
Reemployment after Job Loss

One important observation in chapter 3 was the lower reemployment likelihood for high import-competing displaced workers relative to other displaced manufacturing workers. The key question for this chapter is, what characteristics of workers and industries can explain the gap? I provide answers to these questions by estimating a statistical model of the likelihood of reemployment. In this model, a worker's survey date status is classified as either reemployed or not reemployed.¹ With two exclusive and exhaustive classifications—employed or not employed—the appropriate econometric approach is called binary choice, which is statistically implemented here in a logit (or logistic) estimation.² The first set of estimates is reported in table 4.1. The table reports estimates of the change in the probability of reemployment that is associated with a unit change in each explanatory variable. These estimates are of interest because they represent how the likelihood of reemployment changes as an explanatory variable changes. The (direct) coefficient estimates from the logit estimation are reported in appendix table D.5.³

1. The status “not reemployed” includes unemployment, retirement, going to school, and staying at home. I do not distinguish between these nonemployment states.

2. The logit model is the most common econometric specification for estimating relationships where the dependent variable is qualitative in nature and must be represented as a “0/1” choice—in this case, reemployed (1) or not reemployed (0).

3. These reported estimates are called “marginal effects,” and for each explanatory variable they are calculated at the means of the other explanatory variables. An estimated coefficient from a logit specification does not directly produce an estimate of the change in the probability (of reemployment) due to a unit change in the relevant explanatory variable. This probability change is given by the derivative of the probability in the logit model, which is $\beta P(1 - P)$, where P is the sample reemployment rate and β is the coefficient estimate.

Table 4.1 Change in the probability of reemployment, full sample
(marginal effects, calculated from logit coefficients)

Characteristic	(1)	(2)	(3)
Manufacturing (nondurable goods)	-0.0598** (0.0193)	-0.0274* (0.0128)	-0.0269** (0.0104)
Manufacturing (durable goods)	-0.0289* (0.0129)	-0.0226* (0.0099)	-0.0423** (0.0094)
Transportation, communications, utilities	-0.0098 (0.0177)	-0.0027 (0.0146)	-0.0259 (0.0142)
Age at displacement (years)			
20-24		0.0940** (0.0107)	0.0851** (0.0110)
25-34		0.1097** (0.0079)	0.1052** (0.0079)
35-44		0.1106** (0.0096)	0.1101** (0.0098)
Education			
High school graduate		0.1058** (0.0079)	0.1116** (0.0081)
Some college		0.1599** (0.0083)**	0.1622** (0.0084)**
College degree or higher		0.2494** (0.0093)**	0.2434** (0.0093)**
Job tenure (years)			
Less than 3		0.0106 (0.0103)	0.0191 (0.0106)
3-5		0.0376** (0.0101)	0.0463** (0.0104)
6-10		0.0294** (0.0104)	0.0366** (0.0106)
Displaced from full-time job		0.1019** (0.0094)	0.0780** (0.0090)
Minority		-0.1063** (0.0084)	-0.1029** (0.0084)
Married		0.0193** (0.0070)	0.0116 (0.0067)
Female			-0.0973** (0.0062)
Year displaced			
1979-80	-0.0764** (0.0150)	-0.0747** (0.0157)	-0.0736** (0.0152)
1984-89	0.0569** (0.0086)	0.0538** (0.0083)	0.0567** (0.0083)
1990-92	0.0510** (0.0088)	0.0366** (0.0091)	0.0383** (0.0090)
1993-99	0.1774** (0.0098)	0.1717** (0.0098)	0.1773** (0.0099)
Years since displacement	0.0828** (0.0034)	0.0794** (0.0037)	0.0805** (0.0037)
Constant	-0.0911** (0.0133)	-0.3918** (0.0206)	-0.3251** (0.0212)
Observations	35,435	35,222	35,222

*significant at 5 percent; ** significant at 1 percent.

Note: Standard errors in parentheses.

Source: Author's calculations from the Displaced Worker Surveys, 1984-2000.

The Full Sample

We first use the broad sample of all displaced workers. The full sample (see table 4.1) provides a good opportunity to pin down the influence of certain demographic and labor market characteristics because it offers considerable variation in these characteristics. For the group as a whole, the sample average reemployment rate is 68.1 percent. This means that the “representative” worker in our sample—a displaced worker who is 38 years’ old, has 5.3 years’ job tenure, has 12.8 years of education, is male, is married, is not a member of a minority group, and who lost a full-time job in wholesale and retail trade, and services in 1989—has a reemployment likelihood of 68 percent.

Turning first to the difference between manufacturing workers and other workers, we find that manufacturing workers are less likely to be reemployed than workers displaced from wholesale and retail trade and services. Column (1) of table 4.1 presents estimates from a very sparse specification, one that controls broadly for industrial sector (of displacement), year of displacement (to account for business cycle effects), and years since displacement (to account for the fact that finding a new job takes time). No individual worker characteristics are included. This pared-down specification asks whether manufacturing workers are less likely to be reemployed than workers displaced from wholesale and retail trade and services in the same year and with the same amount of time since the job loss. We find that nondurable-goods manufacturing workers are 5.9 percentage points less likely to be reemployed, and durable-goods workers are 2.9 percentage points less likely to be reemployed than the similar representative worker displaced from wholesale and retail trade and services. This means that our representative worker, if displaced from nondurable-goods manufacturing, faces a 62 percent likelihood of reemployment; and if displaced from durable-goods manufacturing, a 65.2 percent likelihood of reemployment—relative to the 68 percent likelihood for the wholesale and retail trade and services worker. These differences are statistically significant.

The difference between manufacturing and wholesale and retail trade and services narrows considerably when other factors are included in the specification. In column (2) of table 4.1, when controls for age at displacement, job tenure, educational attainment, racial and ethnic minority status, and full-time status before displacement are added to the set reported on in column (1), both nondurable-goods and durable-goods workers are about 2-3 percentage points less likely to be reemployed than those displaced from wholesale and retail trade and services. This reduces the nondurable-goods effect by about half, and slightly reduces the durable-goods effect. The differences remain statistically significant, though considerably smaller (in the case of nondurable-goods workers). The narrowing of what we will call the “industry effect” is important; it means

that individual demographic and labor market characteristics are systematically related to reemployment. If these factors are “doing the work” (i.e., truly explaining differences in reemployment), then policymakers, when looking for potential signals of labor market adjustment difficulties, should turn first to these worker characteristics.

In that spirit, we will consider each characteristic. Age stood out as a clear difference in tables 3.1-3.3. Here, we see that increasing age is strongly negatively related to reemployment. Workers 25-34 or 35-44 years old are about 11 percentage points more likely to be reemployed than workers 45 years old or older at the time of displacement (the reference group).⁴ The young and prime-aged (25-44 years old) are much more likely to be reemployed, controlling for these other factors.

Differences by educational attainment are even more striking. In comparison with the reference group of high school dropouts, workers with a college degree (or higher) are 25 percentage points more likely to be reemployed, high school graduates 9.4 percentage points more likely, and workers with some college experience 11 percentage points more likely.

Advanced job tenure is associated with a considerably lower likelihood of reemployment. In comparison with workers with more than 10 years’ job tenure, workers with 3-5 years’ tenure are about 4 percentage points more likely to be reemployed, and workers with 6-10 years, 2.9 percentage points.

Workers displaced from full-time jobs are about 10 percentage points more likely to be reemployed than otherwise similar workers displaced from part-time jobs. This is consistent with a stronger attachment to the labor market, before the job loss. Married workers are slightly more likely to be reemployed than single ones, at a difference of 1.9 percentage points.

The model also controls for overall business cycle effects through the inclusion of a group of indicator variables for year of displacement.⁵ The overall health of the economy and the labor market matters a great deal. These effects can be best seen by predicting the likelihood of reemployment for workers with a given set of characteristics at varying times. For example, a worker displaced from nondurable-goods manufacturing in the strong economy of the mid- to late 1990s (1993-99) who is 45 years of age or older, is a high school dropout, has more than 10 years’ tenure on the old job, worked full-time at the time of displacement, is a nonminority, and is married had a predicted probability of reemployment of 53.7

4. Each category of explanatory variables (age, education, job tenure) has a reference group that is omitted from the estimation. The logit coefficients (and the reinterpretations as probabilities) are estimates of the difference between the included characteristic and its corresponding (excluded) reference group.

5. Year of displacement effects are grouped into 1979-80, 1981-83, 1984-89, 1990-92, and 1993-99 (with 1981-83 the excluded category). The marginal effects are reported at the bottom of table 4.1.

percent. The same worker, if displaced during the deep 1980s recession (1981-83), had a predicted probability of reemployment of 34.5 percent, about 36 percent lower. Although it may not be enough (particularly for older, less educated, long-tenured workers), a strong labor market clearly provides the necessary setting for displaced workers to find the next job.

We can illustrate other effects. For example, making our nondurable-goods displaced worker younger, say 25-44 years old instead of 45 or older, changes the predicted reemployment likelihood to 65.8 percent from 53.7 percent, a 22 percent increase. Educating our nondurable-goods displaced worker up to a high school diploma from high school dropout has about the same effect: a predicted reemployment likelihood of 65.4 percent. If our 45-year-old worker was a college graduate, the likelihood of reemployment jumps to 78.5 percent. These differences are a striking illustration of the importance of education (which is changeable) and age (which is not) in getting the next job.⁶

Job tenure also is important, although with smaller effects. For our nondurable-goods worker, if a high school dropout and 45 years old, the effect of having 6-10 years' job tenure, instead of more than 10 years, is to raise the reemployment likelihood to 57.1 percent from 53.7 percent. Having 3-5 years' tenure produces a reemployment likelihood of 58 percent. The tenure effects are notable and statistically significant, but are clearly smaller than the effects of education and age. Again, we consider this characteristic not because it is changeable, but as a readily observed predictor of labor market adjustment difficulty.

These results are fully consistent with other studies of job loss.⁷ Older workers with low levels of formal schooling and who are established in their jobs (as measured by job tenure) face difficult labor market adjustments. Through work experience, they have gained firm- and industry-specific skills. Adding in low levels of formal schooling, the combination may yield few marketable (or transferable) skills. Considerable job tenure is an indicator that job search skills may be rusty. Age lowers the return on investment in new skills. These straightforward results tell us whom we can expect, statistically, to face labor market adjustment difficulties, although not everyone with these characteristics will do so.

But other characteristics also matter. At the sample mean, minority workers face reemployment rates almost 11 percentage points lower than white workers, and women are almost 10 percentage points less likely to be reemployed (see column 3 of table 4.1). For less-skilled manufacturing workers,

6. As this report was being written, "dot-com" layoffs were dominating the business press. The predicted probability of reemployment for a typical "dot-comer"—that is, a worker displaced from the services sector, 25-34 years old, college graduate, less than 3 years' job tenure, full-time, nonminority, and married—was 87.8 percent.

7. See Fallick (1996) and Kletzer (1998b) for reviews.

reemployment differences by race and sex are even larger. To illustrate, if our nondurable-goods worker is a high school dropout, 45 years old or older, has more than 10 years' job tenure, worked full time, is a nonminority, was displaced in 1993-99, and is female, her predicted reemployment likelihood is 47.5 percent. If this worker is male, however, his reemployment likelihood increases to 58.6 percent, a 23.3 percent (or 11.1 percentage point) increase. If the female worker is a racial or ethnic minority,⁸ her reemployment likelihood falls by 24 percent, to 36 percent. If the male worker belongs to a racial or ethnic minority group, his reemployment likelihood is 46.8 percent, 20 percent lower.

Although the effect of being female is large, it is important, for reasons detailed below, to point out that the sum of the other effects (e.g., age, education, and job tenure) greatly reduces the estimate of the industry effect, whereas the addition of a control for gender only incrementally reduces the industry effect. This can be seen in table 4.1 by comparing the size of the estimates in column (2), without the control for gender, to the estimates in column (3), with the gender control. Most of the reduction in the industry effect occurs from columns (1) to (2), with the addition of the controls other than gender.

With all the controls, a nondurable-goods displaced worker faces a reemployment rate that is 2.7 percentage points lower, and a durable-goods one a reemployment rate 4.2 percentage points lower, as compared with otherwise similar workers displaced from wholesale and retail trade and services. Without any other factors, a nondurable-goods job loss has a reemployment rate 5.9 percentage points lower and a durable-goods one 2.9 percentage points lower. The nondurable-goods industry effect persists, but it is smaller by half after accounting for age, education, job tenure, minority status, and gender. The durable-goods industry effect is actually larger after accounting for these important worker characteristics. This means that durable-goods industries have fewer women, racial and ethnic minorities, older workers, and less educated workers than nondurable-goods industries and that, in part, these differences account for their higher reemployment rates relative to nondurable-goods ones.

To summarize, manufacturing workers are less likely to be reemployed than otherwise similar workers displaced from wholesale and retail trade and services. The difference is larger for durable-goods workers than for nondurable-goods workers.⁹

8. Defined here, from the CPS, as black, Hispanic, Asian/Pacific Islander, or American Indian.

9. Some other factors, related to industry, such as local labor market conditions and industry growth rates, may be important, but are not included in the specification due to measurement issues.

The Manufacturing Sample

When we turn to high import-competing displaced workers, we limit the sample to manufacturing. The same technique, logit estimation, was applied to this smaller sample, with results reported in table 4.2 for the marginal effects and appendix table D.6 for the estimated logit coefficients. For manufacturing workers, the sample reemployment rate was 64.7 percent. The first step separates workers into the three levels of import competition (high, medium, and low), without any other controls. Estimates from this simple starting point are reported in column (1). Workers from our high-import group were 4.1 percentage points less likely to be reemployed than workers displaced from the low-import group, a statistically significant difference, with no significant difference between the medium and low groups. This is fully consistent with the descriptive differences discussed in chapter 3.

The addition of worker characteristics has both similar and different effects from the full sample discussed above. The addition in column (2) of table 4.2 of age, education, job tenure, full-time status, and minority and marital status reduces the high-import effect, but not by much. High-import workers, controlling for these important characteristics, are still a statistically significant 3.4 percentage points less likely to be reemployed than low-import workers. The effects of these worker characteristics are very similar to the full sample. Prime-aged workers (25-44 years old) have reemployment rates 11 percentage points higher than workers above the age of 45; workers with some college or a college degree experience higher reemployment rates of 14-27 percentage points; and minority workers are 11 percentage points less likely to be reemployed.

To illustrate the large impact of business cycle conditions, we can use the same predictive techniques as was done above for the full sample. A worker displaced from a full-time job in a high import-competing industry in 1981-83, if age 45 years or older, a high school dropout, with more than 10 years' tenure, a nonminority, and married, had a reemployment likelihood of 30.4 percent. The same worker, displaced during the strong(er) labor market of 1993-99, faced a reemployment likelihood of 49.7 percent, an improvement of 19 percentage points, or 63 percent. As a group, manufacturing workers are markedly hampered in their reemployment efforts by a weak economy and labor market.

If our high import-competing worker is younger, between 35 and 44 years of age, and was displaced during the mid- to late 1990s, the reemployment likelihood increases to 61.8 percent from 49.7 percent. Somewhat similarly, if our age 45 years or older worker completed high school instead of dropping out, the reemployment likelihood increases to 61.2 percent from 49.7 percent. The effect of more formal schooling is stronger for younger workers than for older ones. For example, if our younger (age 35-44) worker had a high school diploma, the reemployment likeli-

Table 4.2 Change in the probability of reemployment, manufacturing sample (marginal effects, calculated from logit coefficients)

Characteristic	(1)	(2)	(3)	(4)
High import-competing	-0.0408* (0.0198)	-0.0345** (0.0124)	-0.0206 (0.0130)	-0.0206 (0.0134)
Medium import-competing	-0.0068 (0.0160)	0.0002 (0.0141)	-0.0030 (0.0126)	-0.0040 (0.0126)
Age at displacement (years)				
20-24		0.1074** (0.0209)	0.0944** (0.0206)	0.1065** (0.0208)
25-34		0.1196** (0.0137)	0.1122** (0.0138)	0.1185** (0.0136)
35-44		0.1115** (0.0180)	0.1090** (0.0186)	0.1126** (0.0186)
Education				
High school graduate		0.1050** (0.0118)	0.1063** (0.0119)	0.1090** (0.0121)
Some college		0.1456** (0.0126)	0.1392** (0.0128)	0.1387** (0.0132)
College degree or higher		0.2716** (0.0167)	0.2554** (0.0177)	0.2540** (0.0178)
Job tenure (years)				
Less than 3		0.0422** (0.0135)	0.0576** (0.0141)	0.0619** (0.0143)
3-5		0.0644** (0.0150)	0.0788** (0.0156)	0.0836** (0.0159)
6-10		0.0652** (0.0141)	0.0758** (0.0140)	0.0798** (0.0142)
Displaced from full-time job		0.1117** (0.0297)	0.0818** (0.0305)	0.0722* (0.0301)
Minority		-0.1111** (0.0138)	-0.1024** (0.0141)	-0.1056** (0.0142)
Married		0.0388** (0.0098)	0.0284** (0.0097)	0.1068 (0.0140)
Female			-0.1049** (0.0111)	0.0023 (0.0136)
Female × married				-0.1768** (0.0260)
Year displaced				
1979-80	-0.0968** (0.0212)	-0.0979** (0.0236)	-0.0949** (0.0228)	
1984-89	0.0684** (0.0123)	0.0726** (0.0118)	0.0744** (0.0120)	
1990-92	0.0551** (0.0136)	0.0487** (0.0140)	0.0491** (0.0134)	
1993-99	0.1803** (0.0152)	0.1854** (0.0170)	0.1901** (0.0174)	
Years since displacement	0.0944** (0.0048)	0.0935** (0.0055)	0.0941** (0.0058)	
Constant	-0.1392** (0.0191)	-0.4903** (0.0375)	-0.4263** (0.0355)	-0.4770** (0.0357)
Observations	13,846	13,795	13,795	13,795

*significant at 5 percent; ** significant at 1 percent.

Note: Standard errors in parentheses.

Source: Author's calculations from the Displaced Worker Surveys, 1984-2000.

hood would rise to 72.1 percent. This point is very important: It informs us that the value of more schooling (or training), in helping reemployment, depends on a worker's other characteristics and therefore is not the same for all workers.¹⁰

The influence of job tenure is a bit weaker. Workers with 3-10 years' tenure are about 6 percentage points more likely to be reemployed than ones with more than 10 years' tenure. For our high import-competing worker, age 45 years or older, a high school dropout, lowering job tenure to 6-9 years from more than 10 increases the reemployment likelihood to 56.9 percent from 49.7 percent.

So far, the manufacturing sample yields estimates that are qualitatively similar to those for the full sample. In contrast to the full-sample estimates, however, the industry effect, measured here as "high or medium import," relative to low import-competing, is considerably reduced, and loses statistical significance, with the addition of a control for gender. This can be seen by comparing the first row of columns (2), (3), and (4) of table 4.2. The estimated effects of the variables remain basically the same, and the high-import effect falls by about 40 percent and is statistically indistinguishable from zero. This means that the difference in reemployment between the high import-competing industries and the rest of manufacturing is due almost entirely to the much lower (by 10 percentage points) reemployment rates of females, who are predominantly employed in and displaced from the high import-competing industries.

This strong "female" effect found in manufacturing differs from that found in the full sample of industries, where women are also found less likely to be reemployed. The employment of women by industry is much less concentrated across all industries than it is just within manufacturing, where women are very concentrated in nondurable-goods employment. The concentration of female employment in manufacturing means that any industry effect will be confounded with a "female" effect, making it particularly important to use statistical analysis, if possible, to separate the two effects. The difference in the estimates between columns (2) and (3) shows that it is the lower likelihood of reemployment for women that produces the (slightly) lower reemployment likelihood of high import-competing displaced workers, and not the reverse.

We can advance our thinking about this confounding of effects one more step, through an insight obtained from a number of labor market studies.¹¹ It is broadly established that the association between certain labor market outcomes and marital status differs between men and

10. One of the advantages of the nonlinear logit estimation is its ability to discern differences in the effect of changing any given explanatory variable, depending on the values of the other explanatory variables.

11. See Korenman and Neumark (1991, 1992) for leading examples.

women. For example, being married is very often associated with a wage premium for men and a wage penalty for women. One interpretation is that married men are more productive in the workplace than single men, due to their greater responsibilities, and this is reflected in higher earnings. For women, the marriage penalty is often associated with carrying primary child care responsibilities and thus is more of a child penalty than a marriage penalty per se. Without straying too far from our focus, it can be seen that the effect of being female on reemployment estimated here is actually a married *and* female effect. Column (4) of table 4.2 reports these estimates. For the manufacturing sample, a single woman, with our “representative” characteristics, has a reemployment likelihood (of 45.3 percent) indistinguishable from an otherwise comparable single man (45.1 percent), whereas a married woman’s reemployment rate of 37.8 percent is 7.3 percentage points lower than a single man’s and 19 percentage points lower than a married man’s (56.8 percent). The effect of marriage for men is to raise their likelihood of reemployment by about 11 percentage points.

Why are married women so much less likely to be reemployed? This nationally representative sample does not provide much information for further investigation. One clear possibility is that married women—within dual-earner families where theirs may be the lower-income job—face more constrained job searches after displacement due to the jobs of their spouses. Relocation is likely more difficult and costly. There may also be child care constraints or substitution to nonmarket work when displaced.¹²

Summary

What do we conclude about high import competition and one of the costs of job loss? One clear interpretation of this analysis (and others) is that import competition is associated with low reemployment rates because the workers vulnerable to rising import job loss experience difficulty gaining reemployment on the basis of their individual characteristics. It is not import competition per se; it is who gets displaced from (and is employed by) industries with rising import competition. What limits the reemployment of import-competing displaced workers? The same characteristics that limit the reemployment of all displaced workers: low educational attainment, advancing age, high tenure, minority status, and

12. From information in the DWSs, we know that nonreemployed men and women are engaged in different activities. Across the survey years, about 18 percent of nonreemployed women are looking for work, as compared with 45 percent of nonreemployed men. Sixty-three percent of nonreemployed women report themselves out of the labor force and at home, as compared with 3 percent of men. Finally, 32 percent of nonreemployed men report retirement, relative to 9 percent of women. I leave this point for future research.

marital status. Married women, even those displaced from full-time jobs, are much less likely to be reemployed.¹³ Whether and how this matters for policy will be discussed in chapter 7.

As we see, losing a job and having to find another can be difficult for many workers. The difficulties, however, may not end with reemployment. If the new job pays less than the old one, the costs of job loss can continue for years. We turn next to the question of reemployment earnings and earnings losses.

13. What we do not know is why. In future research, it will be important to try to separate the labor supply and labor demand components of this relationship.