Earnings Losses of Older Displaced Workers: A Detailed Analysis with Administrative Data

[DRAFT ONLY - NOT FOR CIRCULATION OR CITATION]

September 2007

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This paper provides detailed estimates of earnings losses of older workers (ages 40 and over) who experience mass layoffs relative to a continuously employed comparison group. Relative to previous research that utilized survey data, the analysis here employs administrative data from unemployment insurance records in the State of Connecticut. This provides the basis for detailed, disaggregated estimates by age, gender, and industry of employment. The results indicate that earnings losses from mass layoffs are sustained six years following job loss. For the average worker aged 40 at the time of job loss, earnings remain 14% below the comparison group six years later. The equivalent figure for those ages 70 and over is 63%. The earnings losses by gender are generally larger for men than women, but typically represent similar proportions. Across industries, the largest losses occur in the Business and Professional Services, Finance Insurance and Real Estate, and Manufacturing industries.

I. Introduction:

Earnings losses of older workers due to large-scale layoffs and firm closures are common and have a significant impact on current and future economic well being (Couch 1998, Chan and Stevens 1999, Chan and Stevens 2001, Chan and Stevens 2004). Prior studies have used survey data that contain information on relatively few displaced workers, but the samples have been too small to allow disaggregated analysis.[1] In order to conduct a more detailed analysis, work histories for workers ages 40 and older are constructed using administrative records drawn from the unemployment insurance (UI) system in the State of Connecticut. More than 14 thousand displaced workers are identified. This sample is used to provide estimates of detailed earnings losses due to mass layoff by age, gender, and industry of employment.

Researchers' interest in studying earnings losses due to job displacement originates from at least two sources. First, basic human capital theory suggests that a significant determinant of wages is the portion attached to firm specific skills (Becker 1975). Moreover, those skills have a distinct pattern over both the lifecycle as well as the industry of employment. When workers lose a job due to events largely beyond their control and subsequently become re-employed, the pattern of earnings reductions experienced by age and across industry groups can be used to assess the relevance of the theory.

[1] For example, the recent study by Chan and Stevens (2004), which used the 1992 through 1998 waves of HRS data, identified approximately 1,132 workers who met the definition of displacement. Since the HRS is conducted every two years, this is about 283 workers per survey year.

Second, from a policy perspective, events such as plant closures are largely seen as originating from external competitive forces rather than from the actions of individual workers. In examining the extent to which the social costs of economic competition fall upon individuals, calculations of earnings losses for displaced workers assess one important dimension of those costs. The prior literature has confirmed those costs extend into other areas such as the spending down of savings, marital dissolution, increased risk of stroke and heart attack, and other choice related health behaviors such as smoking and alcohol consumption.

The Health and Retirement Study (HRS) has been the primary source of information previously used to conduct studies on not only the earnings losses and other financial consequences of job loss, but also the attendant health outcomes. While both the survey and the quality of these studies are high, the data do have some shortcomings when used to examine older displaced workers. Couch's (1998) study, which used the first wave of the HRS, relied on 204 observations of displaced workers for the analysis. More recently, Chan and Stevens (2004) used the 1992 through 1998 waves of the HRS to examine earnings losses and other financial consequences of older displaced workers. Their analysis identified 1,132 displaced workers for use in the analysis.

State administrative records provide the opportunity to obtain much larger samples of workers. The records themselves are based on payrolls that firms report to the State UI system for use in calculating benefits. They are virtually universal, primarily excluding the self-employed. The drawback of this data source is that relatively little information is available in the files or can be matched to them other than wages, industry

of employment, age, and gender. Nonetheless, these data have been successfully used to provide estimates of earnings losses for prime aged workers in a well-known study by Jacobson, LaLonde, and Sullivan (1993a) for the State of Pennsylvania and in a more recent analysis by Couch and Placzek (2007) for the State of Connecticut.
Neither of those studies examined the employment experiences of older workers and their observed earnings losses in the context of mass layoff.

Upon screening UI wage files for the State of Connecticut to select workers older than age 40 who were continuously employed from 1993 through 1998, 14,080 workers were identified who subsequently changed jobs due to a reduction of employment of 30% or more (mass layoff). The experiences of those workers were compared to similar workers who remained employed during the interval from 1999 through 2004.

For the group of older workers examined in this paper, earnings losses six years after job displacement remain 26% below those of the comparison group of continuously employed workers. Observed earnings losses associated with mass layoffs increase dramatically with age. At age 40, the average worker experiences a reduction in earnings of 14% six years after job loss. By age 55, the estimated sustained loss six years later is 37%. When detailed losses by gender are examined, the dollar losses are consistently larger for men, but as a percentage, they are similar to those of women.

Across industry groupings, the largest sustained percentage losses in earnings six years after job loss are observed in the categories of Manufacturing (33%), Finance Insurance and Real Estate (28%), along with Professional and Business Services (34%).

Losses in other categories such as Education and Health Services (23%) and Wholesale and Retail Trade (23%) at the same point in time are roughly similar in magnitude.

II. Previous Literature:

Obviously, a displaced worker will suffer earnings losses. Since the majority of the displacement literature focuses on the earnings losses of workers not yet at retirement age (Jacobson, LaLonde, and Sullivan 1993a, Ruhm 1991), this review begins with these papers. The loss in earnings is not only severe, but also persistent (Ruhm 1991). Fallick (1996) points to four reasons as to why displaced workers suffer declines in their earnings: a loss in human capital, a loss of a high quality match between a worker and a firm, lost union and industrial wage premiums, and a loss in seniority.

When controlling for the initial displacement, Stevens (1997) finds that earnings of displaced workers decline approximately 25% during the year of displacement. This decline increases to 26%, however, once she controls for the most recent displacement. Ruhm (1991) finds that earnings decline 10% the year of displacement. Jacobson et al. (1993a) find that earnings losses of displaced workers amount to approximately 25% per year. In fact, quarterly earnings remain $1,600 below their expected levels six years past the date of initial displacement. Ruhm (1991) calls this long length of earnings recovery scarring. He finds that the gap between the earnings of displaced workers and their employed counterparts three years after displacement remains between 10.1% and 15% depending on his controls for unobserved heterogeneity. Four years after job loss, the

gap ranges from 10.6% to 15.6%. When only controlling for the first displacement of a worker's experience, Stevens (1997) finds the recovery period lasts nine years, and earnings are 13% below expected levels. However, when she controls for the most recent displacement, she finds the recovery period to last approximately four years, and earnings are 5% below expectations.

Researchers who study displaced workers' earnings typically restrict their samples to relatively younger workers to avoid the selection problem of retirement (Jacobson et al. 1993a, Ruhm 1991, Chan and Stevens 2001b). However, a study of these earnings is important for a number of policy applications. The United States Census Bureau estimates that 1-in-5 people will be 65 or older by 2030 (Taeuber and Graham 2007). Eschtruth, Sass, and Aubry (2007) note how Social Security will eventually replace smaller portions of earnings upon retirement and 401(k)'s are relatively volatile. Therefore, one cannot rely upon them for consistent incomes later in life. Since these traditional savings mechanisms will decline in their ability to aid retirees, employers expect that some older workers want to extend their careers by at least two years (Eschtruth et al. 2007). This implies that older workers will constitute a larger portion of the workforce. This inherently increases their chances of suffering from displacement. In fact, evidence indicates that the absolute and relative displacement rate of older workers has increased between the 1980s and 1990s (Couch 1998, Chan and Stevens 1999, Chan and Stevens 2001b, Rodriguez and Zavodny 2000, and Rodriguez and Zavodny 2003).

Since older workers tend to accumulate more firm/industry-specific human capital and tenure, their earnings losses should be relatively larger when compared to younger workers. This is, in fact, what previous research shows. Using the 1992 wave of the HRS, Couch (1998) shows both reemployed and non-employed displaced workers between ages 51 and 60 have annual earnings losses amounting to 39% the year after displacement. Reemployed displaced workers suffer losses of 30%. Chan and Stevens (2001a) also use the early HRS (waves 1992, 1994, and 1996) and focus on older workers who are at least 50 years old. The authors find that reemployed displaced men and women suffer annual earnings losses amounting to 32% the year following job loss. Six or more years after displacement, men's earnings losses are 23% and women's losses are 28.5%. As expected, Chan and Stevens (2001a) find that larger tenure on the pre-displacement job is associated with larger earnings losses. In a later paper, Chan and Stevens (2004) show that reemployed displaced older men between the ages of 50 and 75 suffer wage losses of 50.1% below expectations the year after displacement, and wages are still 40.4% below expectations four years after job loss.

III. Data and Estimation Methodology:

The Office of Research at the Connecticut Department of Labor (DOL) provided the UI wage-records for the analysis presented in this study. All firms covered by UI are required to submit these records to the DOL for tax reporting purposes. Each record contains two important pieces of information: a worker's social security number (SSN) and an employer identification number (EIN). Demographic data and data on employers'

industrial classification are unavailable from the UI records. In order to obtain this information, UI records were matched to two additional sources. First, the EIN on the UI wage record is used to match to firm records contained in the Quarterly Census of Employment and Wages (QCEW). The QCEW records provide employer information regarding firm size and industrial classification as defined by the North American Industrial Classification System (NAICS).

Next, the UI wage files were matched to the Connecticut Department of Motor Vehicle (DMV) license application/renewal records using the workers' SSN. This provides the demographic information on age and gender. The DMV records contain SSNs for 70.1% of the licenses granted in Connecticut. If one were to place restrictions on the UI files such that individuals report positive earnings in 1993:Q1 and they report positive earnings in each year until 2004:Q4, then he would obtain 1,009,876 records. Of these records, 615,973 were successfully matched to the DMV files, thus yielding 60.99% coverage. If one assumes proportional matching to DMV files, then this results in a match rate of 87%. This rate is comparable to other studies that match UI files to Social Security Administration (SSA) records. Specifically, Lengermann and Vilhuber (2002) matched UI records from Maryland to SSA records and obtained a match rate of 89%.

Since demographic data were obtained by matching UI records to DMV records, the data exclude two types of individuals: those who reside in Connecticut and work out of state and those who live out of state and work in Connecticut. A natural question of selection bias arises since two groups of workers are systematically excluded. However,

information from the 2000 decennial census reveals that 7% of Connecticut's workers fall into one of these two categories. In addition, if one uses the sample selection criteria mentioned previously, then the wage distribution of the matched file compares closely to the distribution for the entire UI wage file. Specifically, the difference in median and average quarterly earnings between the UI file and the matched file is $265 and $385, respectively. The industrial distributions also are similar. When including the unclassified establishments category, there are 21 two-digit NAICS industries. When comparing the percentage of employment within these industries between the matched and UI files, 14 industries are within 0.2 percentage points of one another. The largest deviation occurs in the manufacturing industry, and this deviation equals 1 percentage point, with the UI file having the larger of the two percentages.

The wages available in the UI record are total quarterly wages, and they were converted to real 2000 dollars using the consumer price index for all urban consumers. In addition, wages have been top coded at $155,000.[2] The quarterly data are available from 1993:Q1 to 2004:Q4. In order to be included in the estimation sample, each individual must report positive earnings in 1993:Q1, he must report positive earnings at least once per year throughout the period, he must be continuously employed between 1993:Q1 and 1998:Q4 and he must have known demographic information. In addition, as will be clear below, all individuals working for firms with less than fifty employees were removed from the dataset. Finally, since this study focuses on older displaced workers, the sample

[2] This was done because there were a small number of very high wage earners affecting the parameter estimates. Jacobson et al. (1993a) top coded their wage data at $100,000 1987 dollars (Jacobson et al. 1993b). This study's top code is equivalent to theirs once one takes into account inflation and rounds to the nearest $5,000.

was restricted to those individuals born no later than 1964. After implementing these filters, the sample size is 91,254, of which 14,080 suffer from displacement.

The final step taken in setting up the sample was determining when a displacement occurred. Since individuals can only be in the sample if they are continuously employed between 1993 and 1998, the first time an individual can suffer displacement is 1999:Q1. Following Jacobson et al. (1993a), this study associates displacement with a mass layoff event. In determining mass layoff events, one first needs to identify when a separation occurs. Separations were found by examining when an EIN changed. However, EINs sometimes change for administrative reasons that are unrelated to economic events, and these administrative changes should not be labeled as displacements. The DOL keeps track of these changes in predecessor/successor files for UI risk assessment purposes. Using these files, an individual was coded as a separator when an EIN changed due to economic as opposed to administrative reasons. The separation was determined to occur in the quarter when the UI record last contained the previous employer's EIN. If the worker left a firm within a year (before or after) that it had employment drop by at least 30% of its maximum level before 1999:Q1, then this individual is considered a displacement. Finally, since displacements are determined from relative percentage changes in employment, small employers with small declines in employment would appear to suffer large percentage changes. This creates very volatile parameter estimates when including workers from small firms. Because of this, all individuals working for firms with less than fifty employees are removed from the sample.

This dataset has several advantages over the HRS, Displaced Worker Survey (DWS), and National Longitudinal Survey of Older Men, data typically utilized for studying older displaced workers. First, the data offer not only a natural comparison group, but also a very large sample of displaced and non-displaced workers. This yields precise estimates of earnings losses when compared to similar studies. Second, this administrative data contain workers' earnings histories for twelve years. Therefore, one is able to track long-term earnings adjustments. Finally, the data do not come from individuals' self-reports. This implies that the administrative data are virtually free from measurement error and recall bias, which are two problems that tend to plague the other datasets previously mentioned.

Despite these advantages, the administrative data do offer several disadvantages. First, this data are specifically for Connecticut. Second, the only demographic information available is age and gender. Therefore, interesting interactions that are available when utilizing survey data are unavailable in this study. Finally, this definition of displacement does not delineate between displacement, quits, and firing for cause. However, if a firm loses more than 30% of its maximum employment, then a mass layoff most likely did occur in that firm.

In estimating the pattern of older displaced workers' earnings losses, the fixed-effects model is utilized as is typically done in this line of literature (Jacobson et al. 1993a, Stevens 1997). The model is

$$Y_{it} = \alpha_i + \gamma_t + \sum_{k \geq -6} D_{is}^k \delta_k + \varepsilon_{it} \quad (1).$$

Here, Y_{it} is total quarterly earnings of person i in quarter t, α_i is an individual specific fixed effect that controls for unobserved heterogeneity, γ_t are year/quarter dummy variables, and ε_{it} is a stochastic random error term. D_{is} is a set of dummy variables equal to one if the individual is displaced in year s. k indexes these dummy variables beginning six years before the displacement. Since the data are available quarterly, and since the displacement dummy variables indicate displacement yearly, one should interpret the δ_k as the effect displacement has on the average quarterly earnings in that specific year.

Equation (1) is run on the entire sample by each age (as opposed to age groups) at time of displacement without controls for gender.[3] As mentioned in the introduction, this study's focus is older displaced workers, defined as someone who is at least 40 years old at the time he suffers from mass layoff. Since displacement can occur any time between 1999 and 2004, a direct comparison between a displaced 40 year old and a non-displaced 40 year old cannot occur. Therefore, the comparison group consists of a narrowly defined age group that is never more than six years younger or older than the displaced individual is. The comparison group consists of workers who are continuously employed. Since equation (1) does not control for other factors in the estimation, then δ_k is associated with the global effect of displacement on average quarterly earnings for that year (Kletzer and Fairlie 2003).

Equation (1) is also run on males and females separately. In addition, estimates are available by age and gender for individuals displaced from the following industries: manufacturing, wholesale and retail trade, finance investment and real estate (FIRE),

[3] The only ages that are grouped in the overall regression and the regressions for males and females separately are ages 65 through 69 and ages 70 and older.

business and professional services, education and health services, and other. When estimating by industry, the relative sample size of displaced workers becomes thin when compared to the control group, thus causing imprecise estimates. Because of this, individuals are grouped into five-year age brackets. The age groups are 40-44, 45-49, 50-54, 55-59, and 60+. Further aggregation is necessary when estimating by industry and gender. Then, the age groups are 40-49, 50-59, and 60+.

IV. Empirical Results:

Before presenting the empirical results of the paper, this section begins by showing some descriptive measures of the sample as shown in Table 1. Table 1 presents the age and earnings distribution of the sample by subgroup as of 1998. As mentioned in the previous section, the sample consists of 91,254 individuals, of which 14,080 suffer a displacement between 1999 and 2004.[4] On average, workers suffering from a mass layoff event tend to be younger than the entire sample (49.08 versus 49.11); however, they are older than their continuously employed counterparts are (49.08 versus 48.72). Non-displaced workers who separate from their employer are the oldest subgroup in our sample, with an average age of 50.38. Displaced workers also tend to earn less than both non-displaced separators and the continuously employed, with average 1998 quarterly earnings equaling $14,418 for displaced workers and $14,761 and $15,332 for non-displaced separators and the continuously employed, respectively.

[4] The estimation sample is smaller, however, because the comparison group consists of only those workers who are continuously employed.

Table 2 shows the parameter estimates from running (1) on both genders combined. Column one shows the age of workers at the time of displacement. Columns two through thirteen represent the period of displacement ranging from six years before to six years after separation. As one can see, the largest drop in average quarterly earnings occurs in the year immediately following displacement.[5] The results confirm findings from the studies mentioned in Section II. The initial drop in earnings grows with age at the time of displacement. Specifically, the earnings loss ranges from -2,743 at age 40 to -4,875 ages 70 and over. The largest drop equals -8,657, and it occurs at age 63. Not only do earnings drop more as one becomes older, but also earnings generally recover more at younger ages. At age 40, the earnings losses six years after displacement are approximately 68.6% of the drop in earnings the year immediately following job loss. For displaced workers 70 years old and older, the percentage equals 94.

There is a specific finding worth mentioning. Between ages 55 and 62, there is a distinct pattern. Earnings losses recover until approximately three years after displacement. Afterwards, they begin trending downwards again. For example, at age 58, earnings drop -7,479 the year immediately following job loss and recover to -5,560 below expectations three years after displacement. They then decline in years t+4 through t+6. This is an indication that older workers are retiring and taking part-time employment, known as bridge employment (Haveman 2001), in order to supplement retirement income such as Social Security. Nationally, two-thirds of men retire between the ages of 62 and 65 (Borjas 2005). Therefore, this trend is consistent with the point

[5] This does not occur for ages 57, 58, 60, 61, and 62. For these ages, the parameter estimates in t+6 are larger than the estimates in t+1. This is explained in the next paragraph.

made by Eschtruth et al. (2007), who stated that typical savings mechanisms are not as helpful as they once were for retirees.

To place these parameter estimates into perspective, column fourteen of Table 2 contains displaced workers' average quarterly earnings the year before separation. The ratio of the t+6 parameter to this average is in the final column. Since the parameter estimates in year t-1 are never economically meaningful, this ratio provides a good indication as to the percentage loss of earnings six years after displacement. These numbers clearly show that earnings losses increase with age, ranging from -14% at age 40 to -63% ages 70 and older. The percentages at year t+1 are -20% and -67%, respectively. Figure 1 graphs these percentage losses for the entire displacement period for ages 40, 50, 60, 70+, and 40+.

Table 3 provides the parameter estimates of (1) by gender. Table 3 does not include the pre-displacement variables since Table 2 indicates that these variables are rarely statistically significant and never economically meaningful.[6] All of the columns in Table 3 take the same interpretation as they did in Table 2. In general, losses are larger for men than for women. The last row of Table 3 indicates that in period t+6 earnings losses amount to 28% and 25% of pre-displacement earnings for men and women ages 40 and over, respectively. In the year following displacement, the percentages are 37% and 34%. For ages 40 and over, men consistently have larger earnings losses during the entire post-displacement period. However, the percentage point difference is never more than 5 points. Therefore, the earnings losses are relatively similar. Again, earnings

[6] Tables including the pre-displacement variables are available upon request.

losses increase with age, and the recovery is larger at younger ages. The same trend mentioned above also appears in Table 3. Specifically, between ages 55 and 62, earnings tend to recover until approximately t+3 and then trend down.

Tables 4 and 5 present the parameter estimates by industry for both genders combined (Table 4) and by industry and gender (Table 5). The same trends that appear in Table 2 occur in Table 4. The drop in earnings the year after displacement increases with each age group. In some instances, the drop in earnings more than doubles from the youngest age group to the oldest. This is most prevalent in the education and health services industry. In this industry, the drop in earnings for people 60 years old and over is 6.5 times larger than the drop in earnings for people between 40 and 44 years old. The business and professional services industry has the smallest ratio equaling 1.8.

Table 4 shows that, for people ages 40 and over, the largest drop in earnings occurs in the business and professional services industry (-7,590) followed by the manufacturing industry (-6,035). Average quarterly earnings the year before the job loss were calculated for displaced workers ages 40 and over in order to obtain the approximate percentage loss in earnings. Figure 2 graphs the results by industry category. Figure 2 shows that, as a percentage of pre-displacement average quarterly earnings, the business and professional services industry and the manufacturing industry have the largest drop in earnings the year following displacement (43% and 42%, respectively). The finance, insurance, and real estate (FIRE) industry has the smallest percentage loss despite the fact that it has one of the larger absolute losses. Workers displaced from the FIRE industry do not see their earnings recover. Specifically, in t+1,

earnings in this industry are 27% below their average quarterly earnings the year before displacement, and they are 28% below in t+6. Workers displaced from the trade industry experience the fastest earnings recovery. The earnings losses are 36% in t+1 and 23% in t+6.

Table 5 presents the estimation results by industry and gender. In almost every instance, the dollar value of the male earnings losses is larger than the corresponding loss for females. This is most likely due to men having larger average earnings as expressed in Table 1. For men relative to women, the drop in earnings the year following displacement grows faster with age in every industry. This is evident when dividing the t+1 coefficient for workers ages 60 and over by the coefficient for workers between 40 and 49. The one exception to this is the educational and health services industry. Here, women between the ages of 40 and 49 have a very slight drop in earnings with an instantaneous recovery.

Even though men's earnings losses tend to be larger in absolute dollar values, the losses as a percentage of average quarterly earnings the year prior to displacement between men and women are relatively similar for workers ages 40 and over. Specifically, for each post-displacement period, the average difference in earnings losses between men and women never exceeds 4.4 percentage points. This is most likely driven, however, by the small earnings losses for women ages 40 to 49 in the education and health services industry. When removing this industry from the calculation, the largest average difference (in absolute value) is 1.4 percentage points.

In period t+1, displaced men and women ages 40 and over have the largest earnings losses as a percentage of average quarterly earnings the year before displacement in the business and professional services industry and the manufacturing industry. For men, the smallest percentage losses occur in the FIRE industry. Women have the smallest percentage losses in the education and health services industry. However, as was the case with Table 4, men and women displaced from the FIRE industry have the least recovery in earnings. Men experience the fastest recovery when displaced from the other industry category; for females, this industry is trade.

V. Conclusions:

This paper has shown that older displaced workers suffer substantial earnings losses the year immediately following job loss, and earnings remain significantly below expectations six years after displacement. At 40 years old, the drop in earnings the year following displacement equals 20% of pre-displacement earnings, and for ages 70 and over the drop amounts to 67%. Overall, losses are slightly larger for men than for women. The year following job loss, men's drop in earnings is 37% and women's is 34%. These results hold when we disaggregate by industry. Workers ages 40 and over displaced from the business and professional services industry and the manufacturing industry see the largest drop in earnings as a percent of pre-displacement earnings. This result holds after disaggregating by gender. In addition, men and women displaced from the FIRE industry see the least recovery in their earnings.

These results confirm human capital theories of wage determination. Since earnings losses grow with age, the parameter estimates show that specific human capital and seniority are important factors in determining wages. From a policy perspective, these estimates indicate that older workers incur substantial costs in terms of lost earnings upon suffering displacement. Employers have stated that at least one-half of their employees over age 50 will lack the necessary resources to retire at the firm's typical retirement age (Eschtruth et al. 2007). Therefore, when one combines the significant decline in earnings found in this study, the potential for lost health coverage (Lin 2005), and decreases in gains in pension values (Chan and Stevens 2004) it can be seen that older work displacement is a multifaceted issue that will significantly alter the remainder of an individual's lifecycle.

References:

Becker, Gary S. 1975. 2nd Ed. *Human Capital*. Chicago, IL: University of Chicago Press.

Borjas, George. 2005. 3rd Ed. *Labor Economics*. Boston, MA: McGraw-Hill Irwin.

Chan, Sewin, and Ann Huff Stevens. 1999. "Employment and Retirement Following a Late Career Job Loss." *The American Economic Review* 89(2), Papers and Proceedings of the One Hundred Eleventh Annual Meeting of the American Economic Association: 211-216.

------. 2001a. "The Effects of Job Loss on Older Workers: Employment, Earnings, and Wealth," in *Ensuring Health and Income Security for an Aging Workforce*, eds. Peter P. Budetti, Richard V. Burkhauser, Janice M. Gregory, and H. Allan Hunt, Kalamazoo, MI: W.E. Upjohn Institute for Employment Research.

------. 2001b. "Job Loss and Employment Patterns of Older Workers." *Journal of Labor Economics* 19(2): 484-521.

------. 2004. "How Does Job Loss Affect the Timing of Retirement?" *Contributions to Economic Analysis & Policy* 3(1).

Couch, Kenneth A. 1998. "Late Life Job Displacement." *The Gerontologist* 38(1): 7-17.

Couch, Kenneth A., and Dana W. Placzek. 2007. "Earnings Losses of Displaced Workers Revisited." *Mimeograph*.

Eschtruth, Andrew D, Steven A. Sass, and Jean-Pierre Aubry. 2007. "Employers Lukewarm about Retaining Older Workers." *Work Opportunities for Older Americans* 10: Center for Retirement Research at Boston College.

Fallick, Bruce C. 1996. "A Review of the Recent Empirical Literature on Displaced Workers." *Industrial and Labor Relations Review* 50(1): 5-16.

Haveman, Robert. 2001. "Social Insurance and the Older Worker: An Overview," in *Ensuring Health and Income Security for an Aging Workforce*, eds. Peter P. Budetti, Richard V. Burkhauser, Janice M. Gregory, and H. Allan Hunt, Kalamazoo, MI: W.E. Upjohn Institute for Employment Research.

Jacobson, Louis S, Robert J. LaLonde, and Daniel G. Sullivan. 1993a. "Earnings Losses of Displaced Workers." *The American Economic Review* 83(4): 685-709.

------. 1993b. *The Costs of Worker Dislocation*. W.E. Upjohn Institute for Employment Research, Kalamazoo, Michigan.

Kletzer, Lori G, and Robert W. Fairlie. 2003. "The Long-Term Costs of Job Displacement for Young Adult Workers." *Industrial and Labor Relations Review* 56(4): 682-698.

Lengermann, Paul A, and Lars Vilhuber. 2002. "Abandoning the Sinking Ship: The Composition of Worker Flows Prior to Displacement." Longitudinal Employer-Household Dynamics Technical Paper No. TP-2002-11.

Lin, Emily Y. 2005. "Health Insurance Coverage and Reemployment Outcomes among Older Displaced Workers." *Contemporary Economic Policy* 23(4): 529-544.

Rodriguez, Daniel, and Madeline Zavodny. 2000. "Are Displaced Workers Now Finished at Age Forty?" *Economic Review – Federal Reserve Bank of Atlanta* 85(2): 33-47.

Rodriguez, Daniel, and Madeline Zavodny. 2003. "Change in the Age and Education Profile of Displaced Workers." *Industrial and Labor Relations Review* 56(3): 498-510.

Ruhm, Christopher J. 1991. "Are Workers Permanently Scarred by Job Displacements?" *The American Economic Review* 81(1): 319-324.

Stevens, Ann Huff. 1997. "Persistent Effects of Job Displacement: The Importance of Multiple Job Losses." *Journal of Labor Economics* 15(1): 165-188.

Taeuber, Cynthia, and Matthew R. Graham, 2007. *The Geographic Distribution and Characteristics of Older Workers in Iowa: 2004*. LED Older Worker Profile, LED-OW2007-IA. U.S. Census Bureau, Washington, DC.

Table 1: Sample Characteristics

A. Age in 1998		**Observations**	**Mean**	**Std. Dev.**	**Median**	**10th %tile**	**90th %tile**
Entire Sample:		91,254	49.11	48	6.59	41	58
Separators:							
	All	32,725	49.82	49	6.82	41	59
	Males	16,156	49.75	49	6.85	41	59
	Females	16,569	49.90	49	6.79	41	59
	Non-manufacturing	23,992	49.95	49	6.92	41	59
	Manufacturing	8,733	49.47	49	6.54	41	58
	Non-mass layoffs	18,645	50.38	50	7.05	42	60
	Mass layoffs	14,080	49.08	48	6.43	41	58
Continuously employed:		58,529	48.72	48	6.42	41	57
B. 1998 Earnings							
Entire Sample:		91,254	$15,074.12	$13,191.50	$11,376.28	$6,411.50	$22,893.00
Separators:							
	All	32,725	$14,613.19	$12,674.00	$11,037.79	$5,938.60	$22,853.40
	Males	16,156	17,470.92	14,858.00	13,121.90	8,170.50	26,401.20
	Females	16,569	11,826.70	10,468.00	7,550.84	4,954.00	19,534.00
	Non-manufacturing	23,992	14,437.30	12,638.50	10,917.37	5,504.00	22,634.80
	Manufacturing	8,733	15,096.43	12,747.00	11,348.65	7,127.40	23,437.00
	Non-mass layoffs	18,645	14,760.75	12,897.00	11,213.13	5,873.00	22,889.40
	Mass layoffs	14,080	14,417.80	12,432.00	10,798.51	6,016.60	22,764.50
Continuously employed:		58,529	15,331.83	13,464.00	11,553.31	6,683.00	22,914.00

Table 2: Fixed Effects Results by Age, Both Genders - Dependent Variable Total Quarterly Wages

Age Group	t - 6	t - 5	t - 4	t - 3	t - 2	t - 1	t + 1	t + 2	t + 3	t + 4	t + 5	t + 6	Average Earnings	% Loss at t+6
40	-57	107	92	-46	-137	-11	-2,743	-1,721	-1,639	-1,964	-1,832	-1,881	13,487	-14%
41	-44	28	-90	-348*	-494*	-121	-2,764	-1,668	-1,687	-2,123	-2,298	-2,279	13,370	-17%
42	78	13	-27	-223*	-221*	203*	-3,214	-2,182	-2,025	-2,094	-1,872	-2,051	14,356	-14%
43	10	-11	-107	-244*	-307*	51	-2,963	-2,245	-1,971	-2,059	-2,792	-2,355	13,673	-17%
44	49	-29	-52	-216*	-393*	79	-3,455	-2,462	-2,529	-2,608	-2,427	-3,050	14,513	-21%
45	28	-8	-50	-144	-348*	-70	-3,827	-2,649	-2,132	-2,352	-1,917	-2,231	13,842	-16%
46	129	113	14	-108	-243*	338*	-3,624	-2,317	-2,436	-2,331	-2,766	-3,249	14,674	-22%
47	66	-91	-249*	-405*	-505*	-322*	-3,886	-2,707	-2,374	-2,580	-2,354	-2,404	13,984	-17%
48	120	55	-83	-127	-448*	162	-3,798	-2,695	-2,568	-2,660	-3,071	-3,016	14,831	-20%
49	-6	-38	-149	-292*	-328*	32	-3,801	-3,014	-2,834	-3,035	-2,915	-2,882	14,922	-19%
50	72	69	118	-63	-203*	319*	-3,948	-2,801	-3,218	-3,207	-3,308	-3,132	14,922	-21%
51	-164	-327*	-227*	-385*	-675*	-206*	-4,131	-2,908	-2,857	-2,495	-3,247	-2,490	14,979	-17%
52	-187*	-339*	-287*	-519*	-622*	-95	-5,043	-3,768	-3,811	-3,797	-3,930	-3,301	14,801	-22%
53	-201*	-303*	-395*	-524*	-633*	-418*	-5,104	-3,885	-3,351	-3,089	-3,390	-3,369	15,330	-22%
54	-89	-183	-235*	-454*	-535*	-545*	-5,527	-4,427	-4,129	-4,243	-4,318	-4,797	14,050	-34%
55	-221*	-266*	-267*	-443*	-616*	-157	-6,419	-5,159	-4,911	-4,749	-5,203	-5,389	14,735	-37%
56	-231*	-225*	-278*	-436*	-594*	-134	-6,460	-5,409	-5,135	-5,171	-5,297	-5,611	14,260	-39%
57	-165	-137	-272*	-334*	-587*	-311*	-7,369	-6,407	-6,305	-6,699	-7,130	-7,772	15,584	-50%
58	-55	-100	-102	-261*	-365*	43	-7,479	-5,452	-5,560	-5,966	-6,911	-7,513	15,103	-50%
59	-118	-280*	-272*	-401*	-327*	275*	-7,269	-6,632	-5,960	-5,659	-6,113	-4,784	14,800	-32%
60	-165	-235	-354*	-532*	-394*	-48	-7,477	-6,911	-6,940	-7,099	-7,708	-7,844	14,782	-53%
61	-70	-77	-329*	-409*	-377*	-236	-7,572	-7,072	-7,144	-6,806	-7,097	-7,932	13,366	-59%
62	216	137	-63	-326*	-346*	-190	-7,826	-7,554	-7,286	-7,577	-8,238	-8,595	13,251	-65%
63	62	491*	514*	174	263	-317	-8,657	-7,501	-7,740	-7,806	-6,798	-7,005	12,707	-55%
64	12	144	-155	-209	42	-374	-7,033	-7,015	-7,102	-7,063	-7,090	-6,844	12,034	-57%
65-69	79	-62	-138	-230	-273	-919*	-7,346	-6,827	-6,618	-6,293	-6,111	-5,432	10,846	-50%
70+	-179	-734*	-1,036*	-1,172*	-1,467*	-1,259*	-4,875	-4,443	-4,600	-4,899	-3,672	-4,582	7,268	-63%
40+	-182*	-234*	-315*	-493*	-567*	-229*	-5,069	-3,915	-3,703	-3,704	-3,792	-3,737	14,160	-26%

*All post displacement variables are significant at the 1% level. * Indicates significance at the 5% level of better.*

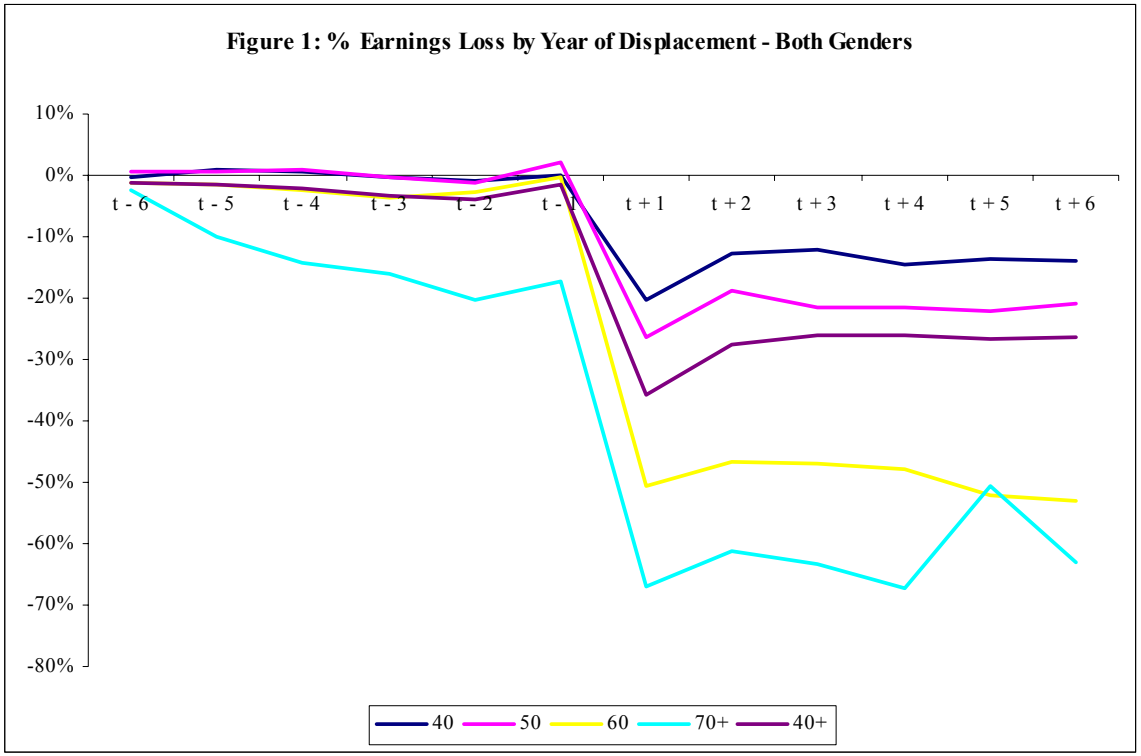
Figure 1: % Earnings Loss by Year of Displacement - Both Genders
10%
0%
-10%
-20%
-30%
-40%
-50%
-60%
-70%
-80%
t - 6
t - 5
t - 4
t - 3
t - 2
t - 1
t + 1
t + 2
t + 3
t + 4
t + 5
t + 6
40
50
60
70+
40+

Table 3: Fixed Effects Results by Age and Gender - Dependent Variable Total Quarterly Wages

	Males								Females							
Age Group	t + 1	t + 2	t + 3	t + 4	t + 5	t + 6	Average Earnings	% Loss at t+6	t + 1	t + 2	t + 3	t + 4	t + 5	t + 6	Average Earnings	% Loss at t+6
40	-3,353	-2,256	-2,150	-2,368	-1,978	-2,097	15,370	-14%	-2,061	-1,103	-1,045	-1,481	-1,620	-1,589	11,472	-14%
41	-2,591	-1,054	-1,193	-1,653	-1,994	-1,063*	15,326	-7%	-2,949	-2,346	-2,245	-2,660	-2,639	-3,400	11,066	-31%
42	-3,256	-2,006	-2,100	-1,929	-1,848	-2,197	16,211	-14%	-3,163	-2,409	-1,926	-2,316	-1,899	-1,893	11,907	-16%
43	-3,421	-2,705	-2,253	-2,366	-3,293	-2,925	15,675	-19%	-2,402	-1,692	-1,628	-1,684	-2,197	-1,676	11,404	-15%
44	-3,542	-2,378	-2,479	-2,735	-2,956	-3,775	17,065	-22%	-3,307	-2,498	-2,536	-2,414	-1,799	-2,286	11,734	-19%
45	-4,536	-3,250	-2,606	-2,974	-2,156	-2,908	16,110	-18%	-2,959	-1,884	-1,538	-1,590	-1,581	-1,452	11,197	-13%
46	-5,073	-3,446	-3,573	-3,002	-3,436	-4,283	17,215	-25%	-1,969	-1,081	-1,233	-1,603	-2,045	-2,282	11,706	-19%
47	-4,618	-2,864	-2,420	-3,060	-2,357	-2,845	15,957	-18%	-3,008	-2,520	-2,329	-2,008	-2,344	-1,893	11,671	-16%
48	-4,693	-3,356	-3,224	-3,108	-3,730	-3,697	17,531	-21%	-2,698	-1,868	-1,762	-2,115	-2,318	-2,253	11,548	-20%
49	-5,120	-4,299	-4,170	-4,022	-4,341	-3,847	17,648	-22%	-2,314	-1,593	-1,411	-1,984	-1,510	-1,907	11,630	-16%
50	-4,798	-3,329	-3,897	-3,976	-4,421	-4,005	17,761	-23%	-3,054	-2,226	-2,481	-2,407	-2,181	-2,227	11,887	-19%
51	-5,073	-3,713	-3,523	-2,985	-3,904	-2,190	18,561	-12%	-3,129	-2,069	-2,179	-1,985	-2,576	-2,754	11,169	-25%
52	-6,146	-4,828	-4,959	-4,766	-5,048	-3,362	18,228	-18%	-3,832	-2,622	-2,601	-2,807	-2,788	-3,185	10,965	-29%
53	-6,543	-5,137	-4,413	-3,934	-4,821	-5,054	18,859	-27%	-3,661	-2,644	-2,286	-2,242	-1,932	-1,817	11,560	-16%
54	-6,688	-5,302	-4,938	-5,520	-5,498	-5,198	16,808	-31%	-4,294	-3,543	-3,316	-2,984	-3,190	-4,373	11,001	-40%
55	-7,713	-6,319	-6,063	-5,782	-6,677	-6,054	17,713	-34%	-4,774	-3,720	-3,509	-3,556	-3,548	-4,655	10,746	-43%
56	-7,815	-6,922	-6,429	-6,399	-6,631	-7,714	17,242	-45%	-4,944	-3,740	-3,690	-3,875	-3,963	-3,681	10,310	-36%
57	-9,032	-7,925	-7,583	-8,198	-8,807	-9,869	18,943	-52%	-5,245	-4,366	-4,546	-4,669	-4,664	-4,573	10,701	-43%
58	-8,897	-6,863	-7,185	-7,732	-8,934	-9,468	17,890	-53%	-5,764	-3,785	-3,623	-3,729	-4,447	-5,353	11,263	-48%
59	-9,288	-8,576	-7,604	-7,028	-7,454	-5,812	18,390	-32%	-4,470	-3,956	-3,727	-3,873	-4,288	-3,417	9,837	-35%
60	-9,365	-8,776	-8,594	-8,873	-10,146	-9,122	18,495	-49%	-5,078	-4,353	-4,668	-4,783	-4,597	-6,315	9,376	-67%
61	-8,996	-8,539	-8,720	-8,036	-8,737	-9,241	16,241	-57%	-5,819	-5,235	-5,250	-5,233	-5,170	-6,610	9,848	-67%
62	-9,599	-8,863	-8,277	-8,551	-9,369	-9,689	15,989	-61%	-5,475	-5,602	-5,554	-5,616	-6,068	-6,468	9,250	-70%
63	-10,247	-8,660	-9,107	-9,432	-7,806	-7,899	15,000	-53%	-5,744	-5,072	-4,818	-4,463	-4,137	-4,306	9,052	-48%
64	-9,173	-8,955	-8,168	-8,107	-8,170	-7,973	16,666	-48%	-4,919	-4,950	-5,858	-5,730	-5,720	-5,528	8,881	-62%
65-69	-8,941	-8,202	-7,779	-7,457	-7,233	-6,138	13,761	-45%	-5,504	-5,095	-5,022	-4,749	-4,715	-4,519	7,447	-61%
70	-6,036	-5,752	-5,935	-6,421	-4,483	-5,850	8,783	-67%	-3,516	-2,756	-2,657	-2,627	-2,509	-2,980	5,596	-53%
40+	-6,258	-4,934	-4,683	-4,654	-4,855	-4,644	16,878	-28%	-3,694	-2,736	-2,574	-2,626	-2,614	-2,755	10,869	-25%

*All post displacement variables are significant at the 1% level unless indicated by *. * Indicates significance at the 5% level.*

Table 4: Fixed Effects Results by Age and Industry, Both Genders - Dependent Variable Total Quarterly Wages

Industry	Age Group	t - 6	t - 5	t - 4	t - 3	t - 2	t - 1	t + 1	t + 2	t + 3	t + 4	t + 5	t + 6	Average Earnings	% Loss at t+6
	40-44	-351*	-439*	-557*	-837*	-958*	-909*	-4,249	-3,022	-2,955	-3,308	-3,344	-3,185	13,416	-24%
	45-49	-261*	-406*	-579*	-718*	-886*	-525*	-5,222	-3,703	-3,363	-3,607	-3,680	-3,295	14,268	-23%
	50-54	-353*	-524*	-620*	-1,036*	-1,081*	-627*	-5,439	-4,068	-3,871	-4,082	-4,880	-4,627	14,663	-32%
	55-59	-196*	-316*	-519*	-704*	-827*	85	-7,524	-5,829	-5,477	-5,815	-6,439	-6,532	15,590	-42%
	60+	-15	-153	-378*	-692*	-811*	-468*	-8,736	-8,131	-8,212	-8,382	-9,036	-9,582	14,104	-68%
Manufacturing	40+	-303*	-445*	-623*	-924*	-1,027*	-623*	-6,035	-4,660	-4,406	-4,644	-4,961	-4,765	14408	-33%
	40-44	120	186	93	-91	-29	-34	-2,261	-1,284	-1,128	-1,272	-1,295	-815	10,913	-7%
	45-49	-121	-247	-169	-372*	-642*	-531*	-3,277	-2,400	-2,256	-2,074	-2,191	-2,541	11,453	-22%
	50-54	30	-74	-141	-388*	-489*	-1,046*	-4,099	-3,093	-2,831	-2,201	-2,003	-2,019	11,062	-18%
	55-59	-49	-159	-60	-206	-437*	-546*	-4,935	-4,340	-4,378	-4,157	-4,729	-4,462	10,916	-41%
	60+	-258	-477*	-207	-288	-373	-754*	-4,861	-4,714	-4,461	-4,048	-3,794	-3,606	8,283	-44%
Trade	40+	-136	-224*	-216*	-407*	-514*	-673*	-3,802	-2,976	-2,780	-2,534	-2,554	-2,399	10,621	-23%
	40-44	437	690*	795*	343	502	2,606*	-2,829	-2,045	-2,030	-2,453	-2,378	-3,389	20,642	-16%
	45-49	428	537*	176	-7	71	1,242*	-4,363	-3,115	-3,364	-4,192	-4,315	-5,595	19,458	-29%
	50-54	139	276	412	255	-68	1,877*	-5,379	-4,369	-4,483	-3,841	-3,756	-3,303	20,239	-16%
	55-59	-153	-372	-573	-396	-597	673*	-6,696	-6,046	-5,404	-5,641	-6,433	-8,479	19,073	-44%
	60+	271	529	-258	-447	-223	-297	-7,432	-6,128	-6,446	-7,028	-6,430	-7,587	12,968	-59%
FIRE	40+	66	80	-5	-202	-230	1,248*	-5,101	-4,044	-4,049	-4,337	-4,335	-5,314	19,223	-28%
	40-44	-484*	-501*	-723*	-862*	-1,131*	-417	-5,099	-3,959	-3,704	-3,759	-4,702	-5,608	16,963	-33%
	45-49	-680*	-995*	-1,081*	-1,289*	-1,822*	-493	-7,165	-5,387	-5,014	-4,635	-5,187	-5,142	18,235	-28%
	50-54	-193	-271	10	-214	-12	1,199*	-7,033	-5,646	-5,567	-5,439	-5,766	-4,848	20,747	-23%
	55-59	-569	-850*	-734*	-1,146*	-1,132*	-590	-9,695	-8,211	-8,252	-7,445	-7,411	-8,255	16,805	-49%
Business	60+	-394	-569	-968*	-1,186*	-923*	-709	-9,138	-8,757	-8,250	-8,227	-7,617	-7,484	15,613	-48%
Services	40+	-621*	-788*	-863*	-1,126*	-1,254*	-408*	-7,590	-6,140	-5,756	-5,464	-5,858	-6,005	17,736	-34%
	40-44	205*	220*	75	38	-75	-182*	-1,297	-831	-762	-827	-656	-656	10,712	-6%
	45-49	127	2	-85	-129	-240*	-340*	-1,491	-834	-607	-794	-454	-728	12,017	-6%
	50-54	-147	-318*	-335*	-340*	-494*	-570*	-2,982	-1,883	-1,904	-1,915	-1,817	-2,157	12,344	-17%
	55-59	-191*	-239*	-286*	-455*	-616*	-746*	-6,708	-5,889	-6,233	-6,477	-6,844	-6,632	13,359	-50%
Education and	60+	-152	-264*	-495*	-740*	-1,034*	-1,859*	-8,439	-8,312	-8,599	-8,745	-8,596	-9,762	10,503	-93%
Health Services	40+	-95*	-182*	-303*	-391*	-540*	-769*	-3,894	-3,036	-2,978	-2,979	-2,731	-2,716	11,847	-23%
	40-44	-80	98	114	172	4	375*	-2,325	-1,032	-916	-984	-1,035	-1,145	13,978	-8%
	45-49	-212*	-99	-115	-75	-153	376*	-2,372	-1,761	-1,658	-1,725	-1,487	-1,931	14,303	-14%
	50-54	-234*	-319*	-415*	-433*	-402*	-153	-5,055	-4,079	-4,175	-4,033	-3,841	-3,188	13,948	-23%
	55-59	-176	-10	-180	-363*	-204	-265*	-6,795	-6,231	-5,718	-5,471	-4,802	-4,747	13,988	-34%
	60+	-74	-221	-111	-326*	-229	-465*	-6,252	-5,550	-5,681	-5,304	-4,096	-3,772	10,704	-35%
Other Industries	40+	-290*	-234*	-318*	-367*	-381*	-169*	-4,388	-3,424	-3,157	-3,014	-2,689	-2,658	13,625	-20%

*All post displacement variables are significant at the 1% level. * Indicates significance at the 5% level or better.*

Figure 2: % Earnings Loss by Industry - Both Genders

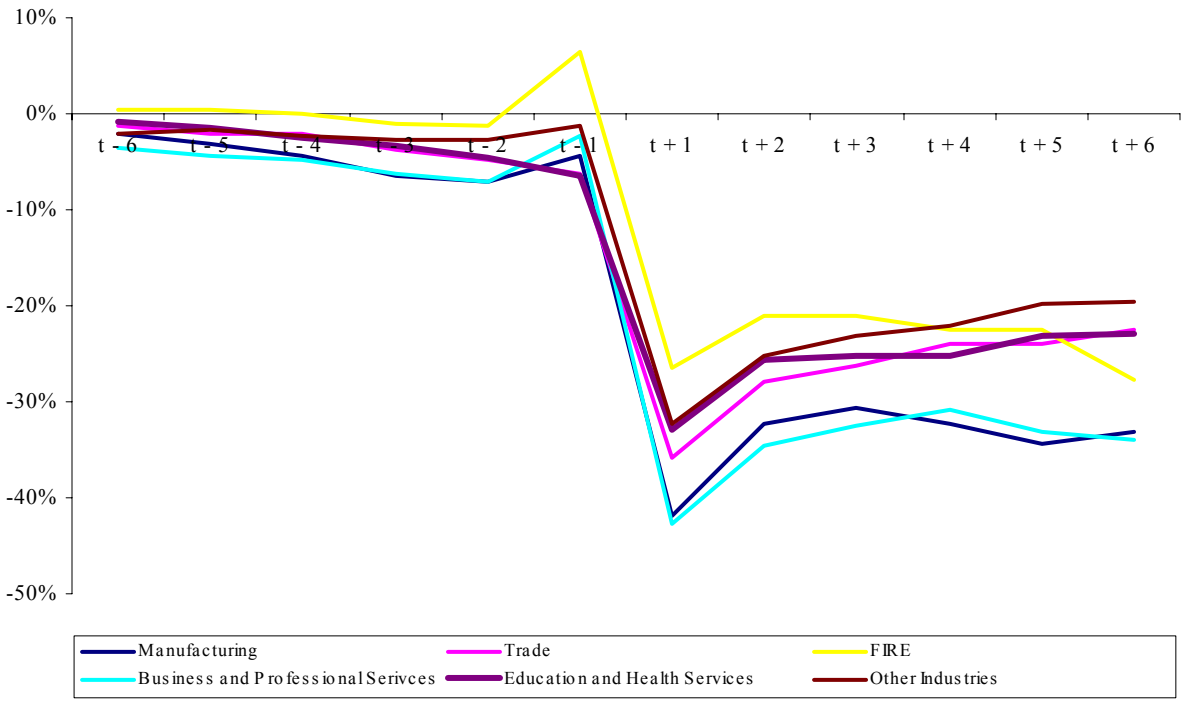

Table 5: Fixed Effects Results by Age, Industry, and Gender - Dependent Variable Total Quarterly Wages

		Male								Female							
Industry	Age Group	t + 1	t + 2	t + 3	t + 4	t + 5	t + 6	Average Earnings	% Loss at t+6	t + 1	t + 2	t + 3	t + 4	t + 5	t + 6	Average Earnings	% Loss at t+6
	40-49	-4,893	-3,366	-3,072	-3,332	-3,359	-3,138	15,188	-21%	-4,176	-3,084	-3,009	-3,336	-3,321	-2,975	11,112	-27%
	50-59	-7,184	-5,530	-5,272	-5,591	-6,426	-6,244	17,423	-36%	-5,170	-3,867	-3,563	-3,777	-4,206	-3,968	10,368	-38%
	60+	-10,261	-9,521	-9,527	-9,622	-10,428	-10,927	16,602	-66%	-5,342	-4,919	-4,943	-4,849	-4,842	-5,695	8,633	-66%
Manufacturing	40+	-6,587	-5,082	-4,804	-5,041	-5,439	-5,233	16,322	-32%	-4,795	-3,679	-3,476	-3,687	-3,819	-3,622	10,421	-35%
	40-49	-3,129	-2,092	-1,931	-1,886	-2,397	-2,183	13,926	-16%	-2,100	-1,245	-1,125	-1,137	-762	-826	8,271	-10%
	50-59	-5,712	-4,898	-4,864	-4,421	-4,380	-4,230	13,621	-31%	-2,997	-2,223	-2,066	-1,759	-1,865	-1,552	7,701	-20%
	60+	-5,988	-5,911	-5,546	-5,078	-4,384	-3,830	9,591	-40%	-3,218	-2,896	-2,776	-2,576	-2,899	-3,263	6,227	-52%
Trade	40+	-4,717	-3,884	-3,704	-3,405	-3,581	-3,360	12,998	-26%	-2,582	-1,773	-1,594	-1,453	-1,223	-1,158	7,774	-15%
	40-49	-4,272	-3,041	-3,496	-4,034	-3,615	-4,810	27,313	-18%	-3,126	-2,260	-2,149	-2,805	-2,949	-3,925	15,946	-25%
	50-59	-7,681	-7,038	-6,266	-5,214	-6,541	-6,301	30,005	-21%	-5,029	-4,107	-4,189	-4,198	-4,034	-4,786	13,493	-35%
	60+	-12,071	-8,452	-9,294	-10,722	-10,064	-12,315	18,734	-66%	-4,753	-4,407	-4,706	-5,103	-5,181	-6,557	9,748	-67%
FIRE	40+	-6,802	-5,489	-5,440	-5,508	-5,471	-6,349	27,557	-23%	-4,220	-3,338	-3,354	-3,785	-3,801	-4,799	14,367	-33%
	40-49	-6,947	-5,204	-5,172	-4,718	-5,596	-7,079	20,361	-35%	-4,853	-3,668	-2,993	-3,139	-3,685	-3,261	14,032	-23%
	50-59	-11,147	-9,549	-9,695	-9,016	-9,187	-8,392	24,045	-35%	-5,516	-4,244	-3,764	-3,551	-3,731	-4,061	12,726	-32%
Business	60+	-11,945	-11,922	-10,874	-10,962	-10,354	-9,822	20,297	-48%	-5,643	-5,065	-5,190	-4,983	-4,739	-4,946	9,435	-52%
Services	40+	-9,457	-7,817	-7,580	-7,013	-7,490	-7,982	21,734	-37%	-5,359	-4,162	-3,574	-3,586	-3,917	-3,704	12,818	-29%
	40-49	-2,674	-2,623	-2,631	-2,695	-1,940	-2,366	13,806	-17%	-824	-36*	122*	-55*	20*	-30*	10,448	0%
	50-59	-6,774	-5,979	-6,334	-6,673	-7,264	-6,238	15,684	-40%	-3,781	-2,620	-2,639	-2,636	-2,579	-3,015	11,473	-26%
Education and	60+	-9,907	-9,452	-9,734	-9,929	-9,807	-10,011	12,542	-80%	-7,580	-7,569	-7,888	-8,045	-8,005	-9,519	9,356	-102%
Health Services	40+	-5,750	-5,230	-5,403	-5,510	-5,278	-4,844	14,346	-34%	-3,042	-2,056	-1,952	-1,949	-1,796	-1,934	10,681	-18%
	40-49	-2,683	-1,255	-1,137	-1,226	-977	-1,011	16,466	-6%	-2,094	-1,694	-1,581	-1,612	-1,647	-2,062	11,385	-18%
	50-59	-7,671	-6,903	-6,113	-5,754	-5,526	-3,271	16,665	-20%	-3,856	-3,093	-3,430	-3,434	-2,995	-3,806	10,834	-35%
	60+	-8,273	-7,479	-7,585	-7,327	-5,788	-4,721	13,823	-34%	-4,016	-3,365	-3,303	-2,963	-2,213	-2,764	7,494	-37%
Other Industries	40+	-5,474	-4,223	-3,679	-3,479	-3,040	-2,287	16,220	-14%	-3,085	-2,469	-2,473	-2,427	-2,220	-2,793	10,620	-26%

*All post-displacement variables are significant at the 1% level unless indicated by a *. * Indicates statistical insignificance.*