duration. Running regressions by sex separately however shows that women lose around 7.2 per cent per year of displacement while men lose only 3.6 per cent. Hence, pooling observations for men and women leads to the contamination of the effects. This indicates that there are differences between men and women when we condition on labor supply, which is we observe that they return a job after displacement within 104 weeks. We, however, cannot tell of what is driving the difference. Is it that some women have children and therefore decrease search effort, or have higher search costs which may lead to acceptance of a worse job-worker match?

VI. Conclusions

TBA

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APPENDIX A:

The IAB is an administrative event history data set. The IABS is a 2 percent random sample drawn from the event history data file of the social security insurance scheme, the employment statistics, collected by the German Federal Bureau of Labour. The fact that the data was collected for administrative purposes is an obvious advantage and makes the data on wages and work histories particularly reliable. The IABS contains all workers in West-Germany who have had at least one employment spell eligible to the social security insurance scheme. As a result, included are all dependent employees in the private sector, i.e. about 80 percent of total employment in West-Germany. Not included are: civil servants, self-employed, unpaid family workers and people who are not eligible for benefits from the social security system⁵

The event history data includes information on every change in working status distinguished into full-time work, part-time work, interruptions and unemployment. Interruptions indicate that the employer-employee relationship is on hold, yet the contract still valid. In this case no wage payments are made. Unemployment is reported in case of receipt of unemployment insurance or unemployment assistance. Every other status that does not fall into either of these categories results in a gap of the individual record of spells reported in the data. As a result interruptions reported for young workers can be used to identify maternity – or parental - leave for young females. For male young workers national service is measured by the same variable. Parental leave, as pointed out, is very exceptional for males. More generally, interruptions may be reported if a worker is absent for a longer period of time due to health problems, for example. We assume that

⁵ For more details see Bender, et al. (1996).

this does not apply in a significant number of cases to young females.

The IABS does contain a variable number of children that is generated on the basis of the tax cards. However, the quality of the variable is very poor for females, in particular, as it has also been admitted by the data producer. Hence, we refrain from using this variable.⁶

The scientific use file of the IABS has been supplemented by information on the establishment for us. The unit is the establishment or plant (?). A caveat is that within municipality/sector several establishments may have one id or several. E.g. a bank owning several branches within municipality may have several establishment ids or one. The supplemented information includes year of closure, year of birth, size, number of workers within establishment unskilled/skilled/graduate.

Appendix B: Tables

Table B.2: Data selection: Numbers of observations

	All	Men	Women
Total sample of closures	88 661	56 118	32 543
Drop if pre_size (of establishment <6 employees)	-23 968		
Sample (100 %)	64693		
Drop if search==0*⁷	-36 847 (56.9 %)		
Drop if pre_age>50	-8 940 (13.8 %)		
Drop if pre_age<20	-1 507 (2.3 %)		
Drop if post_age>60	-10 (.015 %)		
Final data sample (analysis5.dta)			
No. of observations	17 398	12 351	5 038
No. of individuals	14 043	9 747	4 296

⁶ Calculation of mean number of children on the basis of this variable shows that it underestimates the number in an implausible way.

⁷ *Bender, Dustmann, Margolis and Meghir (2002) found that during the period 1980-1990 37 percent of displacements were job to job transitions (no non-employment after displacement).

Table B.1: Summary statistics: Number of displacement events per individual

Total sample (indiv.)	12 351 (9 747)	5 038 (4 296)
First displacement	9 747 (78.91 %)	4 296 (85.27 %)
Second displacement	2 047 (16.5 %)	625 (12.4 %)
Third displacement	463 (3.7 %)	97 (1.9 %)
Fourth displacement	94 (.7 %)	20 (.3 %)
Max no. of displacements	11	8

Table 1: Summary for Sample of Displaced Workers

	Men	Women	men	women
	Entire sample		First displacements	
Age prior to displacement	33.5	32.4	32.9	31.2
Weeks of full time experience prior to displacement	738	668	718	652
Weeks of tenure in job displaced from	70	95	77	97
edu unskilled (per cent)	39.6	47.6	38.9	47.8
edu vocational training (per cent)	58.5	51.2	59.1	50.8
edu graduate (per cent)	1.7	1	1.8	1.2
Post displacement job observed	80.3	65.9	80.1	65.8
Length of displacement in weeks	110	182	116	186
Full time job prior to displacement	99.4	83.3	1	1
Full time job in first post displacement job*	98.1	70.6	1	83.7
Tenure in post displacement job in weeks	88.23	100	92	99.3
Change industry	53	57	54	57
Change occupation	59	61	60	63
Log wage displacement job full time	4.76	4.42	4.76	4.41
Log Wage post displacement job FT	4.75	4.41	4.75	4.4
firm size in pre displacement job	30.7	34.9	32.2	36.7
fraction of unskilled within firm in predisplacement job	59.4	54.2	59.9	53.2
fraction of skilled within firm in predisplacement job	33.6	39.4	33.7	40.3
fraction of graduates within firm in predisplacement job	1.7	1.9	1.7	2
Number of displacement observations	12 351	5038	9565	3581

Note: Sample of displaced workers from IABS 1975-2001. *These means only include non-censored observations.

Table 2: Distribution of displacements across sectors, by gender

Sector	All pre-jobs		Population of workers	
	Men	Women	Men	Women
2 Raw material and production of goods	5.43	2.6	9.55	3.61
3 Investment good: steel and light metal, machinery	8.66	2.88	13.81	3.54
4 Investment goods: steel,cars tools	5.83	6.56	10.38	7.38
5 Consumption goods	8.42	23.8	7.14	7.27
6 Nutrition and luxuray food industry	2.49	4.97	3.06	3.52
7 construction	28.13	2.64	8.92	0.81
8 Ausbaugewerbe	7.59	1.37	4.71	0.89
9 distibutive services: whole sale	6.63	6.98	6.63	5.16
10 distributive services: retail sail	4.53	14.91	5.1	13.4
11 traffic and information	6.18	2.11	6.82	3.71
12 mainly industry related services	8.62	8.27	9.35	12.94
13 mainly private household related services	5.89	16.5	3.66	7.69
14 public services: homes, hospitals, education	0.67	3.6	4.14	15.91
15 Public services: street cleaning, public organsations	0.81	2.52	2.17	7.22
16 Local authority	0.11	0.28	4.56	6.95
Total number of observations (=100 per cent)	12 338	5 030	6,473,838	4,637,728

Note: Sample of displaced workers from IABS 1975-2001.

Table 3: Distribution of Displacement by age (per cent)

Age	Entire Sample (1)	Men (2)	Women (3)
20-22	11.50	10.21	14.73
23-24	8.98	8.48	10.24
25-26	8.40	8.30	8.60
27-28	7.99	7.70	8.50
29-30	7.59	7.80	7.00
31-32	6.98	7.20	6.30
33-34	6.41	6.58	5.90
35-36	5.52	5.80	4.60
37-38	5.84	6.20	4.80
39-40	5.47	5.80	4.60
41-42	5.31	5.30	5.26
43-44	5.34	5.50	4.90
45-46	5.31	5.30	5.20
47-48	4.68	4.90	4.00
49-50	4.60	4.50	4.72

Note: Sample of displaced workers from IABS 1975-2001.

*These means only include non-censored observations.

Table 4: Proportional Hazard Estimation of the Length of Displacement

	1.displacement Sample (1)	1.displacement Sample (2)	1.displacement Sample (3)	Entire Sample (4)
Female	.72 (-11.8)	.86 (-2.4)	.87 (-2.4)	.88 (-2.1)
Female *Age 22-24		.85 (-1.79)	.85 (-1.79)	.84 (-2.1)
Female*Age 25-26		.73 (-3.28)	.73 (-3.27)	.67 (-4.4)
Female*Age 27-28		.75 (-2.99)	.75 (-2.95)	.72 (-3.5)
Female*Age 29-30		.69 (-3.60)	.69 (-3.59)	.68 (-4.)
Female*Age 31-32		.87 (-1.33)	.87 (-1.31)	.86 (-1.6)
Female*Age 33-34		.75 (-2.72)	.75 (-2.71)	.74 (-3.1)
Female*Age 35-36		.83 (-1.54)	.83 (-1.57)	.8 (-2.0)
Female*Age 37-38		.68 (-3.29)	.68 (-3.30)	.74 (-2.8)
Female*Age 39-40		.94 (-0.54)	.93 (-0.58)	.95 (-.4)
Female*Age 41-42		.86 (-1.30)	.86 (-1.31)	.89 (-1.1)
Female*Age 43-44		.82 (-1.70)	.82 (-1.71)	.82 (-1.9)
Female*Age 45-46		.75 (-2.51)	.75 (-2.53)	.76 (-2.7)
Female*Age 47-48		.78 (-1.90)	.78 (-1.90)	.78 (-2.1)
Female*Age 49-50		.76 (-2.15)	.76 (-2.17)	.77 (-2.2)
Dummy for part time	yes	yes	yes	yes
Year dummies	yes	yes	yes	yes
Industry dummies	yes	yes	yes	yes
Occupation dummies	yes	yes	yes	yes
Firm size	no	no	yes	no
Number of Observations	14 018	14 018	14 018	14 018

Note: Sample of displaced workers from IABS 1975-2001. *These means only include non-censored observations

Table 5: Proportional Hazard Estimation of the Length of Displacement, for selected birth cohorts

	1.displacement		1.displacement	
	Sample cohort 1979 (1)	Entire sample cohort 1979 (2)	Sample cohort 1984 (3)	Entire sample cohort 1984 (4)
Female	.72 (-.3.2)	.75 (-2.9)	.86 (-1.8)	.88 (-1.6)
Female *Age 22-24	.817 (-1.2)	.7 (-1.5)	.83 (-1.65)	.82 (-1.8)
Female*Age 25-26	.975 (-0.1)	.89 (-0.6)	.72 (-2.64)	.63 (-4.0)
Female*Age 27-28	.867 (-0.7)	.80 (-1.2)	.63 (-3.43)	.65 (-3.6)
Female*Age 29-30	.662 (-1.9)	.59 (-2.7)	.66 (-2.87)	.68 (-2.9)
Female*Age 31-32	.920 (-0.3)	.78 (-1.2)	.85 (-0.91)	.88 (-0.8)
Female*Age 33-34	.972 (-0.1)	.99 (-0.0)	.82 (-0.93)	.75 (-1.5)
Female*Age 35-36	.806 (-0.8)	.75 (-1.0)	1.1 (0.46)	.98 (-0.0)
Female*Age 37-38	1.29 (1.1)	1.3 (1.6)	.74 (-0.37)	1.4 (0.6)
Female*Age 39-40	1.92 (2.0)	1.8 (2.6)	.	.
Female*Age 41-42	1.30 (0.6)	.79 (-0.5)	.	.
Female*Age 43-44	.	.	.	.
Female*Age 45-46	.	.	.	.
Female*Age 47-48	.	.	.	.
Female*Age 49-50	.	.	.	.
Dummy for part time	yes	yes	yes	yes
Year dummies	yes	yes	yes	yes
Industry dummies	yes	yes	yes	yes
Occupation dummies	yes	yes	yes	yes
No of Observations	2 650	3 259	4 547	5 550

Note: Sample of displaced workers from IABS 1975-2001.

*These means only include non-censored

Table 6: Wage and length of displacement

Variable	post displacement wage	post displacement wage	men post displacement wage	women post displacement wage
female	.31 (-33.1)	-.31 (-26.2)		
months of displacement		-.006 (-8.9)	-.006 (-8.8)	-.004 (-.27)
female *months of displacement		.0 (1.1)		
experience	yes	yes	yes	yes
education	yes	yes	yes	yes
year	yes	yes	yes	yes
R-squared	0.216	0.224	0.117	0.1
No. Observations	9755	9755	7667	2088

Note: Sample of displaced workers from the IABS, only first displacement used for estimation.

Table 7: Wage and length of displacement

Variable	wage growth	wage growth	men wage growth	women wage growth	
female	-0.013	.003 (.25)			
months of displacement		-.004 (-4.3)	-0.003 (-4.2)	-.006 (-3.5)	
female *months of displacement		-.002 (-.1.1)			
experience	yes	yes	yes	yes	
education	yes	yes	yes	yes	
year	yes	yes	yes	yes	
R-squared		0.01	0.014	0.014	0.022
No. Observations		9755	9775	7667	2088

Note: Sample of displaced workers from the IABS, only first displacement used for estimation.

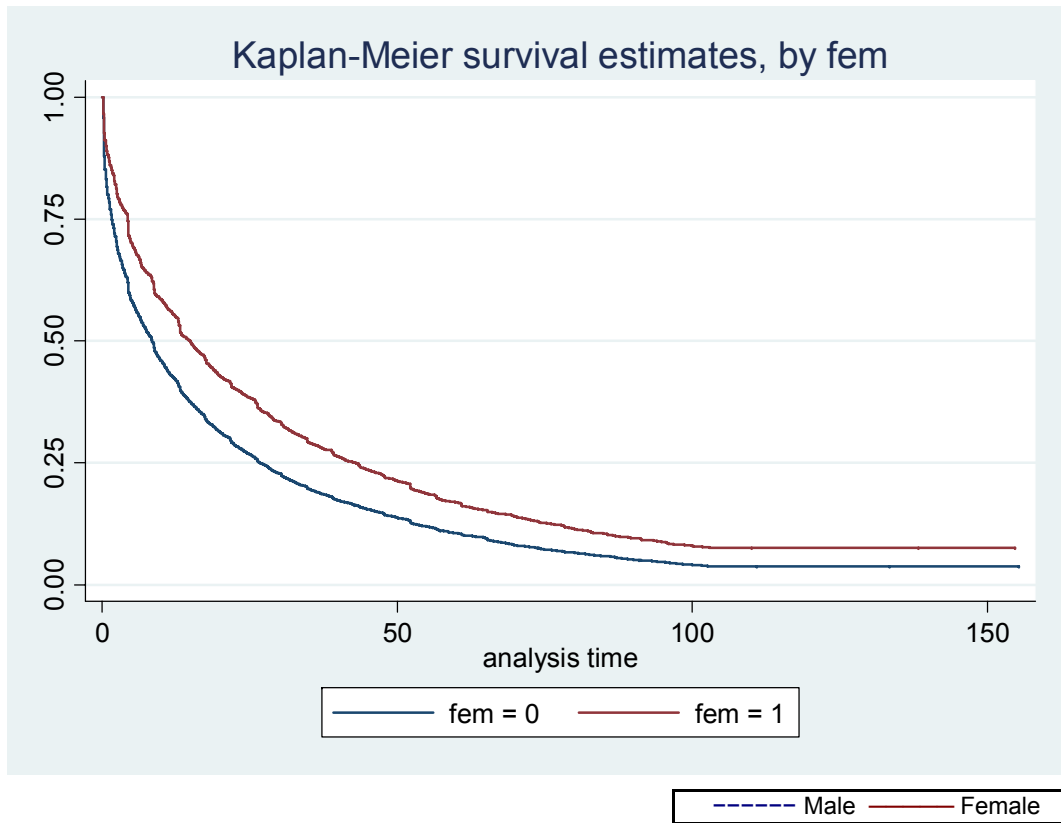


Figure 1: Survival Function of Length of Displacement by Gender

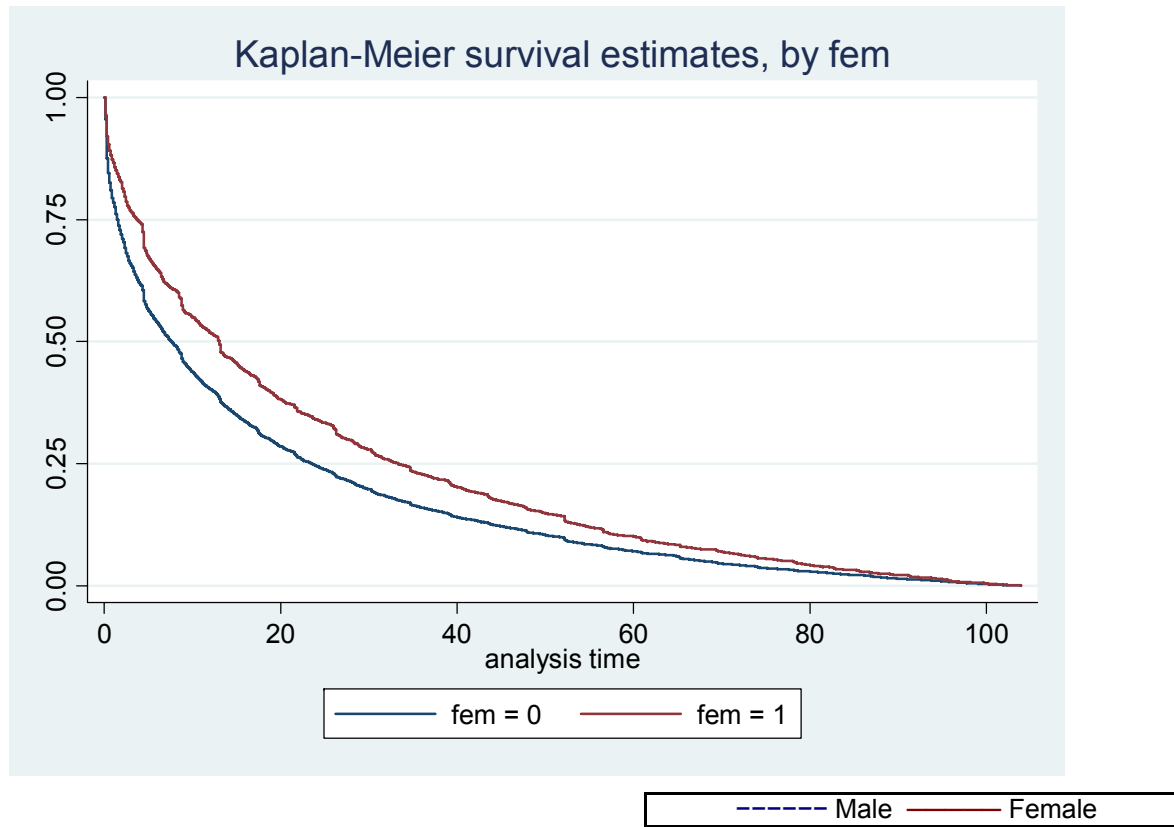


Figure 1b: Survival Function of Length of Displacement by Gender

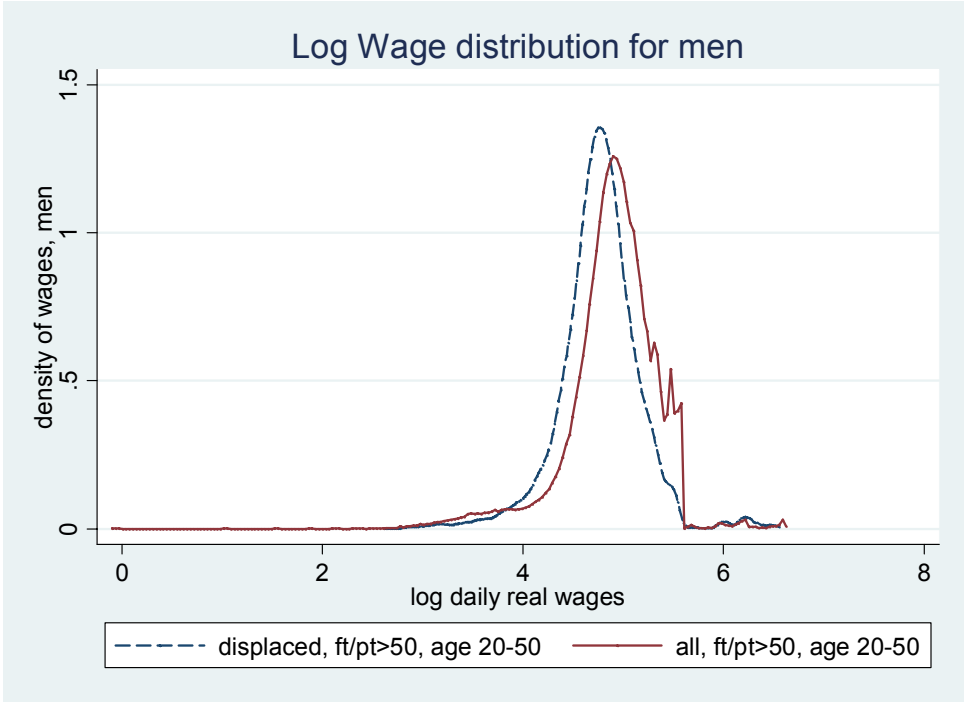


Figure 2: Log wage distribution for men

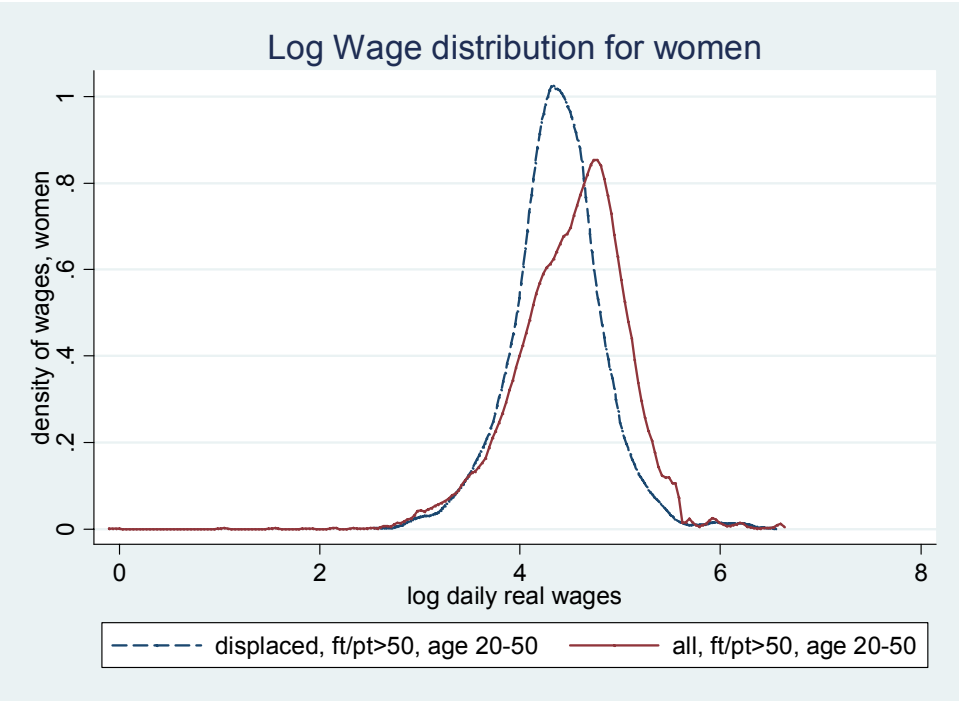
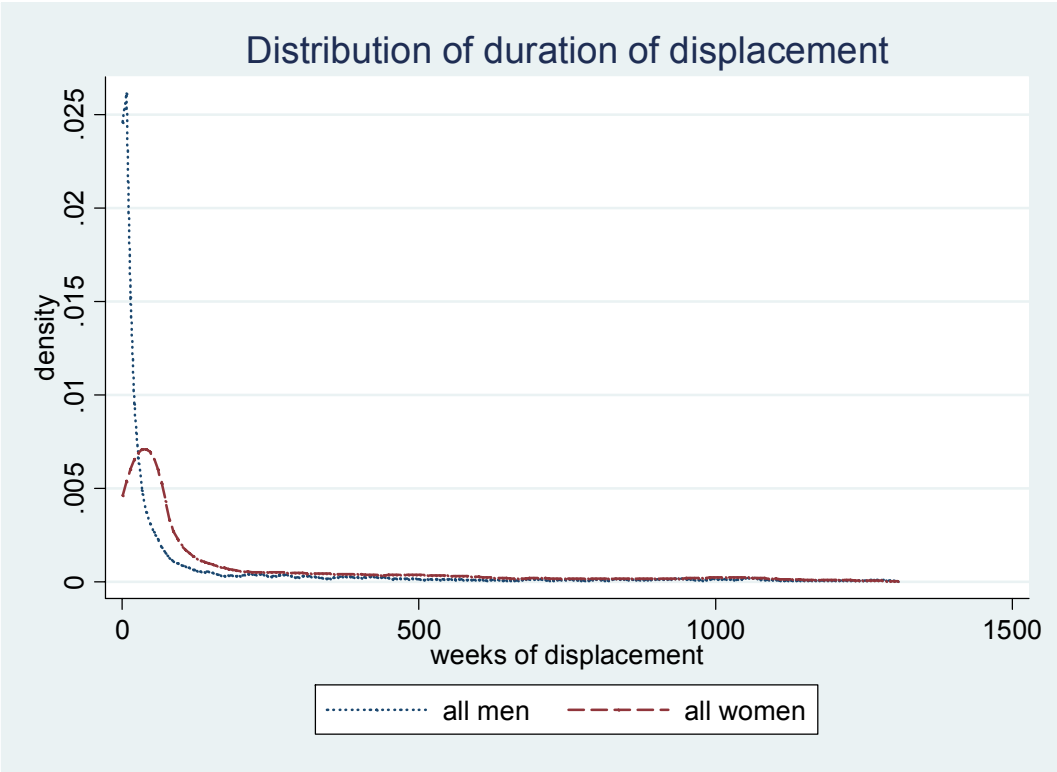
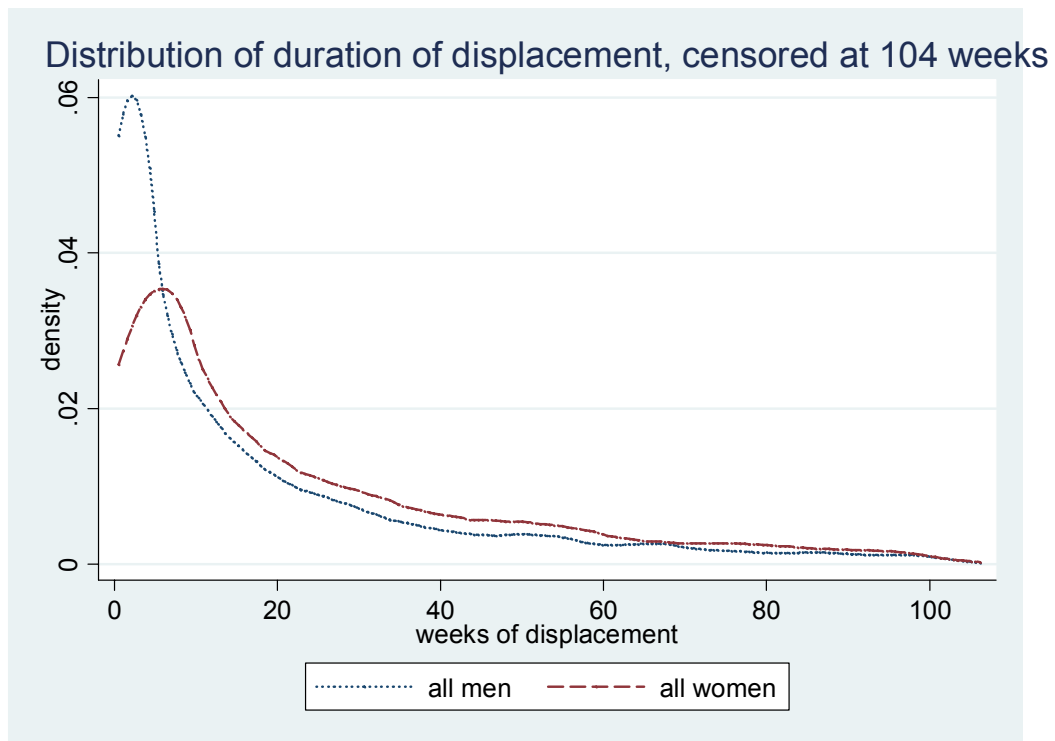


Figure 3: Log wage distribution for women



--- Male --- Female

Figure 4: Distribution of Length of Displacement by Gender



Male Female

Figure 5: Distribution of length of displacement censored at 104 wks by gender

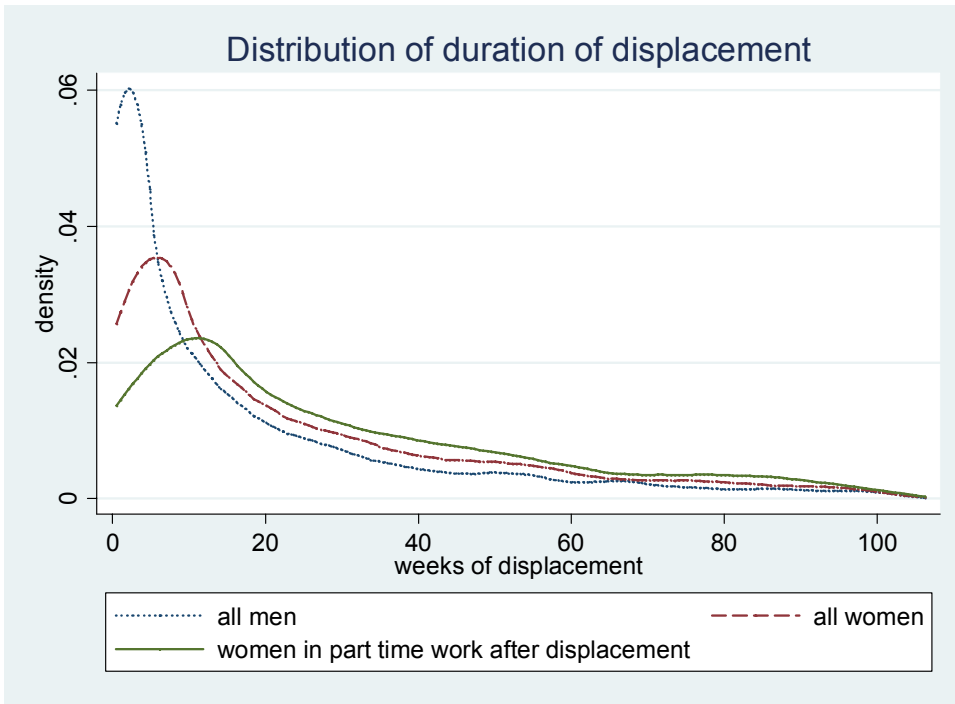


Figure 6: Distribution of duration of displacement, by gender

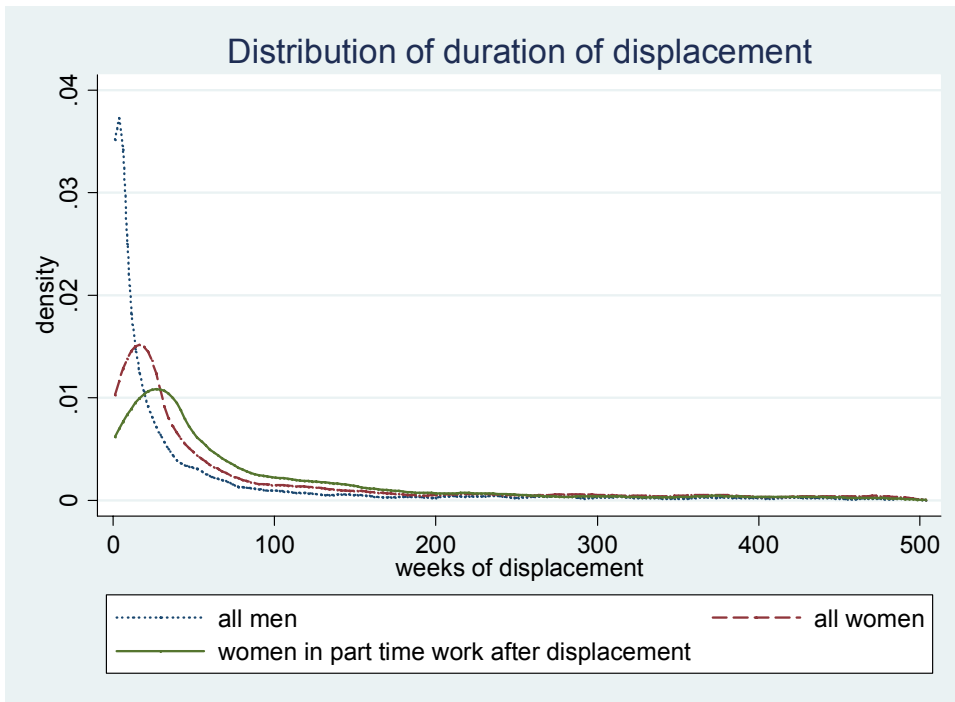


Figure 7: Distribution of duration of displacement, by gender