The Impact of a Temporary Help Job on Participants in Three Federal Programs

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Abstract

We examine the effects of temporary help service employment on later earnings and employment for individuals participating in three federal programs providing supportive services to those facing employment difficulties. The programs include TANF, whose participants are seriously disadvantaged; a job training program, with a highly heterogeneous population of participants; and employment exchange services, whose participants consist of Unemployment Insurance claimants and individuals seeking assistant in obtaining employment. We undertake our analyses for two periods: the late 1990s, a time of very strong economic growth, and shortly after 2000, a time of relative stagnation. Our results suggest that temporary help service firms may facilitate quicker access to jobs for those seeking employment assistance and impart substantial benefits as transitional employment, especially for individuals whose alternatives are severely limited. Accordingly, we expect that expanded use of these firms in workforce development programs will generate net benefits. Our results are robust to program and time period.

I.   Introduction

There has been a dramatic increase in total employment in temporary help service (THS) firms in recent years from less than 0.5 percent in 1982 to approximately 2.5 percent by 2004 (U.S. Bureau of Labor Statistics, 2005). These changes have been particularly dramatic for low-skilled, less educated and minority workers, who are now greatly overrepresented in the temporary help workforce (Autor and Houseman, 2005; Heinrich, Mueser and Troske, 2005; DiNatale, 1999). This disproportionate concentration of disadvantaged workers in THS employment, combined with the growing use of temporary help service firms as labor market intermediaries by both private firms and public social welfare programs, has engendered an active policy and research debate about the consequences of such mediated employment for workers' wages, job stability, access to fringe benefits, and labor market advancement. In addition, the literature (reviewed below) has more recently begun to address some of the more complex questions about the implications of temporary help employment for workers' labor market outcomes, including these workers' subsequent labor market transitions, occupational mobility, and longer-term earnings trajectories.

In general, two competing arguments have been advanced about temporary help employment: (1) employment through THS firms may provide a path to permanent and stable employment for workers who might otherwise be excluded from such labor market opportunities, and (2) temporary help jobs supplant productive employment search and reduce access to better employment opportunities, ultimately depressing workers' wages and opportunities for advancement. The former argument is consistent with the basic premise underlying current U.S. public welfare and employment and training policies, which assume that getting individuals placed into jobs (even low-wage jobs) will allow them to gain on-the-job

skills and experience and move up the career ladder to better positions (i.e., "a foot in the door" or a "stepping stone"). With this greater policy emphasis on short-term, work-oriented social services, the role of THS firms in facilitating job placements has naturally grown, particularly for disadvantaged workers served by such programs.

In order to examine whether employment in the temporary help industry helps or hurts workers relative to other employment opportunities in the long-run, we explore the subsequent employment dynamics of workers in this industry and compare their experiences with those of workers who either do not have jobs or who take jobs in other industries (i.e., in end user firms). We focus our analysis on individuals in the state of Missouri who have sought employment assistance or cash support through any of three federal programs, Temporary Assistance for Needy Families, a job-training or intensive work search program (Job Training Partnership Act in 1997, Workforce Investment Act in 2001), and an employment exchange service (Wagner-Peyser services). We limit the sample to those at least 18 years of age but less than 65 and conduct analyses separately for men and women, although we omit the small number of men who enroll in TANF. We conduct analyses initially for those who begin participation during calendar year 1997, and then replicate our analyses for those entering these programs in 2001.

We begin our analysis by examining whether there are other industries that serve a role similar to that of the temporary help industry. We observe that individuals in our samples are particularly likely to move into temporary help employment and we consider whether this pattern can be observed for any other industries. Based on our analysis, we conclude that temporary help is unique in serving as a general transitional industry. Next we look at employment during the quarter following entry into the program, examining how employment and wages two years later are influenced by the sector of initial employment, and in particular, temporary help

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services. For the job training program and the labor exchange services, participation signals a decision to seek services to support employment efforts. Although those applying for TANF may not be seeking employment, Missouri's program, in keeping with federal reforms, emphasizes the importance of employment, and recipients who do not have an explicit exemption face employment and job training requirements. For many participants in each of these programs, entry into the program identifies a point of potential crisis in their work lives or careers. Our analysis allows us to consider the role that temporary employment and other industries play at such critical junctures in determining future labor market outcomes.

The use of state-level administrative data allows us to expand the scope of our analyses beyond existing studies. First, the long panel allows us to follow workers for an extended period after we first observe them in the temporary help industry. Our replication of the analysis over two time periods enables us to examine whether the effect of working in the temporary help industry varies across the business cycle. Second, because we have large sample sizes, we are able to compare the effect of working in the temporary help industry with the effect of working in a variety of other industries. For example, we can compare the long-run impact of working in the temporary help industry with the impact of working in another service industry or in the retail trade industry, which may be the more relevant comparison for these workers. Finally, the fact that we have data on workers from three different federal assistance programs, containing workers with very different characteristics and suffering from different types of employment shocks, allows us to examine the role that nonrandom selection has on our results.

The rest of the paper is organized as follows: In the next section we review the literature on the temporary help service industry. Section III discusses our data and section IV considers the role of the temporary help service industry in providing transitional employment. Section V

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presents estimates of the impact of temporary help employment on later earnings and employment, and Section VI considers the role that movements between jobs has in helping individuals achieve higher earnings and stable employment. In section VII, we consider the degree to which results are replicated for individuals participating in these programs in 2001, at a time when the economy was no longer growing as it had in the late 1990s. Section VIII turns to the issue of how robust our results are if the OLS assumption of an independent error is violated. The final section concludes.

II.   Literature

The past few years has seen a growing body of empirical evidence on the role and effects of temporary work. An important segment of this work, including our own, has focused on low-wage workers and individuals receiving public welfare. What is perhaps most notable in a review of this research is the consistency among empirical findings on the effects of temporary help services employment, despite the different data sets and sub-populations investigated.

First, there is strong agreement among a large number of studies that temporary help services jobs pay lower wages, offer fewer work hours, are shorter in tenure, and are significantly less likely to provide health insurance coverage or other fringe benefits (Autor and Houseman, 2005; Andersson, et al., 2002; Blank, 1998; Booth et al., 2000; Cohany, 1998; Heinrich et al., 2005; Houseman and Polivka, 1999; Houseman, Kalleberg and Erickcek, 2003; Lane et al., 2001, 2003; Nollen, 1996; Pavetti et al., 2000; Pawasarat, 1997; Segal and Sullivan, 1997). A smaller number of studies go beyond descriptive statistics to examine the employment and earnings paths or trajectories of welfare recipients and other low-wage workers who enter temporary help services employment. Lane et al. (2003), for example, look at matched samples

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of "at-risk disadvantaged workers"[1] from the Survey of Income and Program Participation (SIPP) and follow them for one year. They find that individuals who take temporary help services jobs have better employment and "job quality" outcomes than those who were not employed but that they fare slightly worse than those in other employment sectors in terms of earnings and benefits. They also note, however, that the negative effects of temporary employment compared to other sectors are mainly small and not statistically significant. In addition, they conclude that the effects of temporary help employment on reducing welfare receipt and poverty are "unambiguously positive" (p. 20).

The findings of Heinrich et al. (2005) mirror those of Lane et al., despite different populations of study. In this work, we use data on the populations of welfare recipients in Missouri and North Carolina to compare earnings, earnings growth, and patterns of welfare receipt for welfare recipients who go to work for temporary help services firms with those who do not work or have jobs with end-user firms, controlling for selection into temporary employment. After two years, we find very small differences (1-7 percent) in earnings between those who initially took temporary help jobs and those who entered jobs in other sectors, with measured characteristics explaining most of the differentials. The earnings of welfare recipients initially entering THS jobs increased faster over the two-year period, in part due to their movement into higher-paying industries. In addition, we find that temporary help workers were no more likely to be out of a job two years later and only slightly more likely to return to welfare

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[1] Lane et al. use propensity score matching to define comparison groups of workers for their temporary help worker sample. "At-risk" workers are defined as those with incomes less than 200 percent of the poverty level.

than workers in end user firms. Temporary help workers were substantially more likely to be employed and off of welfare two years later than recipients without a job.

Employing a relatively novel approach, Autor and Houseman (2005) take advantage of random assignment of welfare recipients to welfare-to-work contractors, where contractors vary in their referrals to THS firms. Under the assumption that such referrals are not correlated with other contractor practices that influence client success, they estimate the effects of holding a THS job on low-skilled workers' labor market outcomes. They find short-term earnings increases among the THS workers that do not persist, in part due to declines in rates of employment. They also find that THS workers fare more poorly over the subsequent two years in terms of their earnings relative to "direct-hire" placements and to welfare recipients with no job placements, although the large differences in earnings that they report among these groups are not statistically significant.

Anderson et al. (2002) use data from five states (California, Florida, Illinois, Maryland and North Carolina) in the Longitudinal Employer Household Dynamics program at the U.S. Census Bureau to analyze a sample of workers with persistently low labor market earnings. Like Heinrich et al. (2005) and Segal and Sullivan (1997), they find that low-wage workers starting in THS employment earn lower pay while employed by the temporary agency, but that subsequent job changes lead to higher wages and better job characteristics for these workers. Both Heinrich et al. and Anderson et al. observe that low-wage workers who begin work with THS firms are more likely to move to higher-paying industries, such as manufacturing, than those working in other sectors (or not working). Booth et al. (2000) focus on temporary employment in Britain, using data from the British Household Panel Survey and methods similar to Heinrich et al., and

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likewise find temporary employment to be an effective "stepping stone" to permanent employment.

Gagliarducci (2005) uses data from a longitudinal survey of Italian households to study transitions from temporary contracts to permanent employment. He finds that the chance of conversion into a permanent job increases with time in a single job but decreases for those who have a string of temporary contracts. Likewise, Andersson et al.'s (2005: 143) study of THS firms in the U.S. found that wage growth is impeded over time for those "who change jobs perpetually because they have difficulty gaining on-the-job training and accumulating tenure." In their study of temporary help agency workers in Spain, Garcia-Perez and Munoz-Bullon (2005) also found that temporary workers in the low occupational groups had much lower probabilities of securing a permanent job than more skilled workers. They concluded that these workers would have fared better had they not worked through these intermediaries. Of course, some caution in extending the results from Europe to the U.S. labor market is warranted.

The findings of these and related studies speak to important public policy questions about the use of labor market intermediaries for workforce development. Poppe et al. (2003) note that labor market intermediaries, both public and private, are increasingly seen as a solution to the problem of low-wage worker advancement. A recent study by Even and Macpherson (2003) found that "switching jobs is vital to significant wage growth among minimum wage workers, particularly for young workers who find themselves in 'low-training' occupations" (p. 677). And Andersson et al. (2005: 143) similarly concluded that "job changes account for the vast majority of 'complete' transitions out of low earnings and even for most partial changes."

We expect the results of our study to contribute to these policy debates and to likewise more generally inform questions about the role of public and private intermediaries in helping workers connect with and advance in jobs.

III. Data

Our basic sample consists of individuals who entered one of our three programs during 1997 or 2001. In each case, entry is defined as participation in a given quarter for an individual who was not a participant in the prior quarter. An individual who entered one of these programs during the year, exited and remained off for at least one quarter, and then reentered, will be included twice in the file for a given year. The number of such cases is very small. Information on program participation, as well as demographic information on individuals, comes from data maintained by the state of Missouri to administer these programs.

Temporary Assistance for Needy Families (TANF) data are from Missouri's Department of Social Services Income Maintenance file, which includes information on services received for all program recipients. The data are extracted on a monthly basis, and individuals are identified as new payees in a quarter if they are receiving cash payments under this program in a given quarter and were not recipients in the prior quarter. The small number of payees who are males, those in the two-parent program, and those receiving payments on behalf of "child only" cases are omitted.[2]

Job training in 1997 refers to the Job Training Partnership Act (JTPA) program, identified on administrative files maintained by Missouri's Division of Job Development and

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[2] We omit payees in child only cases because these individuals are exempt from employment and training requirements of the program.

Training, which administered the program within the Department of Economic Development. Job training participation in 2001 refers to the Workforce Investment Act (WIA) program, which replaced JTPA in July 2000, and was administered within the same department in the newly created Division of Workforce Development. All individuals enrolling in the "adult" or "dislocated worker" programs are included. Under JTPA, the adult program is means tested, limited to individuals whose income in the prior six months is below specified levels. Although not formally restricted in the same way, participants in the WIA adult program generally have low earnings. Dislocated workers are normally individuals who have lost their jobs in firm-wide layoffs. WIA regulations place less emphasis on job training than did JTPA, although, in practice, participants for both programs are a select group of individuals who receive a level of attention far beyond most of those who obtain employment exchange services. We refer to both as "job training" programs, although some individuals in these programs did not participate in training.

Given the differences in selection criteria, we expect those in the adult program to be disadvantaged relative to those in the dislocated work program. In fact, those in the adult program are younger, less well educated, and have dramatically lower prior earnings than those in the dislocated worker program. We undertook the basic analysis of this paper separately for these two groups, but given that the job training samples are of modest size, differences in results for these two groups were usually not statistically significant and were generally hard to interpret. We therefore present results based on the combined adult and dislocated worker programs.

Employment exchange files identify individuals who register for services provided under federal Wagner-Peyser legislation.[3] Most individuals who receive Unemployment Insurance (UI) payments are required to register for these services, and a substantial portion of job exchange registrants are UI recipients. However, anyone in the state is eligible to use job exchange services, so registrants include employed individuals who are seeking better employment prospects as well as other job seekers who are not receiving unemployment compensation.

Our data on earnings and employment history come from the UI programs in the states of Missouri and Kansas. Earnings for individuals in a quarter are reported by employers, and we are able to match these to program participants using Social Security numbers. Although these data exclude the self-employed, those in informal or illegal employment, and a small number of jobs exempt from Unemployment Insurance reporting requirements, they include the overwhelming majority of employment in these states. A very small proportion of Missouri residents hold jobs in states other than Kansas.[4] Our data allow us to identify all employers within a quarter for an individual, but we cannot determine whether jobs were held simultaneously or sequentially. All earnings in the analyses have been adjusted for inflation based on the consumer price index using quarter 2 of 1997 as the base.

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[3] In 1997, the state's job exchange service was administered by Missouri's Division of Employment Security in the Department of Labor and Industrial Relations. In 1999, the program was transferred to the Division of Workforce Development in the Department of Economic Development. The state's labor exchange program underwent substantial changes over this period. We discuss some of these changes when we compare 1997 and 2001 results in section VII below.

[4] Approximately one in six TANF residents in Jackson County, Missouri, the central county for Kansas City, holds a job in Kansas. The proportion of St. Louis residents with jobs in Illinois is much smaller due to the depressed economy of East St. Louis, Illinois.   No other significant concentrations of population are close to the state's borders.

Tables A-1 and A-2 provide means and standard deviations for each of our samples in 1997 and 2001, respectively. Looking at the panels for females, the statistics confirm that TANF entrants are substantially disadvantaged relative to the two other groups. For example, the mean number of years of completed schooling for welfare recipients is 11.3 in both years, at least a full year less than for the other groups. TANF recipients are younger, are more likely to be nonwhite, and have mean prior earnings that are generally less than half those of the others. As might be expected, TANF recipients have lower levels of job experience.

Participants in the job training and employment exchange programs differ from one another in somewhat more complex ways. Female job training participants are older but have about the same level of schooling, employment and earnings as employment exchange participants. Nonetheless, employment exchange participants are more likely to have worked none of the prior eight quarters, implying somewhat greater variation in the sample.

When we consider males (Tables A-1 and A-2, right panels), we see that comparisons between job training and employment exchange show patterns that are similar to those for females. There are, however, differences in the job training program participants by year. In 1997, job training participants have appreciably higher levels of education than do those receiving job exchange services, and nearly 17 percent have a college degree. In contrast in 2001, the level of education for the two programs is very similar, and with 7-8 percent of individuals with college degrees.

The statistics also provide information about industry of employment both four quarters prior to program entry and in the immediately subsequent quarter. We see that THS employment exhibits a substantial increase for all our samples but that eight quarters later THS is less important. It appears that THS employment is particularly important for individuals facing some

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kind of employment crisis as compared to those same individuals at other points in their careers. In the next section, we consider whether THS employment is unique in this respect.

IV.   Temporary Help Services as Transitional Employment

Our analysis focuses on individuals who are at a juncture in their careers, either because they have lost a job or because they are making plans to pursue alternative employment or vocational training. Given its explicit temporary structure, it is natural to view THS as a transitional industry. In the analysis here we look at the patterns of job shift following program entry and examine the kinds of industries that may serve this kind of transitional role. Our conclusion is that THS appears to be unique among industries in filling this role. We then turn to an examination of the factors that are associated with employment in the THS industry.

Table 1 provides a comparison of the industry of employment four quarters prior to program entry and in the quarter subsequent to entry. The first line in the table shows the proportion of people without jobs. Given the income test for TANF, it is not surprising that substantially more individuals are without jobs than in the other programs and that the proportion without jobs is particularly high in the quarter immediately following program entry. Although more of those in the job training program have a job prior to program entry, we observe that enrollment is associated with an increase in joblessness. The reverse is true for those who have contact with the employment exchange services, presumably reflecting the program's concern with immediate employment.

The percentages in the table for each industry group identify the proportion of the sample that are employed in a job in the specified industry group in a given quarter. Individuals with jobs in more than one industry contribute multiple counts. We include all major industry

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categories in the upper panel. The panels for two-digit, three-digit and four-digit industries list

only those industry groups that register at least 5 percent for at least one of our samples.

The role that temporary help jobs play in this structure can be seen in the figures for the

three-digit and four-digit personnel/help supply services categories near the bottom of Table 1.

We see that the proportion of individuals in such jobs increases following program enrollment

for each of our samples, with the magnitude of the increase ranging from nearly 50 percent to

over 100 percent. In the quarter following enrollment, the proportion with THS jobs is in the

range of 10 percent for all samples. None of the other industry groups identified in the table

shows this kind of pattern, except those industry groups that include THS employment (e.g.,

business services) and inherit this basic pattern from THS firms. Although we see that

employment in mining and construction jobs increases, it is clearly less important—especially

for women—than THS.

In addition to the tabulations reported, we undertook tabulations for all four-digit

industries to see if we could identify sets of industries that served the same function as THS

employment. Where we identified specific industries that attracted increases in employment

following enrollment, we found them to be of little quantitative importance. Often an industry

that appeared to serve as a transitional industry in one of our samples did not fill this role in

others. Consistent with the implications of Table 1, these comparisons suggest that THS is

unique among industries that we can identify.

Table 2 provides information on the factors that are associated with having jobs in THS

in the quarter following initial participation in the program. Since, in the analysis that follows,

we will be concerned about the impact of industry of employment during this quarter, we refer to

it as the "reference quarter." For ease of interpretation, we have divided employment into three

categories: THS only, THS and some other industry, and other industry only. The table reports coefficients of a multinomial logit model predicting type of job, with the omitted category no employment during the quarter.[5]

We observe that effects of age on employment are statistically significant, but they are inconsistent across samples. Among TANF and employment exchange participants, those who are older are less likely to be working, whereas older individuals are more likely to be working among job training participants.[6] Similarly, age does not consistently distinguish those who obtain THS jobs from those obtaining other jobs. In all three samples, the relationship between age and employment is nonlinear, as indicated by a squared term that is negative in all cases but one, and in most cases statistically significant. This implies that as individuals get older, in those samples where older individuals are more likely to work, an additional year of age is associated with smaller increases in levels of employment; and in those samples where older individuals are less likely to work, this effect is stronger at higher ages.

Our specification controls for education based on three measures: years of education and dummies for high school and bachelor's degrees. The dummy coefficients therefore identify effects of degrees beyond the linear impacts of years of schooling. In general, greater schooling is associated with higher levels of employment, and since the coefficients for the dummies identifying degree completion are not statistically significant for most samples, there is little evidence for deviations from a linear relationship. The exception is that for the employment

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[5] We also fitted models that controlled for industry of employment in the year prior to program entry. As expected, such controls reduce the impact of stable characteristics on industry choice, since such factors would partly affect industry choice through previous industry choices.

[6] Inferences about the impact of age are based on evaluating the derivative of the quadratic of the age function at age 33.

exchange samples (both for males and females), those with high school degrees are more likely to be working than the simple linear model would imply.

As might be expected, prior employment is a strong predictor of employment in the reference quarter; we see that the three coefficients measuring employment in the prior eight quarters are substantial, positive and of roughly similar size in all our samples. Those who have no observed employment during the prior eight quarters are particularly unlikely to hold a job in the reference quarter. While there are relatively few consistent differences between the determinants of THS and the determinants of other employment, we do observe that those who have worked continuously in the prior eight quarters are generally less likely to be in THS than in other employment.

Prior earnings are related to employment in a complex way. The coefficients for earnings in the year immediately prior are generally positive, while the coefficients for earnings two years earlier are generally negative. This may be interpreted as implying that it is growth in earnings that is predictive of employment. In most cases, the sum of these coefficients is positive, as might be expected, so higher average earnings are associated with a greater chance of employment. As a rule, prior earnings are less positively associated with temporary help work than with other employment, and in some samples, those with higher prior earnings are *less* likely to be employed in temporary help than to be not employed at all.

The coefficients for county unemployment rate confirm that those in depressed counties are less likely to be employed; in four of the five samples, they are particularly unlikely to be in both a temporary help job and another job. There is no consistent relationship between the county unemployment rate and holding a temporary help job as compared with another job.

Overall, we can conclude that age, education, prior employment experience and the local economy predict who will be employed, but these variables have very little power in distinguishing temporary help employment from other employment. In contrast, race is among the most important predictors of temporary help employment, with nonwhites much more likely to be in temporary help employment in all of our samples. This is particularly notable, since the relationship between other employment and race is generally small and inconsistent across our samples. Andersson et al. (2002) and Heinrich et al. (2005) similarly find that both black males and females and other nonwhite minorities are more likely to be employed in the temporary help services sector. Andersson et al. also find that black males are more likely than any other group to "escape" a pattern of persistently low earnings through temporary help employment.

Another important predictor of temporary help employment is region within the state. Those in metropolitan counties are much more likely to be in temporary help jobs than those in nonmetropolitan counties. Differences between large and small metropolitan areas are modest, as are differences between suburban and central metropolitan counties.

These results suggest that explanations about selection into temporary help jobs that rest primarily on arguments about general levels of human capital miss the mark. What matters most is "race and place." The explanation for the concentration of temporary help employment in metropolitan areas is undoubtedly the need for temporary help services to operate in an environment with a sufficient number of primary employers.

We suspect that the large impact of race stems from employer difficulty judging worker productivity. If employers believe they are less able to judge the ability of nonwhite workers or if they believe that nonwhite workers are generally less productive, they may be less willing to hire nonwhite workers into regular jobs that imply long-term commitments. In the absence of

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effective legal prohibition against use of race by employers in hiring, temporary help jobs may

provide valuable opportunities for nonwhites.

V.   Impacts of Temporary Help Experience on Earnings and Employment

In order to examine the impact of temporary help employment on ultimate earnings, we have

estimated a model that predicts earnings eight quarters after the reference quarter. Controls

include basic human capital measures as well as indicators of prior employment experience,

corresponding to the control variables in the logit equations reported in Table 2. In addition, we

control for industry prior to program entry, since we are interested in gauging the impact of a

temporary help job following program participation, not effects of prior experience.[7] Based on

the same model, we also perform a difference-in-difference analysis, where the dependent

variable is the difference in earnings between the outcome quarter and nine quarters prior to the

quarter of program entry.[8] Estimated coefficients for these regresssion equations are reported in

Table A-3.

Estimated effects on earnings

As a rule, coefficients for control variables are as expected and, although there are some

differences across our five samples (females in the three programs and males in job training and

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[7] The measure of prior industry is based on industry of employment in all four quarters prior to program entry. Each industry dummy is coded one if there is any quarter in which the industry of employment falls in the specified category. Results are not sensitive to inclusion of these measures.

[8] Such a symmetrical difference-in-difference specification controls for program selection by earnings if the time-varying component of earnings has a simple autoregressive structure (Ashenfelter and Card, 1985).

employment exchange), few are statistically significant and substantively important.[9] Among

the control variables for prior employment, the most important are the measures of earnings, both

in the year immediately prior to program entry and in the previous year.

Table 3 reports predicted quarterly earnings in the eighth quarter after the reference

quarter based on the regressions in Table A-3. For comparison, unadjusted earnings in the

reference quarter and the outcome quarter are presented, along with predicted impacts of

employment in various sectors relative to those not employed.

We focus first on the samples of females, which generally show consistent patterns. Line

1 shows that mean earnings in the reference quarter of those with only a temporary help job are

below those for individuals employed in all the other sectors and that, except for retail trade jobs,

the differences are substantial. Controls for individual characteristics (not shown) confirm that

these patterns are not primarily due to differences in measured characteristics. Clearly, entering

temporary help employment in the quarter after program entry is associated with a substantial

immediate income decrement relative to most other kinds of employment. Among those with

jobs in a single major industry, those with manufacturing jobs have the highest earnings. On the

other hand, when we look at those who hold jobs in multiple sectors, we see the role of

temporary help employment is less clearly damaging, since those who hold temporary THS jobs

in addition to other jobs have earnings that are at or close to the level for those in most other

sectors we have identified.

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[9] One inconsistency across samples is in the effect of race. We find that nonwhite TANF recipients have higher earnings than other TANF recipients, whereas in the other samples nonwhite earnings are lower, in keeping with most findings. The estimated impact in the TANF sample very likely reflects the strong selection of nonwhites into welfare. In a study of six metropolitan areas, Hotchkiss, King and Mueser (2005) also find that employment and earnings for nonwhites among TANF and AFDC recipients are higher than for whites.

Line 2 shows that, eight quarters later, the relative earnings of those initially in THS jobs have at least partly caught up with others. Earnings for temporary help workers increase by more than 50 percent in this period, an appreciably larger rate of growth than for any of our other industry categories.

Line 3 shows that the impact of controls is somewhat different for the three programs. In the case of TANF, it appears that those who take temporary help jobs are somewhat more advantaged than those in manufacturing, retail trade and service jobs, since controlling for background characteristics reduces the relative earnings of those in temporary help jobs. In contrast, for the other samples, the relative benefits of having a manufacturing job are partly explained by observable differences among people. The result is that for TANF and employment exchange participants, ultimate earnings are greater by up to 20 percent for those who had a manufacturing job rather than a temporary help job; for job training participants, there is no increment. We see that those with reference quarter employment in the "other" industry category have an ultimate earnings advantage.

The largest categories of employment for all our samples are retail trade and service. For all samples of females, the estimated impact on ultimate earnings of a retail trade job is below that of a temporary help job. Service jobs produce incomes about 10 percent higher than temporary help jobs in the TANF and job training samples, and at the same level for the employment exchange sample. Those with jobs in multiple sectors–whether or not they hold a temporary help job–generally have earnings that are above those with jobs in a single other sector except for manufacturing.

Line 4 indicates that the impact of holding any job–regardless of industry–is positive across the three samples of females. The employment exchange sample yields estimates of the

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impact of holding a job that are substantially above estimates for the other two samples. Parallel estimates based on the difference-in-difference model are presented in line 5. These results are essentially the same as those reported in line 4.

Our conclusion is that temporary help employment has few deleterious effects on earnings relative to other industries for women eight quarters later. Earnings growth is greater than any other job and ultimate earnings are on a par with those obtained in the most common industries. Outcomes for those with any employment in the reference quarter are appreciably better than for those who don't obtain employment.

Patterns for males are similar to those for females. Earnings in the reference quarter for those in THS jobs alone are appreciably below that in all other categories, and less than half of earnings in manufacturing. However, earnings growth for those in temporary help is much higher, about 50 percent over the two year period, compared to less than 25 percent for other categories. As a result, the difference between temporary help and the highest paid industries is substantially reduced in the outcome quarter.

Line 3 indicates that more than half of the remaining difference is explained by individual characteristics. In the employment exchange sample, we see that those with any employment have appreciably higher earnings than those without jobs, but that those in temporary help have earnings at least slightly below those in every other sector. Those with manufacturing jobs have ultimate earnings that are predicted to be 43 percent above observationally similar individuals with temporary help jobs.

When we look at the predicted earnings of males who hold both a THS job and a job in another sector, we see that the predicted earnings are somewhat higher than for those with just

temporary help jobs, and they are comparable to those for all industry groups except for manufacturing in the employment exchange sample.

Estimated effects on employment

Table A-4 provides estimated results for a linear probability model in which the dependent variable is employment eight quarters after the reference quarter. Control variables are identical to those in the Table A-3. Table 4 provides parallel measures indicating expected levels of employment eight quarters later based on sector of employment in the reference quarter.

The patterns of results parallel those for earnings (reported in Table 3) fairly closely. The likelihood of employment eight quarters later is strongly associated with employment in any sector in the reference quarter. Among TANF participants, there is basically no difference between those with employment in THS and other industries in terms of ultimate employment.

Differences between men and women are small in the two programs they have in common. Although those in temporary help jobs are slightly less likely to work in the outcome quarter than those in most other categories, the difference is small once we control for individual characteristics (line 3). In fact, the difference between temporary help workers and others in terms of ultimate employment is, as might be expected, substantially smaller than the difference in earnings. Those with jobs in temporary help as well as another job during the reference quarter have high rates of later employment.

VI.   Transitions between Sectors

The analysis above shows that, although individuals in temporary help service jobs receive lower earnings, over time this earnings disadvantage declines. In part, this reflects movement into more remunerative jobs outside the temporary help sector. In Table 5, we examine movements

between sectors over eight quarters. The listings on the left of the table indicate the employment sector during the reference quarter, and percentages indicate the proportion of each group in the listed categories eight quarters later. These tabulations show that those in temporary help positions are much more likely to move into some other major sector than are individuals in any of the other major sectors.

Consider the proportion of individuals in temporary help service positions who remain in any service positions. Among TANF recipients, some 28 percent of THS employees are in service positions (including THS) eight quarters later, whereas 42 percent of other service workers are in some kind of service position. The comparisons are even more dramatic for females entering job training or the employment exchange. Whereas in each case the percent of temporary help workers remaining in service positions is also 28 percent, over 50 percent of other service workers remain in service positions.

We can also see that temporary help workers are more likely to move into manufacturing positions than are any other category of worker, with the exception of those in manufacturing or in multiple sectors. For example, among females receiving employment exchange services who are in THS positions in the reference quarter, 8.9 percent are in manufacturing eight quarters later. For those in retail trade, service or other industries, no more than 4 percent move to the manufacturing sector eight quarters later. THS workers are also very likely to end up in jobs in multiple sectors, with more than one in ten temporary help workers so classified eight quarters later.

The importance of moves between industries is illustrated in Table 6. Line 1 repeats the impact estimates from Table 3 (line 4), showing how reference quarter jobs in each of the industries influence earnings (two years later), relative to holding no job. Lines 2 and 3 are

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based on estimates from a model that controls for both reference quarter industry and outcome

quarter industry. The estimates in line 2 confirm the view that once we have taken into account

whether the individual is employed and the industry of employment in the outcome quarter, prior

industry of employment is relatively *un*important. For example, among TANF participants,

those with temporary help jobs are predicted to have earnings in the outcome quarter that are

$421 higher than those with no jobs (line 1); once industry in the outcome quarter is controlled,

that increment declines to $123. Line 1 implies that ultimate earnings are expected to be $263

higher for those with manufacturing jobs than for temporary help jobs, a difference that declines

to $81 (which is not statistically significant) when ultimate industry is controlled.

The basic pattern is the same for all programs and for males and females. In the two job

training samples, effects of temporary help or manufacturing employment reported in line 2 are

generally negative and not statistically significant; since sampling errors are large, it is not clear

whether actual effects differ from those in the other samples. In both employment exchange

samples, the effects of industry in the reference quarter are statistically significant even when

ultimate industry is controlled, but clearly effects of this kind are of second-order importance.

The primary way that reference quarter industry influences outcomes is through its impact on

ultimate industry of employment.

Coefficients in line 3 show that movement into other employment is particularly valuable

for those with reference quarter jobs in temporary help. In every sample, those who ultimately

end up in temporary help jobs have the lowest earnings of any industry category, and the

difference is often substantial. This contrasts with estimates in line 1, which show that a

temporary help job in the reference quarter is not associated with appreciably lower earnings

than most other categories. Clearly, those who do not move out of temporary help jobs are likely

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to be disadvantaged. The contrast with retail trade jobs is of interest. Individuals initially in such jobs do less well than those in temporary help, but if they stay in those jobs, their earnings are actually higher than temporary help workers who stay in temporary help.

VII.   Changes in the Role of Temporary Help Employment: Comparisons with 2001

The previous analyses consider the impacts of temporary help employment for those facing career breaks in 1997, and as such it covers a period of extraordinary economic growth in Missouri and the country as a whole. Missouri's unemployment rate was approximately 4 percent during 1997 and early 1998, when individuals entered the programs and obtained initial jobs, and it had declined further, to around 3 percent, eight quarters later when we consider their employment outcomes. Over the three years 1997-1999, employment in Missouri grew by 4.4 percent.[10] It is possible that the role of temporary help may not be reproduced in a period of slower growth. Temporary help jobs may be harder to get when the economy is not growing, and those who take them may have a harder time moving onward from them.

For that reason, we have replicated our analysis for those entering these programs in 2001. During 2001, the unemployment rate in Missouri increased from about 4 percent at the beginning of the year to about 5 percent at the end. Eight quarters later, unemployment had increased to over 5.5 percent, and it would peak at 6 percent around the middle of 2004. Overall employment over the three-year period 2001-2004 declined by 1.5 percent.[11] Although the recession in Missouri—as in the rest of the nation—was mild by historical standards, the difference between 1997-1999 and 2001-2003 was great.

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[10] Employment growth for January 1997-January 2000.
[11] Employment growth for January 2001-January 2004.

The programs underwent changes between 1997 and 2001, and there is no certainty that the selection of individuals or the program impacts will be precisely the same. Welfare reform at the state and federal levels affected the character of TANF during the 1990s. Major federal legislation was implemented in Missouri in 1996, and state administrative and legislative accommodations occurred over the next several years. Nonetheless, the basic structure of the program, and especially its emphasis on employment, was in place by 1997.

As noted above, the formal structure of WIA, which replaced JTPA in 2000, was different in many ways. Among the most important differences is that WIA formally provides for several levels of job search services that may supplant training for some clients. Yet, the differences are undoubtedly greater in the formal structure than in practice. In many cases, the organizations and individuals overseeing WIA and JTPA are the same. Like JTPA, WIA recruits and selects participants and is held accountable for the employment success of those who enter the program.

Employment exchange services are available to anyone who seeks them, and the amount of time a client spends with a counselor or in job-related programs is generally quite limited. There have been some changes in administration of the program over the period 1997-2001. By 2001, most job exchange services were provided in "one-stop" centers providing a variety of job-related services, including job training, replacing the stand-alone offices that previously supported the state's Unemployment Insurance program. Nonetheless, in both 1997 and 2001, a large share of clients were individuals receiving Unemployment Insurance payments who were required to participate in the program.

As noted above, when we compare the characteristics of individuals in the three programs (Tables A-1 and A-2), the patterns of participant characteristics across programs are

similar for the two periods. Comparing Table 7 with Table 1, we see that in 2001 THS employment continues to play the transitional role we observed in 1997, with increased temporary help employment immediately following program entry. There are some differences, however. Both TANF and job training participants have appreciably higher levels of THS employment prior to program participation than do participants in 1997. Thus, for job training participants the increase in THS employment between the prior quarter and the immediately subsequent quarter in 2001 is smaller, and for TANF recipients we observe a small decline. Nonetheless, there is no alternative industry that serves as a transition structure, and the decline observed for THS among TANF recipients is smaller than the overall decline in employment.

The importance of large scale layoffs for 2001 participants in the job training program is apparent in Table 7. For men, we observe large declines—proportionally—in the employment in industrial machinery and equipment and in transportation equipment, and we observe declines for both men and women in electrical and electronic equipment (all two digit industries).

We replicate our analysis predicting industry of employment in the quarter following program entry; results for 2001 are reported in Table A-5, paralleling those reported in Table 2. The similarities in the patterns of the coefficients are striking, and most differences are not statistically significant.[12] We see that employment seems to be more strongly associated with education—but not necessarily high school graduation—in 2001 than in 1997. One difference is that the selection of nonwhites into THS employment is somewhat less strong in 2001, and THS employment is somewhat less strongly associated with the large metropolitan areas. Still, the

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[12] Statistical significance for differences between the 1997 and 2001 analyses are based on one-to-one comparisons of parallel estimates for a given program.

conclusion that "race and place" are the two most important determinants of THS employment continues to be true in 2001.

Table 8 provides estimates based on program participants in 2001 of the effect of THS and other employment during the quarter following participation on earnings eight quarters later. The first and most important conclusion is that the pattern of results is very similar to that for 1997 program participants. There are a number of statistically significant differences. For example, mean initial (reference year) earnings are often higher for TANF participants in 2001, whereas earnings (eight quarters later) are lower. For females obtaining employment exchange services, earnings are, similarly, initially higher in 2001, but they are also higher in the outcome quarter. For females and males in job training, differences between years are small and not statistically significant. For males in the job exchange program, initial earnings are higher in 2001 than in 1997, but outcome earnings are inconsistent across initial occupation.

The patterns of effects for industries correspond closely. Perhaps most significant, if we examine the impact of a THS job as compared to no job (column 2, lines 4 and 5), the difference between the estimated effects for 1997 and 2001 is never statistically significant. In both periods, temporary help employment is associated with a larger expected benefit for those in the employment exchange program than for those in other programs.

Relative to other employment, the impact of THS employment is estimated to be slightly less beneficial in the later period. For example, for female employment exchange participants in 1997, the benefit of having an initial THS job relative to no job was $1,267. The additional increment of having a manufacturing job was $521 above that. In 2001, the comparable benefit for a THS job was very similar ($1,286), but the increment over that for a manufacturing job had increased to $854. This is typical of the observed differences for both men and women. The

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differences over time are never more than a few hundred dollars, but they are generally

consistent across programs even where they are not statistically significant. Based on the two

estimation approaches (lines 4 and 5), if we consider all alternative industries and combinations

of industries, we have 60 comparisons of the increment of an industry relative to THS. In 46 of

these comparisons, the benefit of having an alternative job relative to a THS job increased

between 1997 and 2001.

We also examined the effect of initial THS employment for the 2001 samples on whether

the individual is employed eight quarters later, corresponding with the estimates reported in

Table 4 for 1997. Our findings for employment correspond closely with those for earnings.

Although the benefit of having a temporary help job relative to having no job remains

unchanged, the incremental benefit of other kinds of jobs has increased in 2001. This

improvement is apparent for all samples except for the sample of males participating in the

employment exchange services. In this very large sample, the effects of THS employment

relative to other industries are essentially the same for 1997 and 2001.

Taken together, the comparison of estimates of impact on earnings and employment for

program participants in 2001 and 1997 confirms the view that, in a sluggish labor market,

alternatives to temporary help employment provide greater relative benefits than when the

economy is strong. The consistency of these results across programs implies that our findings

are not an artifact of the changes in program structure that occurred over this period.

We performed analyses for program enrollees in 2001 looking at the transitions between

sectors over the eight quarters following the reference quarter and the relative importance of

initial industry and ultimate industry in determining earnings. These analyses, which parallel

those reported in Tables 5 and 6 for 1997 are reported in Tables A-7 and A-8. As might be

expected, in the more recent period, individuals are more likely to find themselves without a job in the final quarter, but the pattern of results is very similar for both sets of analyses.

Notwithstanding the differences highlighted in this section, analyses for 2001 produce substantive conclusions that are identical to those for 1997. It is clear that whatever role the temporary help sector plays in the careers of individuals facing employment difficulties, this does not depend critically on economic growth.

VIII. Robustness Tests of Industry Impact Estimates

Implicit in our estimates of the effect of industry of employment on later earnings and employment is the assumption that no unmeasured individual characteristics affect both industry and ultimate earnings. Although it is not possible to verify that no such factors exist, we believe the approach taken here minimizes their importance. The analysis above controls for a variety of measures reflecting pre-program labor market experience, as well as standard demographic characteristics. Because we observe people in a period when they are experiencing employment distress, the randomness of the labor market may be of greater importance than at other times in their lives. The assumption that unmeasured factors do not seriously bias results is supported by our earlier results based on TANF recipients in Missouri and North Carolina (Heinrich, Mueser and Troske, 2005), which found no evidence that selection into initial jobs altered estimates.

Nonetheless, it is difficult to assure that the individuals who obtain jobs, or obtain jobs in various industries, are not different in unmeasured ways from observationally identical individuals without jobs or with jobs in other industries. In a recent analysis of the effects of Catholic school attendance on student outcomes, Altonji, Elder and Taber (2005) suggest that we may obtain information on the likely impact of unmeasured factors by examining those variables

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used to control for measured differences. In particular, they argue that individual characteristics captured in measured variables may be expected to be similar to unmeasured factors influencing individual outcomes. They propose a statistical test to determine whether observed estimates of causal impacts could likely be spurious. Their work follows directly from an earlier analysis by Murphy and Topel (1990).

Formal structure[13]

Consider our estimation equation

$$Y = D\alpha + X\gamma + \varepsilon + u , \tag{1}$$

where Y is the outcome measure (quarterly earnings or employment), D is a vector of dummy variables identifying industry of employment in the reference quarter with no job the omitted category, X is a vector of control variables (including a constant), ε is the component of unmeasured determinants that reflects factors that may be associated with industry of employment in the reference quarter, and u is an independent error reflecting variation that is inherently unstable from quarter to quarter. α and γ are vectors of coefficients that we have estimated by OLS under the assumption that $(\varepsilon + u)$ is uncorrelated with D or X. The methods presented here are designed to help in considering whether the correlation between D and ε may cause the estimated coefficients $\hat{\alpha}$ to be spurious.

We wish to separately consider each of the seven industry categories that are used to identify employment during the reference quarter. We will therefore focus on individuals in each industry category, comparing them with individual with no jobs. For simplicity, our

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[13] For details of this approach, see Altonji, et al. (2005), from which the following discussion is largely drawn.

analysis will assume that there are no interaction effects between D and X in predicting earnings or employment.

Consider the relationship between the dummy identifying employment in a particular industry k and the determinants of the outcome variable, $X\gamma$ and ε. Focusing on the sample limited to those with no job $(D_0 = 1)$ or those with a job in industry k $(D_k = 1)$, we write,

$$E(D_k \mid (X\gamma), \varepsilon) = \phi_{0k} + \phi_{X\gamma,k}(X\gamma) + \phi_{\varepsilon k}\varepsilon. \tag{2}$$

If $\phi_{\varepsilon k} > 0$, this implies that the estimate of α_k based on (1) will be biased. In particular, the standard formula for bias implies that

$$E(\hat{\alpha}_k) = \alpha_k + \phi_{\varepsilon k} \frac{Var(\varepsilon)}{Var(\tilde{D}_k)}, \tag{3}$$

where $\tilde{D}_k$ is the industry dummy purged of its correlation with X.[14] If unmeasured factors influencing earnings and employment are similar to measured factors, we might expect that $\phi_{X\gamma,k}$ and $\phi_{\varepsilon k}$ would be similar. In fact, Altonji et al. (2005) show that if there are a large enough number of variables predicting the outcome and if no small subset is disproportionately important in terms of explanatory power, we have $\phi_{X\gamma,k} = \phi_{\varepsilon k}$.

Using the bias estimate in (3), we can see that the true coefficient would be zero if the estimated coefficient were equal to the critical value $\phi_{\varepsilon k}^*$, i.e.,

$$\hat{\phi}_{\varepsilon k} = \phi_{\varepsilon k}^* \equiv \hat{\alpha}_k \frac{Var(\tilde{D}_k)}{Var(\varepsilon)}, \tag{4}$$

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[14] $\tilde{D}_k = D_k - X\beta_k$, where β_k is the vector of coefficients estimated from a regression of D_k on X.

where we have substituted the estimated value $\hat{\alpha}_k$ for $E(\hat{\alpha}_k)$. The ratio $\phi^*_{\varepsilon k} / \phi_{X\gamma,k}$ indicates how large the coefficient for the unobserved error term would have to be relative to the coefficient for observed determinants of the outcome in order for $\tilde{\alpha}_k$ to be entirely spurious.

If the ratio is close to one, we know that if unmeasured variables influencing the outcome are similar to measured variables in terms of their relationship to industry of employment, the estimated coefficient is spurious. Similarly, small values of this ratio suggest that even if many of the unmeasured determinants were independent of industry choice, the estimated coefficient would be spurious if some of the determinants were similar to the measured determinants. Hence, a ratio greater than zero but not appreciably greater than one suggests that the estimated coefficient could plausibly be spurious. In contrast, if the ratio is appreciably larger than one, this implies that unmeasured determinants would have to be more strongly related to the industry than observed variables in order for the estimated coefficient to be spurious. Finally, a negative coefficient suggests that unmeasured determinants would need to be qualitatively different than measured determinants to render the estimate coefficients spurious.

Implementation

The estimate $\hat{\alpha}_k$ is based on (1) above. However, the other terms in the ratio are based on the null hypothesis that this coefficient is zero. Hence, our estimates of $\hat{\gamma}$ in (4) are based on a regression corresponding to (1) but that omits *D*.

It is also necessary to identify ε, which is the component in earnings or employment that may be tied to individual characteristics or decisions made eight quarters earlier; which is in contrast to variation in earnings from quarter to quarter due to variation in *u*. This is accomplished using earnings in adjacent quarters for a given individual. In particular, we rewrite

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the equation identifying the determinants of outcome earnings or employment to distinguish

across quarters:[15]

$$Y_t = X\gamma_t + [\pi^t \varepsilon + u_t],\qquad(5)$$

where we assume an autoregressive error structure of the form $u_t = \rho u_{t-1} + v_t$, where v_t is an

independent error term, and we take π and ρ as a parameters. The variable t indexes quarters,

and we take the outcome quarter (which is eight quarters after the reference quarter) as $t=0$, so

we have $\pi^t = 1$ at $t = 0$. At $t=0$, (5) is equivalent to (1) with the industry dummies omitted. The

term ε identifies the stable component of the unmeasured determinants of Y, and the term

π allows for it to grow or decline in importance.

The expression in brackets in (5) can be estimated as the residual of a regression of

earnings on X in a given quarter t. The variances and covariances of the residuals for three

successive quarters (the outcome quarter, and quarters immediately prior and subsequent to the

outcome quarter) can then be used to estimate π, ρ, and $Var(\varepsilon)$.[16]

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[15] Reference quarter industry is omitted, given the null hypothesis that industry has no causal impact.

[16] Denoting $\tilde{Y}_t \equiv [\pi^t \varepsilon + u_t]$, the six equations defining the system are written as

$$Cov(\tilde{Y}_{-1}, \tilde{Y}_0) = \pi^{-1} Var(\varepsilon) + \rho Var(u_{-1})$$
$$Cov(\tilde{Y}_0, \tilde{Y}_1) = \pi Var(\varepsilon) + \rho Var(u_0)$$
$$Cov(\tilde{Y}_{-1}, \tilde{Y}_1) = Var(\varepsilon) + \rho^2 Var(u_{-1})$$
$$Var(\tilde{Y}_{-1}) = \pi^{-2} Var(\varepsilon) + Var(u_{-1})$$
$$Var(\tilde{Y}_0) = Var(\varepsilon) + Var(u_0)$$
$$Var(\tilde{Y}_1) = \pi^2 Var(\varepsilon) + Var(u_1)$$

These six equations can be solved for the six unknowns, π, ρ, $Var(\varepsilon)$, $Var(u_{-1})$, $Var(u_0)$, and $Var(u_1)$. Murphy and Topel use a related method to identify the stable and transient components of earnings.

The estimate of $\phi_{X\gamma,k}$ is obtained directly from the regression of the industry dummy for k in a regression limited to those in that industry and in no job during the reference quarter, i.e,

$$D_k = \phi_{0k} + \phi_{X\gamma,k}(X\gamma) + v.$$

However, as Murphy and Topel note, it may be that we believe omitted determinants of income are more closely associated with certain observed measures than with others. We have grouped selected variables so that the relationship for each grouping can be considered. In particular, we estimate ϕ_{ik} in the equation

$$D_k = \phi_{0k} + \sum_i \phi_{ik} Z_i + v',$$

where $Z_i = \sum_{X_j \in G_i} \gamma_j X_j$, γ_j is the coefficient of X_j in the regression predicting the outcome, and G_i is the set of variables in group i. The groups are constructed to include all variables in X. If we believe that unmeasured determinants of earnings or employment are similar to a particular set of variables, the value of ϕ_{ik} associated with that group may provide a better comparison to the error term than the full set of variables.

In addition to reporting $\phi_{\varepsilon k}^* / \phi_{X\gamma,k}$, we also report the implied ratio $\phi_{\varepsilon k}^* / \phi_{ik}$ for education variables (years of education, high school degree, college degree) and for prior employment activities (five measures of work activity in the two years prior to program entry).

Results

Table 9 provides diagnostics relevant to industry effect estimates that are reported in Table 3 (program entry in 1997) and Table 8 (program entry in 2001). We focus on estimates of the impact relative to the no employment category. The estimates in line 4 of those tables are reproduced in line 2 of Table 9. Line 1 in Table 9 presents the simple difference in earnings between those with reference category jobs in a given industry and those with no jobs. The

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difference between estimates in lines 1 and 2 indicates how controls affect the estimate. Where the difference is large, this implies that controls predicting earnings are strongly related to the industry, and in those cases our diagnostics will generally imply that the observed coefficient could be spurious. Line 4 lists the value of the implied ratio $\phi^*_{\varepsilon k}/\phi_{X\gamma,k}$ based on all variables taken together, and lines 5 and 6 provide $\phi^*_{\varepsilon k}/\phi_{ik}$, for education and prior labor market activity, respectively. In the discussion that follows, if the implied ratio is between 0.0 and 1.2, we assume that the error term could well be spurious; a ratio outside that range will be taken as an indicator that the estimated coefficient is not spurious.

Considering first TANF recipients in 1997, we see that line 4 implies that the estimated effects could easily be spurious. The same conclusion holds if we consider prior market activity, as indicated in line 6. In contrast, the results reported in line 5 show that, for five of the seven industry categories, the unmeasured determinants would have to be related to industry in a very different fashion than is education for estimates to be completely spurious.

As we look across the different samples, we see that there are substantial differences in the value of the implied ratio. However, there are some regularities. For THS, considering the results in line 4 (based on all variables), we see that seven of the ten ratios are outside the range (0.0-1.2) that would imply the estimated coefficients were spurious. If we use education as the comparison measure (line 5), we count four outside that range, and if we examine prior market activity (line 6) we count six. Hence, in appreciably more than half of the cases, the unmeasured determinants of earnings would have to differ quite dramatically from the measured variables— in terms of their relationship with THS employment—for the estimated impact of THS employment to be spurious.

If we look at other industries, the categories of retail trade and the multiple industries category that includes THS also yield ratios outside the 0-1.2 range, suggesting a robust underlying impact. In contrast, the implied ratios for coefficients of the three other industry categories support the robustness of these coefficients in only about a third of the cases.

These results reflect the fact that in some cases, the measured variables that predict earnings are more strongly associated with industry differences than in other cases. The variation across tests presented here underscores the point that these tests are not definitive. Not only is there no certainty that unmeasured factors will be related to industry as are measured determinants, but it is clear that there is no "typical" measured determinant. Nonetheless, the tests do allow us to reject the view that estimated coefficients can be fully explained by unmeasured factors that are similar to measured factors.

We estimated ratios corresponding to those in Table 9 but taking employment during the outcome quarter as the dependent variable. In this case, results are somewhat different. For every industry, the ratios were in the range 0-1.2 in at least two-thirds of the cases. For THS, in 80 percent of the tests, the ratio was in this range. Although individual industry results for specific samples differed depending on which ratio was considered, the overall pattern of results was the same. These results suggest that in the case of employment, it is much easier to argue that unmeasured factors may be responsible for inducing spurious coefficients estimates.

Nevertheless, the difference in the results for earnings and employment may reflect difficulties in applying diagnostic methods. Altonji et al. (2005) caution that where measured variables explain only a small portion of the variance in the dependent variable, making inferences about the structure of unmeasured factors is risky. In the case of earnings, measured variables explain between 28 and 57 percent of the variance in the stable portion of earnings,

with most between 40 and 50 percent. This means that slightly more than half of the variation is due to unmeasured factors. In contrast, in the case of employment, in most cases, measured variables explain less than 25 percent of the variance. The test is therefore less likely to provide useful information in the latter case.

Overall, our results support the view that estimated effects of reference quarter industry—and especially THS employment—on outcome earnings are very likely at least partly causal. Although one cannot reject the possibility that unmeasured factors both induce individuals to take certain kinds of jobs and affect earnings, the particular structure of the unmeasured correlates of industry would have to be quite different than measured factors in most cases to imply that estimated effects are zero. It appears implausible that all estimated effects of THS and other industries on earnings are spurious. Although findings are less supportive of the view that employment effects of reference quarter industry are causal, our ability to make inferences is limited by the structure of the test we are using.

IX.   Conclusion

Perhaps the most notable finding is that the basic patterns of results are very similar across three programs and two points in time for both men and women. The female samples receiving employment exchange services and job training are very heterogeneous and substantially different from the TANF recipients, yet the role of temporary help employment is remarkably similar. While earnings for men are higher and estimated impacts somewhat larger, again it is the similarities in results that are most striking.

In all of our samples, there is little question that, on average, those who can obtain manufacturing jobs or jobs in several other industries during the reference quarter have higher

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ultimate earnings than those who obtain THS jobs. This earnings advantage is higher in a recessionary period. But it is also clear that for many of these individuals, the choice of jobs is very limited, and difficulties obtaining desirable jobs are particularly severe during economic downturns. We see no other jobs filling a similar transitional role to that provided by temporary employment for individuals facing employment difficulties. Its unique transitional role suggests that for many individuals, temporary help employment may well be available when other kinds of jobs are not. The fears that individuals who make the choice to take such a job will remain trapped in low wage and unstable jobs are clearly unfounded; we see no evidence that a strategy of waiting for a "better" job yields any benefits at all.

The heterogeneity of our samples supports the view that our results are highly generalizable. Some of the existing studies tend to focus on much smaller selected samples. The results of Autor and Houseman, in particular, which question the value of referrals to temporary help work, use a sample of TANF recipients, almost all of them nonwhite, from a single inner city. The research of Andersson et al. (2005: 145), which uses a sample of "low earners" drawn from the longitudinal employer-household dynamics data in five states (from 1993 to 2001), reaches a conclusion similar to our study that temporary help agencies have been generally "successful in improving the outcomes associated with low earners."

In terms of the implications for workforce development policies, it is clear that both males and females, coming through the employment exchange, job training or TANF programs, fare better in terms of earnings and earnings growth when they take jobs with temporary help service firms if the alternative is no employment. If temporary help service firms facilitate quicker access to jobs for those seeking employment assistance, then expanded use of these firms in workforce development programs will generate net benefits.

Even if temporary help jobs do partly supplant other jobs, since the majority of jobs are in the retail trade and service sectors, the costs are small. Yet it is also clear that, for most low-wage or disadvantaged workers, the key to labor market success via the path of a temporary help services firm is through a subsequent transition to a job in another sector. If policymakers choose to explore a greater role for temporary help services firms in helping those seeking employment assistance to find and advance in jobs, tracking these firms' success in facilitating placements of workers into permanent jobs in other sectors might be particularly important in evaluating the policy's effectiveness.

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Table 1: Distribution of Employment Across Industries Prior and Subsequent to Program Entry in 1997

	Females						Males			
	TANF		Job Training		Employment Exchange		Job Training		Employment Exchange	
	4 Quarters before Entry	1 Quarter after Entry	4 Quarters before Entry	1 Quarter after Entry	4 Quarters before Entry	1 Quarter after Entry	4 Quarters before Entry	1 Quarter after Entry	4 Quarters before Entry	1 Quarter after Entry
No job	47.49	52.68	36.60	40.75	36.26	33.39	33.36	34.74	35.25	32.05
Major industry group										
0 Agriculture, forestry, and fishing	0.68	0.35	1.11	0.83	1.16	0.59	1.52	0.83	1.88	1.50
1 Mining, construction	0.43	0.53	0.50	0.69	0.91	1.01	3.53	4.00	9.86	11.09
2, 3 Manufacturing	5.99	5.01	16.06	9.81	11.38	13.16	21.43	17.73	16.88	19.21
4 Transportation, communications, electric, gas, and sanitary services	1.50	1.42	3.15	2.95	2.72	3.09	6.87	9.31	5.00	5.56
5 Wholesale trade, retail trade	22.82	18.85	16.97	14.73	21.83	21.66	17.31	15.59	19.29	19.14
6 Finance, insurance, and real estate	1.59	1.51	3.65	4.79	3.60	3.97	1.68	1.72	1.52	1.58
7, 8 Services	28.79	28.66	29.29	35.28	29.01	35.58	23.22	29.76	16.81	22.15
9 Public administration	0.68	0.57	1.17	2.15	1.62	1.79	1.55	2.41	1.81	1.71
2-digit industry										
17 Special trade contractors	0.30	0.32	0.30	0.28	0.51	0.52	2.11	2.58	5.98	6.82
58 Eating and drinking places	12.34	9.09	5.18	4.38	8.90	8.32	4.43	3.57	6.64	6.30
73 Business services	9.36	11.71	8.64	13.37	7.25	12.75	11.20	16.55	7.08	12.36
80 Health services	9.54	8.22	11.26	11.22	8.78	8.81	3.20	2.54	2.02	1.91
3-digit industry										
581 Eating and drinking places	12.34	9.09	5.18	4.38	8.90	8.32	4.43	3.57	6.64	6.30
736 Personnel supply services	6.11	8.77	5.42	9.46	4.08	9.03	6.70	11.46	4.19	8.98
805 Nursing and personal care facilities	6.56	5.76	3.86	4.58	3.95	4.26	1.22	1.09	0.86	0.87
806 Hospitals	1.67	1.32	5.40	2.26	2.49	2.34	1.55	0.69	0.82	0.77
4-digit industry										
5810 Eating and drinking places	11.98	8.90	5.10	4.38	8.71	8.18	4.33	3.50	6.42	6.15
7363 THS	5.86	8.55	5.18	9.11	3.87	8.73	6.54	11.10	4.08	8.78
8051 Skilled nursing care facilities	5.32	4.51	3.17	3.67	3.04	3.33	0.96	0.79	0.68	0.69
8062 General medical and surgical hospitals	1.51	1.18	5.21	2.10	2.22	2.09	1.39	0.56	0.69	0.64

Table 2: Multinomial Logit Estimation of Job Choice: Quarter Following Program Entry in 1997

	Females									Males					
	TANF			Job Training			Employment Exchange			Job Training			Employment Exchange		
	Job in THS	Job in THS and Other Industry	Job, but none in THS	Job in THS	Job in THS and Other Industry	Job, but none in THS	Job in THS	Job in THS and Other Industry	Job, but none in THS	Job in THS	Job in THS and Other Industry	Job, but none in THS	Job in THS	Job in THS and Other Industry	Job, but none in THS
Constant	-6.648 (0.574)	-6.019 (0.647)	-1.724 (0.241)	-7.374 (1.198)	-5.936 (1.272)	-1.408 (0.526)	-4.483 (0.262)	-4.351 (0.255)	-0.186 (0.113)	-4.346 (1.412)	-4.371 (1.379)	-0.032 (0.685)	-3.711 (0.224)	-3.551 (0.228)	0.129 (0.103)
Age	0.131 (0.030)	0.133 (0.036)	0.026 (0.013)	0.071 (0.049)	0.071 (0.052)	0.045 (0.021)	0.054 (0.009)	0.018 (0.009)	-0.013 (0.004)	0.108 (0.061)	0.057 (0.059)	0.080 (0.029)	0.053 (0.008)	0.039 (0.009)	-0.026 (0.004)
Age square *100	-0.203 (0.048)	-0.237 (0.058)	-0.065 (0.020)	-0.093 (0.061)	-0.103 (0.065)	-0.063 (0.026)	-0.092 (0.013)	-0.063 (0.013)	-0.008 (0.005)	-0.126 (0.076)	-0.083 (0.075)	-0.119 (0.035)	-0.089 (0.012)	-0.095 (0.012)	0.002 (0.005)
Years of education	0.063 (0.034)	0.031 (0.036)	0.055 (0.015)	0.226 (0.070)	0.067 (0.078)	0.038 (0.033)	0.084 (0.019)	0.117 (0.018)	0.041 (0.008)	-0.019 (0.078)	0.060 (0.076)	-0.143 (0.038)	0.022 (0.016)	0.019 (0.016)	0.014 (0.008)
High school degree	-0.022 (0.100)	0.015 (0.108)	-0.030 (0.045)	-0.553 (0.275)	-0.208 (0.290)	-0.259 (0.126)	0.084 (0.062)	0.149 (0.062)	0.206 (0.028)	-0.121 (0.313)	-0.312 (0.310)	0.456 (0.167)	0.035 (0.053)	0.204 (0.053)	0.371 (0.026)
College degree	-0.220 (0.315)	-0.278 (0.363)	-0.127 (0.145)	-0.577 (0.390)	-0.272 (0.443)	0.121 (0.189)	-0.131 (0.098)	-0.219 (0.092)	0.101 (0.044)	-0.171 (0.430)	-1.309 (0.454)	0.171 (0.190)	-0.063 (0.088)	-0.079 (0.087)	-0.093 (0.041)
Nonwhite	0.884 (0.082)	0.714 (0.087)	0.248 (0.037)	0.520 (0.181)	0.686 (0.198)	0.121 (0.088)	0.445 (0.038)	0.336 (0.038)	-0.103 (0.019)	0.994 (0.235)	1.082 (0.226)	0.225 (0.120)	0.501 (0.034)	0.386 (0.034)	-0.169 (0.017)
Proportion of previous 8 quarters working	1.224 (0.176)	1.545 (0.199)	1.130 (0.079)	1.817 (0.393)	2.373 (0.450)	0.968 (0.175)	1.033 (0.089)	1.383 (0.091)	1.152 (0.041)	1.419 (0.478)	0.839 (0.520)	0.888 (0.245)	1.275 (0.079)	1.719 (0.081)	1.187 (0.038)
Working all of previous 8 qtrs	0.072 (0.104)	0.340 (0.108)	0.183 (0.051)	-0.308 (0.221)	-0.232 (0.229)	0.007 (0.105)	-0.045 (0.054)	0.134 (0.051)	0.307 (0.025)	-0.186 (0.280)	0.460 (0.282)	-0.059 (0.140)	0.260 (0.049)	0.402 (0.047)	0.424 (0.023)
No work in any of previous 8 quarters	-0.328 (0.134)	-0.038 (0.158)	-0.233 (0.054)	-0.232 (0.319)	0.328 (0.366)	-0.433 (0.125)	-0.396 (0.063)	-0.296 (0.069)	-0.451 (0.028)	-0.992 (0.412)	-0.399 (0.423)	-0.412 (0.183)	-0.481 (0.055)	-0.269 (0.059)	-0.388 (0.026)
Total annual earnings in the prior year /1000	0.029 (0.009)	0.046 (0.009)	0.051 (0.004)	0.007 (0.011)	0.008 (0.012)	0.005 (0.005)	-0.008 (0.003)	0.012 (0.003)	0.015 (0.001)	-0.025 (0.013)	0.007 (0.011)	0.017 (0.004)	-0.032 (0.003)	-0.015 (0.002)	0.020 (0.001)
Total annual earnings two years prior /1000	-0.041 (0.009)	-0.032 (0.009)	-0.035 (0.004)	-0.032 (0.013)	-0.023 (0.013)	0.001 (0.005)	-0.021 (0.003)	-0.027 (0.003)	-0.015 (0.001)	-0.027 (0.012)	-0.019 (0.011)	-0.006 (0.004)	-0.024 (0.003)	-0.035 (0.003)	-0.013 (0.001)

Table 2 -- Continued

	Females									Males					
	TANF			Job Training			Employment Exchange			Job Training			Employment Exchange		
	Job in THS	Job in THS and Other Industry	Job, but none in THS	Job in THS	Job in THS and Other Industry	Job, but none in THS	Job in THS	Job in THS and Other Industry	Job, but none in THS	Job in THS	Job in THS and Other Industry	Job, but none in THS	Job in THS	Job in THS and Other Industry	Job, but none in THS
St. Louis central	0.606 (0.104)	0.248 (0.110)	-0.014 (0.044)	1.476 (0.274)	0.780 (0.246)	0.195 (0.101)	0.711 (0.046)	0.574 (0.046)	-0.159 (0.021)	0.193 (0.289)	0.769 (0.307)	0.170 (0.128)	0.555 (0.041)	0.356 (0.042)	-0.040 (0.019)
Kansas City central	0.855 (0.107)	0.662 (0.111)	-0.074 (0.047)	1.637 (0.284)	0.795 (0.266)	0.035 (0.114)	0.764 (0.054)	0.742 (0.052)	-0.223 (0.026)	0.535 (0.332)	1.016 (0.343)	0.294 (0.161)	0.689 (0.049)	0.827 (0.047)	0.138 (0.024)
Suburban metro	0.684 (0.125)	0.431 (0.130)	-0.088 (0.050)	1.174 (0.287)	0.385 (0.269)	-0.011 (0.101)	0.679 (0.054)	0.755 (0.050)	-0.059 (0.023)	0.452 (0.324)	0.755 (0.337)	-0.107 (0.140)	0.696 (0.050)	0.855 (0.046)	0.250 (0.022)
Small metro	0.659 (0.124)	0.569 (0.125)	0.006 (0.048)	1.277 (0.299)	-0.037 (0.333)	-0.185 (0.113)	0.646 (0.055)	0.724 (0.051)	0.086 (0.023)	0.347 (0.371)	0.800 (0.371)	-0.267 (0.173)	0.719 (0.046)	0.893 (0.043)	0.133 (0.021)
Quarter 2	0.235 (0.093)	0.029 (0.094)	0.155 (0.041)	-0.110 (0.185)	0.173 (0.189)	-0.012 (0.083)	0.080 (0.047)	0.208 (0.044)	0.100 (0.021)	0.169 (0.229)	0.045 (0.234)	0.140 (0.114)	0.212 (0.044)	0.288 (0.041)	0.132 (0.020)
Quarter 3	0.149 (0.091)	0.050 (0.090)	0.229 (0.039)	-0.228 (0.181)	-0.073 (0.192)	0.107 (0.079)	0.090 (0.042)	0.168 (0.041)	0.212 (0.019)	-0.320 (0.251)	-0.200 (0.240)	0.026 (0.114)	0.165 (0.039)	0.181 (0.037)	0.119 (0.018)
Quarter 4	0.071 (0.091)	-0.505 (0.100)	-0.114 (0.041)	0.090 (0.195)	0.038 (0.217)	0.056 (0.091)	0.012 (0.045)	-0.118 (0.045)	0.028 (0.020)	-0.135 (0.250)	0.197 (0.235)	-0.072 (0.123)	0.031 (0.040)	-0.167 (0.039)	-0.056 (0.018)
Unemployment rate in county at current qtr	-0.905 (1.721)	-3.359 (1.976)	-3.188 (0.719)	-7.893 (4.133)	-3.065 (3.811)	-1.356 (1.501)	-4.664 (0.725)	-5.628 (0.744)	-2.822 (0.243)	0.341 (5.610)	-3.807 (5.648)	-0.191 (2.574)	-1.187 (0.597)	-2.017 (0.638)	-2.352 (0.247)

Table 3: Predicted Earnings and Impact by Industry of Employment in Quarter Following Program Entry in 1997

	One Industry						Multiple Industries	
	No Job	THS	Manufac-turing	Retail Trade	Service[1]	Other	THS and Any Other Industry	Any Industry Not THS
					Panel A - Females			
TANF								
1. Initial mean earnings	0	1,131	1,763	1,188	1,547	2,147	1,632	1,766
	(0)	(35)	(52)	(19)	(22)	(60)	(38)	(42)
2. Mean earnings 8 quarters later	1,008	1,818	1,831	1,597	1,953	2,449	2,060	1,922
	(14)	(58)	(75)	(31)	(34)	(81)	(67)	(57)
3. Mean earnings 8 quarters later controlling characteristics	1,164	1,585	1,848	1,556	1,747	2,051	1,737	1,730
	(15)	(51)	(62)	(31)	(29)	(58)	(55)	(49)
4. Impact on earnings, relative to no job category	0	421	684	393	584	887	574	566
	(0)	(54)	(64)	(35)	(33)	(61)	(57)	(52)
5. Impact on earnings based on difference-in-difference	0	525	682	491	678	949	655	614
	(0)	(62)	(74)	(40)	(38)	(70)	(66)	(60)
Job Training								
1. Initial mean earnings	0	1,529	2,748	1,727	2,968	3,315	2,494	2,849
	(0)	(95)	(122)	(100)	(98)	(147)	(148)	(148)
2. Mean earnings 8 quarters later	1,941	2,838	2,968	2,657	3,464	3,300	3,140	3,352
	(52)	(172)	(138)	(139)	(101)	(130)	(172)	(174)
3. Mean earnings 8 quarters later controlling characteristics	2,193	2,789	2,909	2,882	3,057	3,063	3,040	3,214
	(55)	(159)	(137)	(123)	(80)	(116)	(166)	(140)
4. Impact on earnings, relative to no job category	0	596	716	689	864	870	847	1,021
	(0)	(169)	(147)	(135)	(99)	(129)	(176)	(152)
5. Impact on earnings based on difference-in-difference	0	610	244	490	712	736	787	959
	(0)	(407)	(353)	(324)	(239)	(310)	(425)	(366)
Employment Exchange								
1. Initial mean earnings	0	1,745	3,748	1,877	2,639	3,724	2,616	3,056
	(0)	(23)	(61)	(14)	(15)	(42)	(30)	(27)
2. Mean earnings 8 quarters later	1,252	2,515	3,535	2,215	2,956	3,821	3,112	3,250
	(11)	(37)	(33)	(19)	(19)	(34)	(38)	(29)
3. Mean earnings 8 quarters later controlling characteristics	1,578	2,605	3,186	2,449	2,783	3,192	2,986	3,020
	(13)	(35)	(28)	(21)	(17)	(26)	(33)	(25)
4. Impact on earnings, relative to no job category	0	1,027	1,608	872	1,205	1,614	1,408	1,443
	(0)	(37)	(31)	(25)	(22)	(30)	(36)	(29)
5. Impact on earnings based on difference-in-difference	0	1,333	1,853	943	1,306	1,486	1,424	1,569
	(0)	(109)	(91)	(73)	(64)	(87)	(105)	(84)

Table 3 -- Continued

	One Industry						Multiple Industries	
	No Job	THS	Manufac-turing	Retail Trade	Service[1]	Other	THS and Any Other Industry	Any Industry Not THS
					Panel B - Males			
Job Training								
1. Initial mean earnings	0	1,661	3,795	2,412	4,739	5,557	3,014	5,648
	(0)	(158)	(172)	(233)	(230)	(516)	(190)	(676)
2. Mean earnings 8 quarters later	2,402	2,590	4,603	2,894	4,774	5,004	3,822	4,484
	(113)	(249)	(202)	(226)	(269)	(243)	(302)	(260)
3. Mean earnings 8 quarters later controlling characteristics	2,574	3,458	4,386	3,490	4,340	4,526	4,216	4,283
	(121)	(303)	(210)	(272)	(202)	(182)	(293)	(252)
4. Impact on earnings, relative to no job category	0	884	1,812	915	1,766	1,952	1,642	1,708
	(0)	(329)	(243)	(301)	(238)	(222)	(322)	(284)
5. Impact on earnings based on difference-in-difference	0	802	1,191	553	1,338	1,897	1,318	1,572
	(0)	(868)	(639)	(791)	(625)	(581)	(847)	(746)
Employment Exchange								
1. Initial mean earnings	0	1,716	5,119	2,628	3,369	4,519	2,667	4,133
	(0)	(25)	(33)	(24)	(30)	(31)	(25)	(51)
2. Mean earnings 8 quarters later	1,575	2,393	5,218	3,161	3,706	4,954	3,082	4,434
	(14)	(37)	(35)	(29)	(35)	(29)	(39)	(38)
3. Mean earnings 8 quarters later controlling characteristics	2,147	3,061	4,463	3,400	3,646	4,227	3,507	4,133
	(17)	(44)	(28)	(31)	(32)	(24)	(42)	(32)
4. Impact on earnings, relative to no job category	0	915	2,316	1,254	1,499	2,081	1,360	1,986
	(0)	(47)	(34)	(36)	(36)	(29)	(45)	(37)
5. Impact on earnings based on difference-in-difference	0	1,300	2,507	1,376	1,684	2,046	1,670	2,147
	(0)	(113)	(81)	(86)	(88)	(71)	(110)	(90)

[1]Excluding THS.

Table 4: Predicted Probabililty of Employment by Industry in Quarter Following Program Entry in 1997

	One Industry						Multiple Industries	
	No Job	THS	Manufac-turing	Retail Trade	Service[1]	Other	THS and Any Other Industry	Any Industry Not THS
						Panel A - Females		
TANF								
1. Probability of employment in reference quarter	0	1	1	1	1	1	1	1
	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
2. Probabilty of employment 8 quarters later	0.455	0.682	0.650	0.679	0.706	0.725	0.744	0.727
	(0.004)	(0.013)	(0.017)	(0.008)	(0.007)	(0.015)	(0.014)	(0.013)
3. Probability of employment 8 quarters later controlling characteristics	0.494	0.628	0.657	0.643	0.663	0.668	0.670	0.671
	(0.004)	(0.014)	(0.017)	(0.008)	(0.008)	(0.016)	(0.015)	(0.013)
4. Impact on probability of employment, relative to no job category	0	0.134	0.163	0.149	0.169	0.174	0.176	0.177
	(0)	(0.014)	(0.017)	(0.009)	(0.009)	(0.016)	(0.015)	(0.014)
5. Impact on probability of employment based on difference-in-difference	0	0.154	0.171	0.180	0.204	0.207	0.186	0.173
	(0)	(0.018)	(0.021)	(0.012)	(0.011)	(0.020)	(0.019)	(0.017)
Job Training								
1. Probability of employment in reference quarter	0	1	1	1	1	1	1	1
	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
2. Probabilty of employment 8 quarters later	0.575	0.753	0.761	0.731	0.767	0.741	0.819	0.807
	(0.011)	(0.027)	(0.022)	(0.021)	(0.013)	(0.020)	(0.025)	(0.022)
3. Probability of employment 8 quarters later controlling characteristics	0.603	0.736	0.733	0.719	0.750	0.726	0.791	0.773
	(0.010)	(0.028)	(0.024)	(0.022)	(0.014)	(0.020)	(0.029)	(0.025)
4. Impact on probability of employment, relative to no job category	0	0.132	0.130	0.115	0.147	0.122	0.188	0.170
	(0)	(0.030)	(0.026)	(0.024)	(0.018)	(0.023)	(0.031)	(0.027)
5. Impact on probability of employment based on difference-in-difference	0	0.075	0.056	0.053	0.086	0.074	0.111	0.113
	(0)	(0.023)	(0.020)	(0.019)	(0.014)	(0.018)	(0.024)	(0.021)
Employment Exchange								
1. Probability of employment in reference quarter	0	1	1	1	1	1	1	1
	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
2. Probabilty of employment 8 quarters later	0.417	0.698	0.775	0.708	0.749	0.787	0.786	0.799
	(0.003)	(0.006)	(0.004)	(0.004)	(0.003)	(0.004)	(0.006)	(0.004)
3. Probability of employment 8 quarters later controlling characteristics	0.473	0.694	0.738	0.692	0.727	0.742	0.755	0.754
	(0.002)	(0.006)	(0.005)	(0.004)	(0.003)	(0.005)	(0.006)	(0.005)
4. Impact on probability of employment, relative to no job category	0	0.221	0.265	0.218	0.254	0.268	0.281	0.281
	(0)	(0.007)	(0.006)	(0.005)	(0.004)	(0.005)	(0.006)	(0.005)
5. Impact on probability of employment based on difference-in-difference	0	0.092	0.141	0.103	0.122	0.145	0.138	0.150
	(0)	(0.005)	(0.004)	(0.004)	(0.003)	(0.004)	(0.005)	(0.004)

Table 4 -- Continued

	One Industry						Multiple Industries	
	No Job	THS	Manufac-turing	Retail Trade	Service[1]	Other	THS and Any Other Industry	Any Industry Not THS
					Panel B - Males			
Job Training								
1. Probability of employment in reference quarter	0	1	1	1	1	1	1	1
	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
2. Probabilty of employment 8 quarters later	0.470	0.646	0.790	0.706	0.711	0.763	0.806	0.783
	(0.015)	(0.038)	(0.022)	(0.032)	(0.023)	(0.020)	(0.030)	(0.027)
3. Probability of employment 8 quarters later controlling characteristics	0.517	0.658	0.753	0.682	0.703	0.730	0.782	0.737
	(0.014)	(0.035)	(0.025)	(0.032)	(0.024)	(0.021)	(0.034)	(0.029)
4. Impact on probability of employment, relative to no job category	0	0.142	0.236	0.166	0.187	0.213	0.266	0.221
	(0)	(0.038)	(0.028)	(0.035)	(0.028)	(0.026)	(0.038)	(0.033)
5. Impact on probability of employment based on difference-in-difference	0	0.055	0.139	0.126	0.110	0.139	0.169	0.165
	(0)	(0.032)	(0.023)	(0.029)	(0.023)	(0.021)	(0.031)	(0.027)
Employment Exchange								
1. Probability of employment in reference quarter	0	1	1	1	1	1	1	1
	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
2. Probabilty of employment 8 quarters later	0.377	0.641	0.784	0.725	0.721	0.754	0.723	0.796
	(0.002)	(0.006)	(0.003)	(0.004)	(0.004)	(0.003)	(0.006)	(0.004)
3. Probability of employment 8 quarters later controlling characteristics	0.451	0.660	0.736	0.693	0.703	0.707	0.709	0.740
	(0.002)	(0.006)	(0.004)	(0.004)	(0.004)	(0.003)	(0.005)	(0.004)
4. Impact on probability of employment, relative to no job category	0	0.210	0.286	0.242	0.252	0.257	0.258	0.289
	(0)	(0.006)	(0.004)	(0.005)	(0.005)	(0.004)	(0.006)	(0.005)
5. Impact on probability of employment based on difference-in-difference	0	0.087	0.156	0.121	0.124	0.140	0.124	0.158
	(0)	(0.005)	(0.003)	(0.004)	(0.004)	(0.003)	(0.005)	(0.004)

[1]Excluding THS.

Table 5: Transition between Sectors Over Eight Quarters: Program Entry, 1997

	Reference Quarter Employment	No Job	Service, including THS	Manufacturing	Retail trade	Other	Multiple sectors	Total
				Panel A - Females				
TANF	No job	54.5	18.8	3.9	11.5	4.5	6.7	100.0
One	THS	31.8	28.0	6.3	10.3	10.3	13.3	99.8
Sector	Manufacturing	35.0	14.5	24.0	11.4	4.3	10.8	100.0
	Retail trade	32.1	18.0	4.0	28.7	5.3	12.0	99.9
	Service[1]	29.4	42.5	3.2	8.9	5.2	10.8	99.9
	Other	27.6	19.2	2.4	10.0	29.6	11.3	100.0
Multiple	THS and any other industry	25.6	30.1	4.3	10.1	10.5	19.4	100.0
Sectors	Any industry not THS	27.3	26.0	5.0	15.7	9.2	16.9	100.0
Job Training	No job	42.5	28.2	6.0	7.7	9.3	6.2	100.0
One	THS	24.7	28.2	7.3	5.4	21.6	12.7	100.0
Sector	Manufacturing	23.9	16.1	39.1	7.8	8.6	4.6	100.0
	Retail trade	26.9	22.6	2.7	28.8	10.7	8.2	100.0
	Service[1]	23.3	54.1	2.2	4.7	7.9	7.8	100.1
	Other	25.9	15.2	3.0	5.3	40.5	10.1	100.0
Multiple	THS and any other industry	18.1	35.3	6.9	7.3	13.4	19.0	100.5
Sectors	Any industry not THS	19.3	28.6	9.3	8.1	18.3	16.5	100.0
Employment Exchange	No job	58.3	17.7	4.0	8.5	6.9	4.5	100.0
One	THS	30.2	27.6	8.9	8.0	14.0	11.3	100.0
Sector	Manufacturing	22.5	9.6	49.6	5.3	5.8	7.3	100.0
	Retail trade	29.2	15.1	4.0	35.0	7.0	9.7	100.0
	Service[1]	25.1	51.5	2.8	5.9	6.4	8.4	100.0
	Other	21.3	13.6	3.3	6.1	47.0	8.6	100.0
Multiple	THS and any other industry	21.4	28.4	10.0	9.3	15.0	15.8	100.0
Sectors	Any industry not THS	20.1	24.9	9.5	13.4	15.7	16.5	100.1
				Panel B - Males				
Job Training	No job	53.0	13.1	9.2	5.0	15.4	4.5	100.0
One	THS	35.4	19.9	13.7	4.4	15.5	11.2	100.0
Sector	Manufacturing	21.0	6.6	46.6	4.9	12.9	8.1	99.9
	Retail trade	29.4	18.6	5.4	24.0	10.3	12.3	99.9
	Service[1]	28.9	41.4	7.9	4.1	11.8	5.9	100.0
	Other	23.7	10.8	6.7	3.2	48.2	7.5	100.0
Multiple	THS and any other industry	19.4	25.1	15.4	4.0	18.3	17.7	99.8
Sectors	Any industry not THS	21.7	18.3	17.0	5.2	21.7	16.1	100.0
Employment Exchange	No job	62.3	9.2	6.0	5.9	12.7	3.9	100.0
One	THS	35.9	20.4	13.2	6.8	12.8	10.9	100.0
Sector	Manufacturing	21.6	4.6	53.3	3.3	10.3	6.9	100.0
	Retail trade	27.5	10.3	6.0	34.1	11.5	10.6	99.9
	Service[1]	27.9	39.9	5.4	6.1	11.4	9.3	99.9
	Other	24.6	5.6	5.5	3.6	54.7	6.1	100.1
Multiple	THS and any other industry	27.7	16.1	15.2	8.7	16.9	15.3	99.8
Sectors	Any industry not THS	20.4	13.7	14.6	11.0	23.3	17.1	100.1

[1]Excluding THS.

Table 6: Predicted Earnings and Impact by Employment in Reference and Outcome Quarter: 1997

Impacts Relative to No Job	THS	Manufacturing	Retail Trade	Service[1]	Other	Multiple Industries THS and Any Other Industry	Multiple Industries Any Industry Not THS
				Panel A - Females			
TANF							
1. Impact of reference quarter industry on earnings	421	684	393	584	887	574	566
	(54)	(64)	(35)	(33)	(61)	(57)	(52)
2. Impact of reference quarter industry, controlling outcome industry	123	204	97	187	280	184	124
	(40)	(48)	(26)	(25)	(46)	(43)	(39)
3. Impact of outcome quarter industry, controlling reference quarter industry	1250	3054	1920	2371	3314	1928	2346
	(46)	(41)	(26)	(23)	(36)	(44)	(36)
Job Training							
1. Impact of reference quarter industry on earnings	596	716	689	864	870	847	1,021
	(169)	(147)	(135)	(99)	(129)	(176)	(152)
2. Impact of reference quarter industry, controlling outcome industry	76	45	456	319	269	242	355
	(127)	(114)	(102)	(76)	(99)	(133)	(115)
3. Impact of outcome quarter industry, controlling reference quarter industry	2194	4278	2597	3705	4217	2712	3337
	(157)	(113)	(101)	(69)	(88)	(155)	(122)
Employment Exchange							
1. Impact of reference quarter industry on earnings	1,027	1,608	872	1,205	1,614	1,408	1,443
	(37)	(31)	(25)	(22)	(30)	(36)	(29)
2. Impact of reference quarter industry, controlling outcome industry	283	362	269	370	422	420	411
	(29)	(25)	(20)	(17)	(24)	(28)	(22)
3. Impact of outcome quarter industry, controlling reference quarter industry	2011	4301	2686	3291	4187	2706	3520
	(38)	(24)	(20)	(16)	(20)	(37)	(25)

Table 6 -- Continued

Impacts Relative to No Job	THS	Manufacturing	Retail Trade	Service[1]	Other	Multiple Industries THS and Any Other Industry	Any Industry Not THS
				Panel B - Males			
Job Training							
1. Impact of reference quarter industry on earnings	884 (329)	1,812 (243)	915 (301)	1,766 (238)	1,952 (222)	1,642 (322)	1,708 (284)
2. Impact of reference quarter industry, controlling outcome industry	328 (254)	378 (194)	356 (234)	842 (186)	614 (174)	430 (250)	522 (219)
3. Impact of outcome quarter industry, controlling reference quarter industry	3117 (290)	5957 (184)	4329 (246)	5170 (177)	6099 (161)	3471 (321)	5242 (259)
Employment Exchange							
1. Impact of reference quarter industry on earnings	915 (47)	2,316 (34)	1,254 (36)	1,499 (36)	2,081 (29)	1,360 (45)	1,986 (37)
2. Impact of reference quarter industry, controlling outcome industry	70 (36)	593 (27)	320 (28)	404 (29)	637 (23)	181 (35)	553 (29)
3. Impact of outcome quarter industry, controlling reference quarter industry	2451 (47)	5718 (25)	3855 (28)	4366 (27)	5390 (21)	3175 (47)	4692 (33)

[1]Excluding THS.

Table 7: Distribution of Employment Across Industries Prior and Subsequent to Program Entry in 2001

	Females						Males			
	TANF		Job Training		Employment Exchange		Job Training		Employment Exchange	
	4 Quarters before Entry	1 Quarter after Entry	4 Quarters before Entry	1 Quarter after Entry	4 Quarters before Entry	1 Quarter after Entry	4 Quarters before Entry	1 Quarter after Entry	4 Quarters before Entry	1 Quarter after Entry
No job	40.99	52.32	25.41	37.29	33.47	38.61	22.54	34.85	34.77	39.03
Major industry group										
0 Agriculture, forestry, and fishing	0.57	0.42	1.08	0.76	0.60	0.58	0.80	0.75	0.87	1.09
1 Mining, construction	0.67	0.44	0.98	0.82	1.24	1.13	3.57	3.62	6.52	7.48
2, 3 Manufacturing	6.03	2.93	23.20	9.63	11.55	10.14	34.90	19.14	19.00	17.23
4 Transportation, communications, electric, gas, and sanitary services	2.23	1.65	3.71	3.13	4.04	2.94	6.06	6.92	5.82	4.82
5 Wholesale trade, retail trade	24.46	18.98	19.33	17.19	21.79	20.23	18.21	17.94	19.84	18.36
6 Finance, insurance, and real estate	2.17	1.41	4.58	4.40	4.95	4.46	1.73	1.96	1.99	1.70
7, 8 Services	33.80	29.29	31.58	38.62	28.34	31.45	23.11	28.18	16.64	19.46
9 Public administration	0.75	0.55	1.12	1.65	1.79	1.71	1.37	1.96	1.63	1.60
2-digit industry										
17 Special trade contractors	0.31	0.22	0.52	0.50	0.62	0.58	1.87	2.44	4.05	4.86
35 Industrial machinery and equipment	0.35	0.16	1.75	0.67	1.22	1.17	5.05	2.23	2.73	2.31
36 Electrical and electronic equipment	0.60	0.12	5.12	1.39	1.59	1.35	3.76	1.62	1.45	1.34
37 Transportation equipment	0.43	0.16	1.49	0.65	0.70	0.69	5.24	2.62	2.34	2.26
58 Eating and drinking places	11.96	9.05	5.73	5.44	7.60	7.13	5.30	4.80	5.95	5.75
73 Business services	12.47	10.62	12.55	14.13	7.64	10.07	13.79	16.32	7.22	10.22
80 Health services	10.51	9.07	7.86	10.16	7.82	8.14	1.93	2.37	1.65	1.82
83 Social Services	4.34	3.62	4.33	5.60	3.14	3.41	1.23	1.87	0.64	0.75
3-digit industry										
581 Eating and drinking places	11.96	9.05	5.73	5.44	7.60	7.13	5.30	4.80	5.95	5.75
736 Personnel supply services	7.62	7.25	7.74	9.94	3.37	6.40	8.83	11.97	3.39	6.73
805 Nursing and personal care facilities	6.58	6.04	3.64	4.43	3.03	3.34	0.73	0.89	0.61	0.73
4-digit industry										
5810 Eating and drinking places	11.67	8.88	5.60	5.32	7.35	6.95	5.17	4.76	5.76	5.60
7363 THS	7.23	6.81	7.49	9.12	3.11	5.94	8.58	11.34	3.19	6.39
8051 Skilled nursing care facilities	5.38	5.01	2.95	3.59	2.41	2.67	0.68	0.77	0.49	0.58

Table 8: Predicted Earnings and Impact by Industry of Employment in Quarter Following Program Entry in 2001

	One Industry						Multiple Industries	
	No Job	THS	Manufacturing	Retail Trade	Service[1]	Other	THS and Any Other Industry	Any Industry Not THS
				Panel A - Females				
TANF								
1. Initial mean earnings	0	1,158	2,046	1,213	1,671	2,367	1,897	1,777
	(0)	(43)	(79)	(18)	(23)	(68)	(55)	(54)
2. Mean earnings 8 quarters later	767	1,488	1,770	1,227	1,675	2,097	1,900	1,635
	(13)	(67)	(103)	(28)	(30)	(81)	(80)	(63)
3. Mean earnings 8 quarters later controlling characteristics	878	1,331	1,681	1,238	1,523	1,764	1,642	1,492
	(15)	(54)	(75)	(28)	(25)	(57)	(59)	(50)
4. Impact on earnings, relative to no job category	0	453	803	360	645	886	764	614
	(0)	(56)	(77)	(32)	(30)	(59)	(61)	(52)
5. Impact on earnings based on difference-in-difference	0	437	756	401	679	813	734	644
	(0)	(69)	(94)	(39)	(36)	(72)	(75)	(64)
Job Training								
1. Initial mean earnings	0	1,711	3,918	1,722	2,361	3,444	2,523	3,110
	(0)	(114)	(217)	(60)	(62)	(167)	(103)	(138)
2. Mean earnings 8 quarters later	1,914	2,593	3,622	2,048	2,709	3,679	2,928	3,084
	(51)	(173)	(160)	(85)	(80)	(141)	(166)	(135)
3. Mean earnings 8 quarters later controlling characteristics	1,930	2,526	3,067	2,377	2,860	3,308	2,944	3,050
	(52)	(152)	(126)	(102)	(68)	(111)	(143)	(118)
4. Impact on earnings, relative to no job category	0	596	1,137	447	930	1,379	1,014	1,120
	(0)	(162)	(135)	(115)	(87)	(123)	(153)	(130)
5. Impact on earnings based on difference-in-difference	0	428	711	511	875	1,236	1,056	1,094
	(0)	(217)	(181)	(154)	(117)	(165)	(206)	(174)
Employment Exchange								
1. Initial mean earnings	0	2,246	4,558	2,153	3,277	4,615	3,105	3,844
	(0)	(44)	(45)	(29)	(26)	(53)	(51)	(53)
2. Mean earnings 8 quarters later	1,408	2,818	4,056	2,326	3,384	4,321	3,327	3,567
	(16)	(63)	(41)	(26)	(28)	(48)	(64)	(43)
3. Mean earnings 8 quarters later controlling characteristics	1,636	2,922	3,776	2,757	3,215	3,616	3,326	3,424
	(17)	(57)	(41)	(30)	(24)	(34)	(57)	(37)
4. Impact on earnings, relative to no job category	0	1,286	2,140	1,121	1,579	1,980	1,690	1,788
	(0)	(60)	(45)	(35)	(30)	(38)	(60)	(41)
5. Impact on earnings based on difference-in-difference	0	1,339	2,097	1,270	1,723	1,947	1,847	1,899
	(0)	(79)	(59)	(46)	(39)	(50)	(79)	(54)

Table 8 -- Continued

	One Industry						Multiple Industries	
	No Job	THS	Manufacturing	Retail Trade	Service[1]	Other	THS and Any Other Industry	Any Industry Not THS
	Panel B - Males							
Job Training								
1. Initial mean earnings	0	1,734	5,026	2,558	2,848	3,683	2,469	4,044
	(0)	(133)	(225)	(105)	(116)	(134)	(130)	(200)
2. Mean earnings 8 quarters later	2,416	2,080	4,866	2,804	2,971	4,080	2,920	3,953
	(85)	(193)	(167)	(157)	(142)	(179)	(204)	(192)
3. Mean earnings 8 quarters later controlling characteristics	2,364	2,755	4,067	3,134	3,318	3,889	3,668	3,928
	(82)	(207)	(139)	(169)	(142)	(133)	(202)	(174)
4. Impact on earnings, relative to no job category	0	392	1,703	771	955	1,525	1,305	1,564
	(0)	(225)	(161)	(188)	(165)	(156)	(220)	(193)
5. Impact on earnings based on difference-in-difference	0	597	1,646	942	794	1,508	1,607	1,556
	(0)	(324)	(231)	(271)	(238)	(225)	(317)	(279)
Employment Exchange								
1. Initial mean earnings	0	2,062	5,965	3,213	4,372	5,605	3,052	4,893
	(0)	(50)	(53)	(99)	(76)	(70)	(52)	(86)
2. Mean earnings 8 quarters later	1,808	2,458	5,333	3,300	4,335	4,928	3,011	4,495
	(20)	(63)	(38)	(51)	(52)	(41)	(61)	(55)
3. Mean earnings 8 quarters later controlling characteristics	2,068	3,116	4,873	3,712	4,077	4,493	3,576	4,363
	(22)	(73)	(40)	(44)	(44)	(34)	(72)	(50)
4. Impact on earnings, relative to no job category	0	1,049	2,805	1,644	2,010	2,425	1,509	2,296
	(0)	(76)	(47)	(49)	(49)	(41)	(76)	(55)
5. Impact on earnings based on difference-in-difference	0	1,458	2,635	1,825	2,118	2,351	1,815	2,302
	(0)	(117)	(72)	(76)	(76)	(63)	(117)	(85)

[1]Excluding THS.

Table 9: Robustness Tests for Estimated Impact of Industry on Earnings

Dependent Variable: Earnings 2 Years After Reference Quarter	Industry in Reference Quarter					Multiple Industries	
	THS	Manufacturing	Retail Trade	Service[1]	Other	THS and Any Other Industry	Any Industry Not THS
	Panel A - Females, Program Entry 1997						
TANF							
1. Simple difference between industry and no job	810	823	589	945	1,440	1,052	914
2. Estimated industry impact, all measured factors controlled	421	685	393	584	888	574	566
3. (Standard error)	(54)	(64)	(35)	(33)	(61)	(57)	(52)
4. Implied ratio: All measured and unmeasured determinants	0.27	1.15	0.50	0.41	0.43	0.31	0.42
5. Implied ratio: Education and unmeasured determinants	1.21	-0.81	-2.60	0.93	0.66	22.99	1.45
6. Implied ratio: Prior market activity and unmeasure determinants	0.77	0.44	0.45	0.41	0.54	0.46	0.42
Job Training							
1. Simple difference between industry and no job	897	1,027	716	1,523	1,359	1,199	1,411
2. Estimated industry impact, all measured factors controlled	597	717	690	865	871	849	1,023
3. (Standard error)	(169)	(147)	(135)	(100)	(129)	(177)	(152)
4. Implied ratio: All measured and unmeasured determinants	0.54	0.73	3.06	0.42	0.54	0.66	0.82
5. Implied ratio: Education and unmeasured determinants	0.85	-0.34	-0.67	0.45	-7.50	-3.17	-3.42
6. Implied ratio: Prior market activity and unmeasure determinants	0.76	0.38	5.31	0.62	0.49	0.68	0.81
Employment Exchange							
1. Simple difference between industry and no job	1,263	2,283	963	1,704	2,569	1,860	1,998
2. Estimated industry impact, all measured factors controlled	1,027	1,608	872	1,205	1,614	1,408	1,443
3. (Standard error)	(37)	(31)	(25)	(22)	(30)	(36)	(29)
4. Implied ratio: All measured and unmeasured determinants	1.36	0.62	1.91	0.80	0.56	1.03	0.82
5. Implied ratio: Education and unmeasured determinants	1.63	-0.60	-1.13	0.60	0.71	1.49	1.37
6. Implied ratio: Prior market activity and unmeasure determinants	2.24	0.53	1.68	0.85	0.58	1.24	0.80
	Panel B - Males, Program Entry 1997						
JTPA							
1. Simple difference between industry and no job	-247	1,768	57	1,938	2,168	985	1,647
2. Estimated industry impact, all measured factors controlled	429	1,170	96	1,369	1,628	1,224	1,118
3. (Standard error)	(816)	(602)	(744)	(589)	(548)	(797)	(703)
4. Implied ratio: All measured and unmeasured determinants	-0.28	0.49	2.03	0.58	0.87	-4.74	0.57
5. Implied ratio: Education and unmeasured determinants	-0.08	-0.15	-0.01	0.27	-0.47	-0.22	-0.74
6. Implied ratio: Prior market activity and unmeasure determinants	-0.99	0.27	-0.07	0.37	0.40	0.76	0.47
Employment Exchange							
1. Simple difference between industry and no job	818	3,643	1,586	2,131	3,379	1,507	2,859
2. Estimated industry impact, all measured factors controlled	915	2,317	1,254	1,499	2,081	1,360	1,986
3. (Standard error)	(47)	(34)	(36)	(36)	(29)	(45)	(37)
4. Implied ratio: All measured and unmeasured determinants	-55.08	0.59	1.09	0.86	0.52	1.99	0.79
5. Implied ratio: Education and unmeasured determinants	-1.60	-0.84	-59.07	0.26	4.68	-8.91	0.98
6. Implied ratio: Prior market activity and unmeasure determinants	3.72	0.62	1.08	0.91	0.57	1.77	0.83

Table 9 - Continued

Dependent Variable: Earnings 2 Years After Reference Quarter	Industry in Reference Quarter					Multiple Industries	
	THS	Manufacturing	Retail Trade	Service[1]	Other	THS and Any Other Industry	Any Industry Not THS
Panel C - Females, Program Entry 2001							
TANF							
1. Simple difference between industry and no job	721	1,003	460	908	1,331	1,133	868
2. Estimated industry impact, all measured factors controlled	453	804	360	645	887	765	615
3. (Standard error)	(56)	(77)	(32)	(30)	(59)	(61)	(52)
4. Implied ratio: All measured and unmeasured determinants	0.38	0.89	0.73	0.49	0.51	0.48	0.53
5. Implied ratio: Education and unmeasured determinants	0.80	-3.75	-137.96	1.26	0.95	2.39	-2.63
6. Implied ratio: Prior market activity and unmeasure determinants	0.46	0.50	0.63	0.47	0.50	0.47	0.41
Job Training							
1. Simple difference between industry and no job	679	1,708	134	794	1,765	1,014	1,170
2. Estimated industry impact, all measured factors controlled	597	1,139	447	931	1,381	1,016	1,122
3. (Standard error)	(162)	(135)	(115)	(87)	(123)	(153)	(130)
4. Implied ratio: All measured and unmeasured determinants	1.36	6.25	-0.46	-3.74	0.84	3.77	2.87
5. Implied ratio: Education and unmeasured determinants	0.27	-6.70	-0.35	1.24	0.52	1.81	0.79
6. Implied ratio: Prior market activity and unmeasure determinants	1.10	5.34	-2.49	5.53	1.37	1.44	1.37
Employment Exchange							
1. Simple difference between industry and no job	1,411	2,648	918	1,976	2,913	1,919	2,159
2. Estimated industry impact, all measured factors controlled	1,286	2,140	1,121	1,579	1,980	1,690	1,788
3. (Standard error)	(60)	(45)	(35)	(30)	(38)	(60)	(41)
4. Implied ratio: All measured and unmeasured determinants	3.21	0.73	-2.94	1.35	0.71	2.40	1.57
5. Implied ratio: Education and unmeasured determinants	1.04	-0.45	-1.57	0.38	0.60	1.04	0.83
6. Implied ratio: Prior market activity and unmeasure determinants	-48.84	0.72	-3.11	1.70	0.79	6.46	2.12
Panel D - Males, Program Entry 2001							
JTPA							
1. Simple difference between industry and no job	-336	2,451	389	555	1,664	505	1,537
2. Estimated industry impact, all measured factors controlled	390	1,705	771	955	1,527	1,307	1,567
3. (Standard error)	(225)	(161)	(189)	(166)	(157)	(221)	(194)
4. Implied ratio: All measured and unmeasured determinants	-0.32	0.83	-1.01	-1.27	3.43	-1.00	19.71
5. Implied ratio: Education and unmeasured determinants	0.33	-0.80	-4.05	0.45	2.30	-1.40	-5.79
6. Implied ratio: Prior market activity and unmeasure determinants	-1.79	1.07	-1.23	-11.71	2.62	-11.09	2.52
Employment Exchange							
1. Simple difference between industry and no job	649	3,524	1,491	2,527	3,119	1,203	2,687
2. Estimated industry impact, all measured factors controlled	1,049	2,806	1,644	2,010	2,425	1,509	2,296
3. (Standard error)	(76)	(47)	(49)	(49)	(41)	(76)	(55)
4. Implied ratio: All measured and unmeasured determinants	-1.51	0.67	-7.72	1.50	0.90	-4.61	1.66
5. Implied ratio: Education and unmeasured determinants	-0.72	-0.40	-1.10	0.26	-2.02	-0.69	1.41
6. Implied ratio: Prior market activity and unmeasure determinants	-2.71	1.10	15.03	1.64	0.99	-11.05	2.20

[1]Excluding THS.

Key: Lines 4 indicates the ratio between the coefficient of the error term and the coefficient for measured variables in a regression predicting industry during the reference quarter that would be necessary in order for the estimated coefficeint in line 2 to be spurious. Line 5 provides the implied ratio where the measured variable is a composite variable identifying educational attainment, and line 6 a composite variable identifying prior employment activity.

Table A-1: Means and Standard Deviations for Individuals Entering Programs in 1997

	Females						Males			
	TANF		Job Training		Employment Exchange		Job Training		Employment Exchange	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Age	28.04	7.57	37.18	10.46	34.24	11.01	38.84	10.62	33.70	10.93
Age squared	843.42	476.34	1491.44	838.44	1293.86	825.05	1621.74	860.86	1255.09	812.86
Number of years of education	11.31	1.60	12.42	1.61	12.31	1.64	13.00	2.27	12.30	1.67
High school degree[1]	0.577	0.494	0.869	0.337	0.871	0.336	0.866	0.340	0.870	0.337
College degree	0.011	0.104	0.055	0.228	0.077	0.267	0.170	0.375	0.077	0.266
Nonwhite	0.381	0.486	0.329	0.470	0.267	0.442	0.281	0.449	0.234	0.424
Proportion of previous 8 quarters working	0.512	0.363	0.627	0.383	0.628	0.395	0.658	0.375	0.632	0.395
Working all of previous 8 qtrs	0.174	0.379	0.359	0.480	0.391	0.488	0.379	0.485	0.396	0.489
No work in any of previous 8 qtrs	0.193	0.395	0.159	0.365	0.180	0.385	0.143	0.350	0.180	0.385
Total annual earnings in the prior year	3,909	4,811	8,972	10,992	8,944	10,319	13,850	16,953	12,747	15,349
Total annual earnings two years prior	3,566	5,057	8,935	10,632	7,847	10,197	14,160	16,759	11,355	15,330
St. Louis County and St. Louis City	0.247	0.432	0.270	0.444	0.218	0.413	0.293	0.455	0.205	0.404
Kansas City central area (Jackson County)	0.160	0.367	0.135	0.342	0.101	0.301	0.149	0.356	0.105	0.306
Suburban areas	0.106	0.308	0.151	0.358	0.126	0.332	0.200	0.400	0.141	0.348
Small metro	0.121	0.326	0.100	0.299	0.125	0.331	0.081	0.273	0.134	0.340
Outside metro	0.365	0.482	0.344	0.475	0.430	0.495	0.278	0.448	0.416	0.493
Quarter 1997:1	0.213	0.409	0.288	0.453	0.224	0.417	0.341	0.474	0.240	0.427
Quarter 1997:2	0.237	0.425	0.242	0.428	0.199	0.400	0.239	0.427	0.178	0.383
Quarter 1997:3	0.282	0.450	0.289	0.453	0.315	0.464	0.225	0.418	0.291	0.454
Quarter 1997:4	0.268	0.443	0.181	0.385	0.262	0.440	0.195	0.396	0.291	0.454
Earnings in quarter following program entry	710	1,200	1,576	2,534	1,845	3,002	2,760	6,109	2,591	3,903
Earnings 8 quarters after reference quarter	1,421	1,890	2,677	2,858	2,430	2,841	3,646	4,330	3,353	4,035
Employment 8 quarters after reference quarter	0.571	0.495	0.687	0.464	0.642	0.479	0.652	0.477	0.626	0.484
Industry 4 quarters prior to program entry										
No job	0.475	0.499	0.366	0.482	0.360	0.480	0.333	0.472	0.357	0.479
Only one sector										
THS	0.028	0.165	0.027	0.162	0.019	0.138	0.033	0.178	0.021	0.145
Manufacturing	0.040	0.196	0.139	0.346	0.088	0.284	0.178	0.383	0.134	0.340
Retail trade	0.158	0.365	0.108	0.310	0.150	0.357	0.083	0.276	0.119	0.323
Service (excluding THS)	0.168	0.374	0.193	0.394	0.201	0.401	0.123	0.329	0.098	0.297
Other	0.042	0.200	0.094	0.292	0.103	0.304	0.159	0.366	0.196	0.397
Multiple sectors										
THS and any other Industry	0.031	0.172	0.025	0.156	0.020	0.141	0.033	0.178	0.021	0.142
Any industry not THS	0.059	0.235	0.049	0.216	0.058	0.233	0.057	0.232	0.055	0.228
Industry in reference quarter										
No job	0.526	0.499	0.408	0.491	0.334	0.471	0.347	0.476	0.325	0.468
Only one sector										
THS	0.046	0.210	0.048	0.214	0.044	0.205	0.053	0.225	0.046	0.208
Manufacturing	0.031	0.173	0.069	0.254	0.086	0.281	0.115	0.319	0.131	0.337
Retail trade	0.126	0.332	0.081	0.273	0.127	0.333	0.067	0.251	0.098	0.297
Service (excluding THS)	0.147	0.354	0.199	0.399	0.192	0.394	0.129	0.336	0.089	0.285
Other	0.035	0.185	0.092	0.289	0.086	0.280	0.154	0.361	0.182	0.386
Multiple sectors										
THS and Any Other Industry	0.039	0.195	0.043	0.203	0.048	0.214	0.058	0.234	0.048	0.215
Any industry not THS	0.049	0.215	0.060	0.237	0.083	0.276	0.076	0.265	0.081	0.273
Industry 8 quarters after reference quarter										
No job	0.429	0.495	0.313	0.464	0.358	0.479	0.348	0.477	0.374	0.484
Only one sector										
THS	0.034	0.180	0.030	0.170	0.023	0.151	0.038	0.192	0.024	0.154
Manufacturing	0.046	0.209	0.073	0.260	0.086	0.281	0.139	0.346	0.135	0.342
Retail trade	0.133	0.340	0.085	0.279	0.113	0.317	0.058	0.234	0.085	0.279
Service (excluding THS)	0.199	0.400	0.282	0.450	0.220	0.414	0.136	0.343	0.096	0.294
Other	0.063	0.244	0.133	0.339	0.116	0.320	0.200	0.400	0.209	0.406
Multiple sectors										
THS and Any Other Industry	0.037	0.189	0.031	0.174	0.024	0.154	0.031	0.173	0.024	0.154
Any industry not THS	0.058	0.235	0.053	0.224	0.059	0.236	0.050	0.218	0.054	0.225
Number of observation	26,048		5,384		114,375		3,023		135,911	

[1]The high school degree dummy is coded 1 for those with at least a high school degree.

Table A-2: Means and Standard Deviations for Individuals Entering Programs in 2001

| | Females | | | | | | Males | | | |
| | TANF | | Job Training | | Employment Exchange | | Job Training | | Employment Exchange | |
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Age	28.17	7.64	36.99	10.94	35.89	12.07	38.49	10.98	35.88	12.03
Age squared	852.03	485.97	1487.96	847.35	1433.42	923.21	1601.72	859.31	1432.10	921.54
Number of years of education	11.29	1.54	12.29	1.45	12.45	1.45	12.50	1.57	12.36	1.46
High school degree[1]	0.586	0.493	0.879	0.327	0.934	0.249	0.885	0.319	0.925	0.263
College degree	0.008	0.091	0.043	0.204	0.081	0.273	0.068	0.252	0.075	0.264
Nonwhite	0.414	0.493	0.365	0.481	0.238	0.426	0.358	0.480	0.225	0.418
Proportion of previous 8 quarters working	0.572	0.354	0.736	0.326	0.700	0.376	0.761	0.320	0.690	0.381
Working all of previous 8 qtrs	0.205	0.404	0.429	0.495	0.474	0.499	0.473	0.499	0.462	0.499
No work in any of previous 8 qtrs	0.145	0.353	0.075	0.264	0.141	0.348	0.069	0.253	0.149	0.356
Total annual earnings in the prior year	4,718	6,469	11,661	14,511	13,792	15,203	17,664	18,226	19,302	29,751
Total annual earnings two years prior	4,904	8,168	11,827	13,819	12,489	14,730	18,295	20,247	17,663	23,801
St. Louis County and St. Louis City	0.266	0.442	0.279	0.449	0.205	0.403	0.311	0.463	0.188	0.391
Kansas City central area (Jackson County)	0.162	0.368	0.131	0.338	0.114	0.318	0.185	0.388	0.124	0.329
Suburban areas	0.105	0.307	0.131	0.338	0.172	0.377	0.132	0.339	0.170	0.375
Small metro	0.119	0.324	0.118	0.323	0.131	0.337	0.100	0.300	0.136	0.343
Outside metro	0.347	0.476	0.341	0.474	0.378	0.485	0.271	0.445	0.383	0.486
Quarter 2001:1	0.223	0.416	0.278	0.448	0.234	0.423	0.322	0.467	0.257	0.437
Quarter 2001:2	0.239	0.427	0.217	0.412	0.259	0.438	0.199	0.399	0.237	0.425
Quarter 2001:3	0.270	0.444	0.289	0.453	0.261	0.439	0.249	0.433	0.249	0.432
Quarter 2001:4	0.268	0.443	0.216	0.411	0.246	0.431	0.229	0.420	0.257	0.437
Earnings in quarter following program entry	757	1,293	1,651	2,491	2,213	3,354	2,249	3,313	3,041	6,541
Earnings 8 quarters after reference quarter	1,152	1,736	2,523	2,681	2,691	3,321	3,185	3,584	3,476	4,568
Employment 8 quarters after reference quarter	0.499	0.500	0.688	0.463	0.625	0.484	0.654	0.476	0.600	0.490
Industry 4 quarters prior to program entry										
No job	0.408	0.492	0.253	0.435	0.289	0.453	0.225	0.418	0.299	0.458
Only one sector										
THS	0.033	0.179	0.034	0.182	0.016	0.126	0.040	0.196	0.016	0.124
Manufacturing	0.041	0.198	0.202	0.402	0.111	0.314	0.298	0.458	0.183	0.387
Retail trade	0.170	0.375	0.116	0.320	0.149	0.356	0.088	0.283	0.119	0.324
Service (excluding THS)	0.193	0.395	0.184	0.387	0.218	0.413	0.095	0.294	0.111	0.314
Other	0.049	0.217	0.111	0.314	0.143	0.351	0.138	0.345	0.206	0.405
Multiple sectors										
THS and any other industry	0.039	0.194	0.041	0.198	0.016	0.124	0.046	0.210	0.015	0.122
Any industry not THS	0.066	0.248	0.060	0.238	0.058	0.233	0.069	0.254	0.051	0.219
Industry in reference quarter										
No job	0.523	0.500	0.370	0.483	0.358	0.479	0.344	0.475	0.360	0.480
Only one sector										
THS	0.037	0.190	0.043	0.203	0.173	0.171	0.056	0.229	0.032	0.175
Manufacturing	0.019	0.137	0.067	0.249	0.280	0.271	0.131	0.338	0.145	0.352
Retail trade	0.139	0.346	0.098	0.297	0.330	0.330	0.083	0.276	0.100	0.300
Service (excluding THS)	0.174	0.379	0.221	0.415	0.397	0.391	0.118	0.323	0.096	0.294
Other	0.034	0.181	0.082	0.274	0.300	0.288	0.133	0.339	0.168	0.374
Multiple sectors										
THS and any other industry	0.031	0.174	0.049	0.216	0.173	0.169	0.058	0.234	0.032	0.176
Any industry not THS	0.043	0.203	0.071	0.257	0.262	0.255	0.077	0.267	0.067	0.250
Industry 8 quarters after reference quarter										
No job	0.501	0.500	0.312	0.463	0.484	0.491	0.346	0.476	0.400	0.490
Only one sector										
THS	0.021	0.144	0.024	0.152	0.119	0.118	0.035	0.184	0.016	0.126
Manufacturing	0.023	0.149	0.076	0.265	0.267	0.258	0.139	0.346	0.135	0.341
Retail trade	0.129	0.335	0.099	0.299	0.315	0.313	0.085	0.279	0.092	0.290
Service (excluding THS)	0.197	0.398	0.274	0.446	0.416	0.409	0.122	0.327	0.104	0.305
Other	0.066	0.249	0.141	0.348	0.346	0.334	0.206	0.404	0.200	0.400
Multiple sectors										
THS and any other industry	0.019	0.136	0.017	0.128	0.103	0.101	0.023	0.151	0.013	0.113
Any industry not THS	0.044	0.206	0.058	0.234	0.215	0.210	0.044	0.206	0.041	0.198
Number of observation	24,300		5,647		79,042		4,258		94,466	

[1] The high school degree dummy is coded 1 for those with at least a high school degree.

Table A-3 Estimates for Regression Equations Predicting Earnings Eight Quarters After Reference Quarter, Program Entries in 1997

Dependent Variable	Earnings Eight Quarters After Reference Quarter					Differenced Earnings				
	Females			Males		Females			Males	
	TANF	Job Training	Employment Exchange	Job Training	Employment Exchange	TANF	Job Training	Employment Exchange	Job Training	Employment Exchange
Constant	-230.73	-2676.45	-1788.66	-4476.70	-2035.69	298.32	-506.06	116.82	-802.43	-351.44
	(184.26)	(603.77)	(120.90)	(1137.43)	(150.14)	(211.26)	(1433.33)	(350.16)	(2960.47)	(361.79)
Age	9.58	102.25	77.60	201.01	110.19	-5.21	30.78	1.67	47.99	51.70
	(9.50)	(23.91)	(4.16)	(47.30)	(5.35)	(10.93)	(57.25)	(12.10)	(124.04)	(12.94)
Age square/100	-31.89	-159.85	-115.56	-301.85	-174.88	-29.70	-105.34	-43.76	-205.44	-149.08
	(14.94)	(29.61)	(5.50)	(58.00)	(7.11)	(17.22)	(71.06)	(16.03)	(152.29)	(17.22)
Years of education	64.78	170.56	96.10	185.04	89.72	42.74	114.43	51.09	-23.16	60.08
	(11.29)	(37.90)	(8.76)	(62.04)	(10.86)	(13.04)	(90.82)	(25.57)	(162.14)	(26.32)
High school degree	154.57	190.22	171.20	50.55	308.94	82.76	-409.07	117.49	521.47	282.99
	(34.81)	(142.92)	(29.93)	(273.33)	(37.50)	(40.19)	(343.75)	(87.58)	(717.90)	(90.96)
College degree	230.71	262.18	522.74	164.55	224.28	-22.06	98.74	139.06	-428.09	-375.32
	(112.12)	(209.62)	(44.95)	(316.38)	(57.14)	(129.39)	(502.21)	(131.36)	(829.64)	(138.40)
Nonwhite	117.29	-165.51	-30.49	-552.05	-448.98	200.39	82.43	95.99	-135.71	-177.88
	(29.29)	(99.84)	(19.61)	(194.91)	(24.85)	(33.81)	(239.85)	(57.31)	(509.55)	(60.11)
Proportion of previous 8 quarters working	-36.58	-563.24	-119.47	557.94	-186.41	-1149.74	-2505.56	-1269.44	-2780.12	-2137.24
	(71.07)	(223.13)	(47.94)	(450.42)	(60.64)	(70.26)	(496.90)	(134.05)	(1105.05)	(141.64)
Working all of previous 8 qtrs	-3.61	13.90	54.88	3.87	213.63	-378.96	-657.31	-861.18	-847.68	-900.21
	(40.27)	(119.49)	(26.08)	(230.95)	(32.67)	(45.03)	(280.30)	(74.86)	(595.66)	(78.17)
No work in any of previous 8 quarters	-49.21	-188.49	25.26	873.34	86.13	88.88	435.25	346.15	3635.93	362.37
	(41.98)	(151.86)	(32.93)	(323.78)	(41.83)	(48.46)	(365.18)	(96.36)	(847.64)	(101.46)
Total annual earnings in the prior year/1000	71.77	51.62	73.27	55.44	72.63					
	(3.52)	(5.87)	(1.39)	(6.94)	(1.23)					
Total annual earnings two years prior/1000	45.38	63.84	34.93	37.29	38.38					
	(3.27)	(6.37)	(1.40)	(7.15)	(1.22)					
St. Louis central	238.36	411.10	390.02	596.43	462.67	160.26	143.56	142.62	412.67	106.12
	(34.94)	(115.55)	(21.87)	(214.21)	(27.31)	(40.27)	(275.49)	(63.62)	(561.35)	(66.00)
Kansas City central	244.72	493.21	274.38	65.29	302.02	175.49	215.70	46.88	255.62	22.99
	(36.71)	(129.08)	(27.08)	(254.45)	(33.38)	(42.33)	(309.04)	(79.08)	(667.62)	(80.91)
Suburban metro	148.22	331.35	300.38	737.01	703.84	110.58	589.21	449.80	1579.89	545.74
	(39.11)	(115.17)	(23.92)	(227.49)	(29.47)	(45.15)	(276.03)	(69.84)	(595.88)	(71.15)
Small metro	-35.25	120.72	-2.23	151.94	-6.90	4.56	183.78	-40.88	433.42	-18.69
	(38.10)	(129.72)	(24.00)	(289.78)	(30.06)	(44.01)	(312.05)	(70.25)	(760.97)	(72.91)

Table A-3 -- Continued

Dependent Variable	Earnings Eight Quarters After Reference Quarter					Differenced Earnings				
	Females			Males		Females			Males	
	TANF	Job Training	Employment Exchange	Job Training	Employment Exchange	TANF	Job Training	Employment Exchange	Job Training	Employment Exchange
Quarter 2	62.57	66.73	65.11	170.68	138.19	25.40	93.61	14.95	510.28	54.97
	(32.03)	(94.04)	(22.00)	(184.88)	(28.34)	(37.01)	(226.05)	(64.39)	(485.12)	(68.75)
Quarter 3	149.93	528.51	169.78	293.87	286.95	154.07	727.52	220.35	946.45	195.82
	(31.61)	(93.29)	(20.03)	(194.47)	(25.34)	(36.52)	(224.45)	(58.62)	(510.07)	(61.47)
Quarter 4	68.96	166.06	-23.65	-108.43	-73.65	27.41	537.53	163.27	803.86	25.57
	(31.21)	(102.82)	(20.74)	(198.62)	(25.19)	(36.05)	(247.31)	(60.71)	(520.98)	(61.12)
Industry in Prior Year										
THS	60.24	15.58	-54.15	-548.18	-201.42	201.04	466.79	101.10	720.86	150.03
	(43.02)	(141.36)	(35.70)	(266.27)	(43.48)	(49.26)	(336.98)	(104.15)	(692.66)	(105.14)
Manufacturing	-29.10	231.18	-104.15	-62.23	-78.47	157.98	1450.76	332.67	1899.03	328.56
	(43.73)	(127.86)	(30.21)	(226.89)	(33.88)	(50.36)	(305.93)	(88.24)	(593.21)	(82.00)
Retail trade	15.93	-15.58	-38.91	-108.00	-72.93	381.71	1214.97	517.96	2707.63	685.52
	(31.30)	(114.04)	(24.24)	(245.59)	(32.60)	(35.27)	(271.04)	(70.12)	(636.64)	(78.49)
Service (excluding THS)	-0.22	176.78	-86.53	-31.85	-247.80	326.23	989.47	368.05	1826.51	377.71
	(30.70)	(103.80)	(23.03)	(228.02)	(32.78)	(35.03)	(247.15)	(67.01)	(592.04)	(79.15)
Other	-1.79	-283.99	-63.26	94.35	-38.28	195.47	542.47	249.10	1565.60	460.36
	(43.47)	(123.12)	(26.65)	(215.31)	(30.26)	(50.02)	(291.86)	(77.62)	(556.63)	(73.02)
THS and any other industry	41.67	-61.23	-115.36	-136.84	-311.13	293.09	306.62	384.42	347.22	362.95
	(38.65)	(132.87)	(31.65)	(243.94)	(39.21)	(44.45)	(317.99)	(92.33)	(637.08)	(94.70)
Any industry not THS	13.77	109.65	30.00	-238.05	42.48	233.65	332.41	236.20	1198.01	451.76
	(31.12)	(104.10)	(20.99)	(207.26)	(27.29)	(35.69)	(249.11)	(61.23)	(542.02)	(65.91)
Industry in reference quarter										
THS	421.09	595.88	1027.41	883.94	914.62	524.98	610.31	1332.79	802.12	1300.03
	(53.51)	(168.98)	(37.19)	(329.46)	(46.52)	(61.82)	(407.21)	(108.85)	(867.61)	(112.83)
Manufacturing	684.07	715.72	1608.25	1812.05	2316.46	681.99	243.69	1852.96	1191.37	2506.74
	(63.88)	(146.51)	(31.17)	(243.47)	(33.59)	(73.82)	(352.74)	(91.16)	(638.98)	(81.34)
Retail trade	392.64	689.14	871.50	915.23	1253.52	491.11	490.16	942.87	552.87	1376.11
	(34.77)	(134.52)	(25.10)	(300.53)	(35.64)	(40.13)	(323.89)	(73.44)	(790.85)	(86.46)
Service (excluding THS)	583.55	864.15	1205.29	1766.16	1499.28	678.21	711.82	1305.63	1338.13	1683.50
	(33.07)	(99.42)	(21.82)	(238.08)	(36.40)	(38.14)	(238.81)	(63.85)	(624.90)	(88.28)
Other	887.29	869.99	1614.21	1951.64	2080.56	949.21	735.60	1486.02	1897.47	2046.00
	(60.62)	(128.91)	(29.62)	(221.55)	(29.45)	(69.96)	(310.34)	(86.64)	(580.56)	(71.33)
THS and any other Industry	573.50	846.78	1408.27	1641.53	1360.00	654.83	787.22	1423.82	1317.86	1669.53
	(57.29)	(176.32)	(35.75)	(321.74)	(45.28)	(66.19)	(425.05)	(104.62)	(847.05)	(109.82)
Any industry not THS	566.07	1020.68	1442.59	1708.28	1986.27	614.30	958.56	1568.63	1571.85	2146.91
	(51.69)	(152.02)	(28.71)	(283.87)	(37.22)	(59.73)	(366.21)	(84.01)	(746.07)	(90.27)
Unemployment rate in county in outcome quarter	-2229.07	1401.51	-4990.92	-7518.97	-4675.95	-1517.71	6696.09	-4125.79	9347.04	-805.64
	(707.16)	(2293.58)	(381.29)	(5445.26)	(514.05)	(816.85)	(5500.37)	(1115.25)	(14261.32)	(1246.21)
Adj. R^2	0.1637	0.2420	0.2789	0.2412	0.0877	0.0679	0.0400	0.0214	0.0423	0.0324

Table A-4: Estimates for Regression Equations Predicting Employment Eight Quarters After Reference Quarter: Program Entry 1997

	Employment Eight Quarters After Reference Quarter					Differenced Employment				
	Females			Males		Females			Males	
Dependent Variable	TANF	Job Training	Employ-ment Exchange	Job Training	Employ-ment Exchange	TANF	Job Training	Employ-ment Exchange	Job Training	Employ-ment Exchange
Constant	0.333	0.211	0.164	0.159	0.233	0.084	-0.449	-0.283	-0.429	-0.261
	(0.049)	(0.107)	(0.022)	(0.133)	(0.019)	(0.061)	(0.082)	(0.017)	(0.108)	(0.015)
Age	-0.002	0.011	0.008	0.005	0.002	0.007	0.013	0.006	0.005	0.005
	(0.003)	(0.004)	(0.001)	(0.006)	(0.001)	(0.003)	(0.003)	(0.001)	(0.005)	(0.001)
Age square/100	-0.005	-0.020	-0.013	-0.012	-0.006	-0.016	-0.019	-0.010	-0.009	-0.009
	(0.004)	(0.005)	(0.001)	(0.007)	(0.001)	(0.005)	(0.004)	(0.001)	(0.006)	(0.001)
Years of education	0.009	0.006	0.002	0.004	0.004	0.005	0.007	0.000	0.010	0.001
	(0.003)	(0.007)	(0.002)	(0.007)	(0.001)	(0.004)	(0.005)	(0.001)	(0.006)	(0.001)
High school degree	-0.003	0.060	0.020	0.015	0.009	-0.014	0.029	0.016	-0.010	0.017
	(0.009)	(0.025)	(0.005)	(0.032)	(0.005)	(0.012)	(0.020)	(0.004)	(0.026)	(0.004)
College degree	-0.029	-0.052	0.000	-0.074	-0.011	0.004	-0.023	-0.002	-0.079	-0.012
	(0.030)	(0.037)	(0.008)	(0.037)	(0.007)	(0.038)	(0.029)	(0.006)	(0.030)	(0.006)
Nonwhite	0.036	-0.012	0.001	-0.039	-0.028	0.066	0.008	0.015	-0.011	-0.009
	(0.008)	(0.018)	(0.004)	(0.023)	(0.003)	(0.010)	(0.014)	(0.003)	(0.019)	(0.003)
Proportion of previous 8 quarters working	0.237	0.130	0.232	0.293	0.265	-0.772	-0.262	-0.237	-0.244	-0.262
	(0.019)	(0.040)	(0.009)	(0.053)	(0.008)	(0.020)	(0.029)	(0.006)	(0.040)	(0.006)
Working all of previous 8 qtrs	-0.015	-0.007	0.014	0.011	0.029	-0.104	0.030	0.023	0.052	0.048
	(0.011)	(0.021)	(0.005)	(0.027)	(0.004)	(0.013)	(0.016)	(0.004)	(0.022)	(0.003)
No work in any of previous 8 quarters	-0.055	-0.075	-0.060	0.049	-0.039	0.084	0.107	0.127	0.216	0.138
	(0.011)	(0.027)	(0.006)	(0.038)	(0.005)	(0.014)	(0.021)	(0.005)	(0.031)	(0.004)
Total annual earnings in the prior year/1000	0.003	0.001	0.001	0.001	0.001					
	(0.001)	(0.001)	(0.000)	(0.001)	(0.000)					
Total annual earnings two years prior/1000	0.001	0.002	-0.001	0.000	0.000					
	(0.001)	(0.001)	(0.000)	(0.001)	(0.000)					
St. Louis central	0.046	0.014	0.053	0.079	0.041	0.038	0.011	0.017	0.018	0.019
	(0.009)	(0.021)	(0.004)	(0.025)	(0.004)	(0.012)	(0.016)	(0.003)	(0.021)	(0.003)
Kansas City central	0.026	0.031	0.029	0.028	0.029	0.007	0.002	-0.002	-0.024	0.004
	(0.010)	(0.023)	(0.005)	(0.030)	(0.004)	(0.012)	(0.018)	(0.004)	(0.024)	(0.003)
Suburban metro	0.015	0.008	0.032	0.062	0.046	0.011	-0.022	0.006	0.021	0.028
	(0.010)	(0.020)	(0.004)	(0.027)	(0.004)	(0.013)	(0.016)	(0.003)	(0.022)	(0.003)
Small metro	0.006	0.034	0.021	0.070	0.013	0.011	0.016	0.003	0.006	0.002
	(0.010)	(0.023)	(0.004)	(0.034)	(0.004)	(0.013)	(0.018)	(0.003)	(0.028)	(0.003)

| | Employment Eight Quarters After Reference Quarter | | | | | Differenced Employment | | | | |
| | Females | | | Males | | Females | | | Males | |
Dependent Variable	TANF	Job Training	Employ-ment Exchange	Job Training	Employ-ment Exchange	TANF	Job Training	Employ-ment Exchange	Job Training	Employ-ment Exchange
Quarter 2	0.006	0.023	0.025	0.018	0.011	-0.014	-0.006	0.002	0.012	0.003
	(0.009)	(0.017)	(0.004)	(0.022)	(0.004)	(0.011)	(0.013)	(0.003)	(0.018)	(0.003)
Quarter 3	0.007	0.072	0.017	0.028	0.006	-0.011	0.021	0.005	0.041	0.001
	(0.008)	(0.017)	(0.004)	(0.023)	(0.003)	(0.011)	(0.013)	(0.003)	(0.019)	(0.003)
Quarter 4	-0.003	0.022	0.009	0.047	0.006	-0.024	-0.007	-0.007	0.040	-0.001
	(0.008)	(0.018)	(0.004)	(0.023)	(0.003)	(0.010)	(0.014)	(0.003)	(0.019)	(0.003)
Industry in prior year										
THS	-0.01	0.01	-0.02	-0.01	-0.02	0.10	0.03	0.03	0.03	0.03
	(.012)	(.025)	(.006)	(.031)	(.006)	(.014)	(.019)	(.005)	(.025)	(.004)
Manufacturing	-0.01	0.03	0.00	0.02	0.00	0.18	0.10	0.07	0.11	0.07
	(.012)	(.023)	(.005)	(.026)	(.004)	(.015)	(.018)	(.004)	(.022)	(.003)
Retail trade	0.01	0.00	0.00	0.00	0.00	0.21	0.08	0.07	0.09	0.07
	(.008)	(.020)	(.004)	(.029)	(.004)	(.010)	(.016)	(.003)	(.023)	(.003)
Service (excluding THS)	0.00	-0.01	-0.01	0.00	-0.02	0.21	0.07	0.06	0.09	0.05
	(.008)	(.018)	(.004)	(.027)	(.004)	(.010)	(.014)	(.003)	(.022)	(.003)
Other	-0.01	-0.03	-0.02	0.01	-0.01	0.16	0.07	0.06	0.12	0.07
	(.012)	(.022)	(.005)	(.025)	(.004)	(.015)	(.017)	(.004)	(.020)	(.003)
THS and any other industry	0.03	0.00	-0.01	-0.03	-0.01	0.12	0.04	0.02	0.03	0.02
	(.010)	(.024)	(.006)	(.028)	(.005)	(.013)	(.018)	(.004)	(.023)	(.004)
Any industry not THS	0.01	0.03	0.01	-0.02	0.01	0.07	0.02	0.03	0.01	0.03
	(.008)	(.018)	(.004)	(.024)	(.004)	(.010)	(.014)	(.003)	(.020)	(.003)
Industry in reference quarter										
THS	0.134	0.132	0.221	0.142	0.210	0.154	0.075	0.092	0.055	0.087
	(0.014)	(0.030)	(0.007)	(0.038)	(0.006)	(0.018)	(0.023)	(0.005)	(0.032)	(0.005)
Manufacturing	0.163	0.130	0.265	0.236	0.286	0.171	0.056	0.141	0.139	0.156
	(0.017)	(0.026)	(0.006)	(0.028)	(0.004)	(0.021)	(0.020)	(0.004)	(0.023)	(0.003)
Retail trade	0.149	0.115	0.218	0.166	0.242	0.180	0.053	0.103	0.126	0.121
	(0.009)	(0.024)	(0.005)	(0.035)	(0.005)	(0.012)	(0.019)	(0.004)	(0.029)	(0.004)
Service (excluding THS)	0.169	0.147	0.254	0.187	0.252	0.204	0.086	0.122	0.110	0.124
	(0.009)	(0.018)	(0.004)	(0.028)	(0.005)	(0.011)	(0.014)	(0.003)	(0.023)	(0.004)
Other	0.174	0.122	0.268	0.213	0.257	0.207	0.074	0.145	0.139	0.140
	(0.016)	(0.023)	(0.005)	(0.026)	(0.004)	(0.020)	(0.018)	(0.004)	(0.021)	(0.003)
THS and any other industry	0.176	0.188	0.281	0.266	0.258	0.186	0.111	0.138	0.169	0.124
	(0.015)	(0.031)	(0.006)	(0.038)	(0.006)	(0.019)	(0.024)	(0.005)	(0.031)	(0.005)
Any industry not THS	0.177	0.170	0.281	0.221	0.289	0.173	0.113	0.150	0.165	0.158
	(0.014)	(0.027)	(0.005)	(0.033)	(0.005)	(0.017)	(0.021)	(0.004)	(0.027)	(0.004)
Unemployment rate in county at outcome qtr	-0.436	0.523	-0.234	0.633	-0.168	-0.270	-0.303	-0.154	0.064	-0.146
	(0.189)	(0.407)	(0.069)	(0.635)	(0.067)	(0.237)	(0.316)	(0.054)	(0.523)	(0.053)
Adj. R^2	0.1276	0.0940	0.1727	0.1478	0.2013	0.1532	0.0792	0.0868	0.0883	0.0908

Table A-5: Multinomial Logit Estimation of Job Choice: Quarter Following Program Entry: 2001

	Females									Males					
	TANF			Job Training			Employment Exchange			Job Training			Employment Exchange		
	Job in THS	Job in THS and Other Industry	Job, but none in THS	Job in THS	Job in THS and Other Industry	Job, but none in THS	Job in THS	Job in THS and Other Industry	Job, but none in THS	Job in THS	Job in THS and Other Industry	Job, but none in THS	Job in THS	Job in THS and Other Industry	Job, but none in THS
Constant	-5.622	-6.214	-1.429	-4.546	-4.181	0.242	-4.828	-4.588	-1.020	-7.703	-4.303	-0.267	-3.456	-3.458	0.069
	(0.673)	(0.800)	(0.254)	(1.207)	(1.134)	(0.487)	(0.390)	(0.392)	(0.148)	(1.257)	(1.197)	(0.561)	(0.345)	(0.353)	(0.131)
Age	0.115	0.164	0.014	0.019	0.021	-0.037	0.032	-0.006	-0.017	0.162	0.101	0.021	0.055	0.046	-0.022
	(0.034)	(0.044)	(0.013)	(0.045)	(0.042)	(0.018)	(0.012)	(0.012)	(0.004)	(0.050)	(0.048)	(0.021)	(0.011)	(0.012)	(0.004)
Age square *100	-0.171	-0.290	-0.047	-0.021	-0.032	0.031	-0.064	-0.033	-0.001	-0.210	-0.150	-0.044	-0.095	-0.103	-0.001
	(0.054)	(0.071)	(0.020)	(0.057)	(0.054)	(0.023)	(0.016)	(0.017)	(0.006)	(0.065)	(0.064)	(0.027)	(0.015)	(0.016)	(0.005)
Years of education	0.056	0.040	0.056	0.065	0.057	-0.004	0.189	0.229	0.162	0.127	-0.036	-0.002	0.050	0.061	0.063
	(0.040)	(0.044)	(0.015)	(0.080)	(0.074)	(0.033)	(0.029)	(0.029)	(0.012)	(0.078)	(0.077)	(0.036)	(0.026)	(0.027)	(0.010)
High school degree	0.055	0.072	-0.021	0.292	0.014	0.084	-0.328	-0.525	-0.252	0.073	0.271	0.207	-0.308	-0.351	-0.021
	(0.114)	(0.125)	(0.045)	(0.309)	(0.271)	(0.121)	(0.109)	(0.108)	(0.042)	(0.290)	(0.276)	(0.140)	(0.088)	(0.088)	(0.037)
College degree	0.314	0.444	-0.100	0.075	-0.109	0.099	-0.467	-0.457	-0.201	-0.392	0.019	0.014	-0.233	-0.322	-0.159
	(0.342)	(0.373)	(0.171)	(0.399)	(0.409)	(0.184)	(0.140)	(0.136)	(0.056)	(0.403)	(0.439)	(0.180)	(0.134)	(0.137)	(0.050)
Nonwhite	0.574	0.491	0.177	0.339	0.433	0.236	0.266	0.103	-0.008	0.504	0.364	0.130	0.320	0.281	0.047
	(0.092)	(0.101)	(0.037)	(0.175)	(0.170)	(0.077)	(0.051)	(0.052)	(0.020)	(0.184)	(0.185)	(0.090)	(0.045)	(0.046)	(0.019)
Proportion of previous 8 quarters working	1.128	1.348	1.153	1.385	2.078	1.032	0.466	1.220	0.921	1.193	1.703	0.356	0.787	1.172	0.975
	(0.203)	(0.235)	(0.080)	(0.424)	(0.428)	(0.177)	(0.130)	(0.141)	(0.050)	(0.419)	(0.443)	(0.212)	(0.115)	(0.120)	(0.045)
Working all of previous 8 qtrs	-0.019	0.401	0.154	-0.466	-0.446	-0.193	0.021	0.043	0.258	-0.004	0.407	0.145	0.186	0.391	0.327
	(0.111)	(0.118)	(0.048)	(0.207)	(0.194)	(0.091)	(0.072)	(0.071)	(0.027)	(0.219)	(0.218)	(0.106)	(0.067)	(0.066)	(0.025)
No work in any of previous 8 quarters	-0.253	0.003	0.011	-0.035	0.122	0.270	-0.435	-0.079	-0.437	-0.457	-0.161	-0.067	-0.383	-0.211	-0.321
	(0.170)	(0.207)	(0.059)	(0.405)	(0.432)	(0.150)	(0.096)	(0.110)	(0.037)	(0.397)	(0.419)	(0.185)	(0.079)	(0.086)	(0.033)
Total annual earnings in the prior year /1000	0.021	0.032	0.036	0.000	0.000	0.004	-0.005	0.007	0.008	-0.036	-0.050	0.000	-0.024	-0.023	0.001
	(0.009)	(0.008)	(0.004)	(0.010)	(0.010)	(0.003)	(0.003)	(0.003)	(0.001)	(0.010)	(0.011)	(0.003)	(0.003)	(0.003)	(0.000)
Total annual earnings two years prior /1000	-0.017	-0.010	-0.015	-0.012	-0.020	-0.006	-0.010	-0.021	-0.010	-0.012	-0.017	0.000	-0.018	-0.021	-0.002
	(0.008)	(0.008)	(0.003)	(0.010)	(0.010)	(0.004)	(0.003)	(0.003)	(0.001)	(0.009)	(0.010)	(0.003)	(0.003)	(0.003)	(0.000)

Table A-5 -- Continued

| | Females | | | | | | | | | Males | | | | | |
| | TANF | | | Job Training | | | Employment Exchange | | | Job Training | | | Employment Exchange | | |
	Job in THS	Job in THS and Other Industry	Job, but none in THS	Job in THS	Job in THS and Other Industry	Job, but none in THS	Job in THS	Job in THS and Other Industry	Job, but none in THS	Job in THS	Job in THS and Other Industry	Job, but none in THS	Job in THS	Job in THS and Other Industry	Job, but none in THS
St. Louis central	0.527 (0.115)	0.384 (0.126)	-0.061 (0.044)	1.322 (0.225)	0.791 (0.207)	0.160 (0.089)	0.808 (0.064)	0.622 (0.065)	-0.254 (0.023)	0.831 (0.237)	0.872 (0.230)	0.142 (0.104)	0.623 (0.056)	0.478 (0.059)	-0.217 (0.021)
Kansas City central	0.588 (0.117)	0.471 (0.129)	-0.181 (0.047)	1.024 (0.256)	0.639 (0.237)	0.129 (0.105)	0.832 (0.072)	0.855 (0.070)	-0.203 (0.028)	0.643 (0.262)	0.668 (0.255)	0.049 (0.113)	0.717 (0.061)	0.787 (0.062)	-0.013 (0.024)
Suburban metro	0.249 (0.142)	0.411 (0.145)	-0.218 (0.052)	0.450 (0.295)	0.759 (0.239)	0.336 (0.103)	0.737 (0.070)	0.510 (0.071)	-0.078 (0.025)	0.758 (0.310)	0.761 (0.301)	0.143 (0.126)	0.597 (0.065)	0.778 (0.064)	0.107 (0.023)
Small metro	0.248 (0.140)	0.243 (0.151)	0.040 (0.049)	0.386 (0.301)	0.558 (0.246)	0.257 (0.102)	0.484 (0.079)	0.570 (0.075)	0.053 (0.027)	0.429 (0.320)	0.611 (0.294)	-0.135 (0.129)	0.541 (0.065)	0.758 (0.063)	0.070 (0.024)
Quarter 2	-0.025 (0.095)	-0.220 (0.102)	0.034 (0.041)	-0.310 (0.197)	-0.027 (0.171)	0.090 (0.085)	-0.137 (0.060)	-0.211 (0.059)	0.024 (0.023)	0.177 (0.198)	-0.206 (0.191)	-0.150 (0.099)	-0.115 (0.055)	-0.091 (0.052)	-0.085 (0.021)
Quarter 3	-0.305 (0.099)	-0.353 (0.102)	0.020 (0.040)	-0.557 (0.188)	-0.487 (0.173)	-0.064 (0.078)	-0.271 (0.060)	-0.335 (0.059)	-0.111 (0.023)	-0.286 (0.200)	-0.603 (0.192)	-0.375 (0.092)	-0.222 (0.054)	-0.352 (0.054)	-0.224 (0.021)
Quarter 4	-0.464 (0.110)	-0.930 (0.127)	-0.210 (0.044)	-0.314 (0.206)	-0.794 (0.218)	-0.337 (0.091)	-0.289 (0.066)	-0.527 (0.068)	-0.361 (0.025)	-0.364 (0.228)	-0.897 (0.231)	-0.429 (0.106)	-0.296 (0.058)	-0.642 (0.061)	-0.459 (0.022)
Unemployment rate in county at current qtr	-9.917 (3.084)	-9.014 (3.453)	-3.586 (1.109)	-7.036 (6.086)	-7.084 (6.004)	3.816 (2.520)	-6.941 (1.890)	-8.420 (2.023)	-2.045 (0.546)	10.365 (6.228)	6.578 (6.268)	5.174 (3.082)	-2.991 (1.548)	-1.752 (1.640)	-1.599 (0.515)

Table A-6: Predicted Probabilility of Employment by Industry in Quarter Following Program Entry in 2001

	One Industry						Multiple Industries	
	No Job	THS	Manufacturing	Retail Trade	Service[1]	Other	THS and Any Other Industry	Any Industry Not THS
				Panel A - Females				
TANF								
1. Probability of employment in reference quarter	0	1	1	1	1	1	1	1
	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
2. Probabilty of employment 8 quarters later	0.378	0.578	0.608	0.589	0.652	0.659	0.701	0.662
	(0.004)	(0.016)	(0.023)	(0.008)	(0.007)	(0.017)	(0.017)	(0.015)
3. Probability of employment 8 quarters later controlling characteristics	0.412	0.548	0.590	0.565	0.614	0.606	0.637	0.610
	(0.004)	(0.016)	(0.022)	(0.008)	(0.007)	(0.017)	(0.017)	(0.015)
4. Impact on probability of employment, relative to no job category	0	0.136	0.178	0.154	0.202	0.194	0.226	0.198
	(0)	(0.016)	(0.022)	(0.009)	(0.009)	(0.017)	(0.018)	(0.015)
5. Impact on probability of employment based on difference-in-difference	0	0.159	0.196	0.166	0.227	0.208	0.233	0.218
	(0)	(0.021)	(0.028)	(0.012)	(0.011)	(0.022)	(0.022)	(0.019)
Job Training								
1. Probability of employment in reference quarter	0	1	1	1	1	1	1	1
	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
2. Probabilty of employment 8 quarters later	0.575	0.682	0.785	0.719	0.739	0.790	0.791	0.796
	(0.011)	(0.030)	(0.021)	(0.019)	(0.012)	(0.019)	(0.024)	(0.020)
3. Probability of employment 8 quarters later controlling characteristics	0.581	0.683	0.718	0.735	0.751	0.778	0.788	0.784
	(0.010)	(0.029)	(0.024)	(0.019)	(0.013)	(0.021)	(0.027)	(0.022)
4. Impact on probability of employment, relative to no job category	0	0.102	0.137	0.154	0.170	0.197	0.207	0.203
	(0)	(0.031)	(0.025)	(0.022)	(0.016)	(0.023)	(0.029)	(0.024)
5. Impact on probability of employment based on difference-in-difference	0	0.088	0.169	0.150	0.189	0.237	0.207	0.232
	(0)	(0.037)	(0.031)	(0.026)	(0.020)	(0.028)	(0.035)	(0.030)
Employment Exchange								
1. Probability of employment in reference quarter	0	1	1	1	1	1	1	1
	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
2. Probabilty of employment 8 quarters later	0.398	0.666	0.781	0.706	0.749	0.780	0.767	0.788
	(0.003)	(0.010)	(0.005)	(0.005)	(0.003)	(0.005)	(0.009)	(0.005)
3. Probability of employment 8 quarters later controlling characteristics	0.440	0.674	0.743	0.703	0.733	0.730	0.751	0.747
	(0.003)	(0.009)	(0.006)	(0.005)	(0.004)	(0.005)	(0.009)	(0.006)
4. Impact on probability of employment, relative to no job category	0	0.234	0.303	0.263	0.293	0.290	0.311	0.307
	(0)	(0.009)	(0.007)	(0.005)	(0.005)	(0.006)	(0.009)	(0.006)
5. Impact on probability of employment based on difference-in-difference	0	0.240	0.334	0.282	0.315	0.315	0.326	0.334
	(0)	(0.011)	(0.008)	(0.006)	(0.005)	(0.007)	(0.011)	(0.008)

Table A-6 -- Continued

	One Industry						Multiple Industries	
							THS and Any Other Industry	Any Industry Not THS
	No Job	THS	Manufacturing	Retail Trade	Service[1]	Other		
				Panel B - Males				
Job Training								
1. Probability of employment in reference quarter	0	1	1	1	1	1	1	1
	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
2. Probabilty of employment 8 quarters later	0.520	0.595	0.798	0.679	0.701	0.706	0.750	0.784
	(0.013)	(0.032)	(0.017)	(0.025)	(0.020)	(0.019)	(0.028)	(0.023)
3. Probability of employment 8 quarters later controlling characteristics	0.524	0.637	0.725	0.691	0.732	0.713	0.779	0.769
	(0.012)	(0.030)	(0.020)	(0.024)	(0.020)	(0.019)	(0.029)	(0.025)
4. Impact on probability of employment, relative to no job category	0	0.113	0.202	0.168	0.208	0.189	0.255	0.245
	(0)	(0.032)	(0.023)	(0.027)	(0.024)	(0.022)	(0.032)	(0.028)
5. Impact on probability of employment based on difference-in-difference	0	0.115	0.225	0.152	0.185	0.217	0.232	0.259
	(0)	(0.039)	(0.028)	(0.032)	(0.028)	(0.027)	(0.038)	(0.033)
Employment Exchange								
1. Probability of employment in reference quarter	0	1	1	1	1	1	1	1
	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)
2. Probabilty of employment 8 quarters later	0.367	0.580	0.784	0.706	0.726	0.724	0.691	0.770
	(0.003)	(0.009)	(0.004)	(0.005)	(0.005)	(0.004)	(0.008)	(0.005)
3. Probability of employment 8 quarters later controlling characteristics	0.413	0.609	0.738	0.685	0.709	0.698	0.694	0.729
	(0.002)	(0.008)	(0.004)	(0.005)	(0.005)	(0.004)	(0.008)	(0.006)
4. Impact on probability of employment, relative to no job category	0	0.196	0.325	0.272	0.296	0.285	0.281	0.316
	(0)	(0.009)	(0.005)	(0.005)	(0.005)	(0.005)	(0.008)	(0.006)
5. Impact on probability of employment based on difference-in-difference	0	0.193	0.340	0.284	0.301	0.289	0.282	0.322
	(0)	(0.010)	(0.006)	(0.006)	(0.006)	(0.005)	(0.010)	(0.007)

[1]Excluding THS.

Table A-7: Transition between Sectors Over Eight Quarters: 2001

				Employment Eight Quarters Later				
	Reference Quarter Employment	No Job	Service, including temp help	Manufacturing	Retail trade	Other	Multiple sectors	

Panel A - Females

		No Job	Service, incl. temp help	Manufacturing	Retail trade	Other	Multiple sectors	
TANF	No job	62.17%	16.7%	1.8%	10.3%	4.9%	4.2%	100.0%
One	THS	42.2%	26.5%	4.4%	8.6%	10.7%	7.6%	100.0%
Sector	Manufacturing	39.2%	13.3%	22.5%	10.9%	6.4%	7.7%	100.0%
	Retail trade	41.1%	15.5%	1.8%	28.2%	5.6%	7.8%	100.0%
	Service[1]	34.8%	41.5%	1.5%	8.6%	5.8%	7.7%	100.0%
	Other	34.1%	15.9%	1.6%	9.6%	31.6%	7.3%	100.0%
Multiple	THS and any other industry	29.9%	30.3%	2.5%	13.5%	9.5%	14.3%	100.0%
Sectors	Any industry not THS	33.8%	23.5%	2.8%	17.6%	9.6%	12.8%	100.0%
Job Training	No job	42.5%	26.6%	6.6%	8.2%	11.0%	5.1%	100.0%
One	THS	31.8%	32.6%	9.1%	7.0%	14.5%	5.0%	100.0%
Sector	Manufacturing	21.5%	16.8%	42.8%	7.2%	7.5%	4.3%	100.0%
	Retail trade	28.1%	16.3%	3.1%	35.1%	8.0%	9.4%	100.0%
	Service[1]	26.1%	50.2%	1.7%	4.0%	9.2%	8.8%	100.0%
	Other	21.0%	14.5%	3.3%	5.6%	49.1%	6.5%	100.0%
Multiple	THS and any other industry	20.9%	27.7%	10.1%	10.4%	17.6%	13.3%	100.0%
Sectors	Any industry not THS	20.5%	29.9%	6.7%	11.5%	16.7%	14.7%	100.0%
Employment Exchange	No job	60.2%	16.5%	2.9%	8.5%	8.8%	3.2%	100.0%
One	THS	33.4%	28.4%	5.5%	8.0%	17.9%	6.8%	100.0%
Sector	Manufacturing	21.9%	7.7%	56.2%	3.9%	5.8%	4.6%	100.0%
	Retail trade	29.4%	13.9%	2.3%	38.4%	8.4%	7.6%	100.0%
	Service[1]	25.1%	54.0%	1.4%	5.4%	7.7%	6.4%	100.0%
	Other	22.0%	11.6%	3.6%	4.8%	52.4%	5.5%	100.0%
Multiple	THS and any other industry	23.3%	29.4%	7.7%	11.1%	17.6%	10.9%	100.0%
Sectors	Any industry not THS	21.2%	25.7%	6.9%	12.7%	18.9%	14.6%	100.0%

Panel B - Males

		No Job	Service, incl. temp help	Manufacturing	Retail trade	Other	Multiple sectors	
Job Training	No job	48.0%	13.4%	10.1%	6.7%	17.4%	4.5%	100.0%
One	THS	40.5%	21.5%	10.1%	4.2%	15.6%	8.0%	100.0%
Sector	Manufacturing	20.2%	8.6%	48.1%	5.0%	14.1%	3.9%	100.0%
	Retail trade	32.1%	7.9%	6.8%	31.6%	10.7%	11.0%	100.0%
	Service[1]	29.9%	37.1%	3.6%	7.6%	14.9%	7.0%	100.0%
	Other	29.4%	9.0%	5.3%	2.3%	48.7%	5.3%	100.0%
Multiple	THS and any other industry	25.0%	22.6%	11.7%	9.7%	17.7%	13.3%	100.0%
Sectors	Any industry not THS	21.7%	15.6%	14.6%	11.9%	22.9%	13.4%	100.0%
Employment Exchange	No job	63.3%	8.9%	5.4%	6.2%	13.4%	2.9%	100.0%
One	THS	42.0%	17.2%	10.9%	7.4%	15.3%	7.2%	100.0%
Sector	Manufacturing	21.6%	4.5%	58.5%	3.0%	8.2%	4.2%	100.0%
	Retail trade	29.4%	8.1%	4.3%	39.8%	10.8%	7.6%	100.0%
	Service[1]	27.4%	45.2%	3.3%	6.1%	11.6%	6.4%	100.0%
	Other	27.6%	5.7%	4.5%	3.6%	54.1%	4.6%	100.0%
Multiple	THS and any other industry	30.9%	16.0%	12.7%	9.6%	19.2%	11.6%	100.0%
Sectors	Any industry not THS	23.0%	14.7%	11.6%	13.1%	23.6%	14.1%	100.0%

[1]Excluding THS.

Table A-8: Predicted Earnings and Impact by Employment in Reference and Outcome Quarter: 2001

Impacts Relative to No Job	THS	Manufacturing	Retail Trade	Service[1]	Other	Multiple Industries	
						THS and Any Other Industry	Any Industry Not THS
	Panel A - Females						
TANF							
1. Impact of reference quarter industry on earnings	453	803	360	645	886	764	614
	(56)	(77)	(32)	(30)	(59)	(61)	(52)
2. Impact of reference quarter industry, controlling outcome industry	155	277	86	180	312	298	171
	(42)	(58)	(24)	(23)	(45)	(46)	(39)
3. Impact of outcome quarter industry, controlling reference quarter industry	1059	2968	1749	2293	2837	1810	2192
	(55)	(54)	(25)	(22)	(33)	(58)	(39)
Job Training							
1. Impact of reference quarter industry on earnings	596	1,137	447	930	1,379	1,014	1,120
	(162)	(135)	(115)	(87)	(123)	(153)	(130)
2. Impact of reference quarter industry, controlling outcome industry	277	337	122	364	541	302	384
	(123)	(106)	(89)	(67)	(97)	(116)	(99)
3. Impact of outcome quarter industry, controlling reference quarter industry	1878	4396	2574	3300	3767	2785	3426
	(161)	(104)	(90)	(64)	(80)	(190)	(109)
Employment Exchange							
1. Impact of reference quarter industry on earnings	1,286	2,140	1,121	1,579	1,980	1,690	1,788
	(60)	(45)	(35)	(30)	(38)	(60)	(41)
2. Impact of reference quarter industry, controlling outcome industry	414	455	305	484	596	464	531
	(47)	(39)	(28)	(24)	(31)	(47)	(33)
3. Impact of outcome quarter industry, controlling reference quarter industry	2472	4922	2997	3727	4441	3004	3954
	(67)	(37)	(28)	(23)	(27)	(77)	(39)

Table A-8 -- Continued

Impacts Relative to No Job	THS	Manufacturing	Retail Trade	Service[1]	Other	Multiple Industries THS and Any Other Industry	Any Industry Not THS
				Panel B - Males			
Job Training							
1. Impact of reference quarter industry on earnings	392 (225)	1,703 (161)	771 (188)	955 (165)	1,525 (156)	1,305 (220)	1,564 (193)
2. Impact of reference quarter industry, controlling outcome industry	13 (167)	352 (125)	234 (143)	218 (125)	563 (119)	319 (165)	468 (145)
3. Impact of outcome quarter industry, controlling reference quarter industry	2421 (203)	5879 (127)	3555 (143)	4010 (123)	4809 (104)	2819 (243)	4451 (182)
Employment Exchange							
1. Impact of reference quarter industry on earnings	1,049 (76)	2,805 (47)	1,644 (49)	2,010 (49)	2,425 (41)	1,509 (76)	2,296 (55)
2. Impact of reference quarter industry, controlling outcome industry	135 (61)	620 (40)	506 (40)	548 (41)	730 (34)	92 (61)	626 (45)
3. Impact of outcome quarter industry, controlling reference quarter industry	2586 (82)	6354 (39)	4232 (40)	5004 (39)	5768 (31)	3406 (91)	5096 (54)

[1]Excluding THS.