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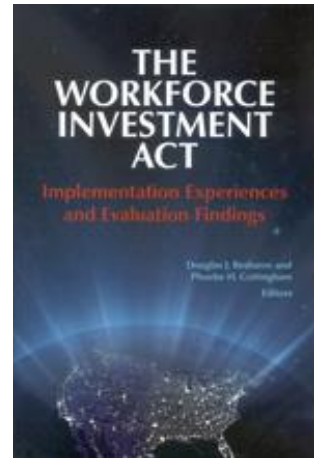
A Nonexperimental Evaluation of WIA Programs

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The Workforce Investment Act

Implementation Experiences and Evaluation Findings

Douglas J. Besharov
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A Nonexperimental Evaluation of WIA Programs

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The recent economic recession has highlighted and exacerbated difficulties faced by low-wage workers in recent decades. Perhaps most troubling is a significant and persistent rise in the rate of long-term unemployment—workers unemployed for more than six months. The 2009 American Recovery and Reinvestment Act includes an unprecedented level of funding for the public workforce development system and associated employment and training programs.[1] This injection of resources to aid unemployed and underemployed workers nearly doubled U.S. federal government funding for WIA programs—youth employment, adult job training, dislocated worker assistance, Job Corps, and other national activities—that had been steadily declining since the start of the WIA program in 2000 (Frank and Minoff 2005).

Since its inception, there has been no rigorous evaluation of the WIA programs that serve adults. In the face of this substantially expanded public investment in employment and training, we argue that

rigorous evidence on the impact and effectiveness of WIA services is needed now to guide the use of these resources in generating the greatest potential benefit for workers and the highest possible return to taxpayer dollars.[2]

WIA is distinguished from its predecessor, JTPA, primarily by the introduction of a One-Stop service delivery system designed to improve coordination and integration of services, its use of ITAs in training services, and changes in governance structures at the state and local levels. Prior to the start of the recession in December 2007, WIA had reduced the share of low-income individuals served by one-third and decreased the length of time spent in training and the expenditures per trainee (Osterman 2007). Thus, important changes in both investments in and the implementation of public employment training programs have taken place under WIA, and yet surprisingly little is known about the impact of WIA and its components on labor market outcomes.

To date, evaluations of WIA have provided very limited information on program effectiveness.[3] This study employs nonexperimental matching methods to evaluate the WIA Adult and Dislocated Worker programs using data from 12 states that cover approximately 160,000 WIA participants and nearly 3 million comparison group members. Within each state, we compare WIA program participants with a matched comparison population of individuals who have not participated in the WIA program but who are observationally equivalent across a range of demographic characteristics, prior participation in employment programs, and labor market experiences. Comparison group members are drawn from those who have participated in the ES under Wagner-Peyser legislation or who have filed claims for UI benefits.

This study adds to an expanding literature that evaluates active labor market programs. In general, this literature is moderately supportive of the benefits of job training and related active labor market programs on participants. Card et al. (2009) observe that job training programs, especially longer-duration programs, tend to have very small or negative impacts on employment measures in periods of less than a year, presumably reflecting "lock-in" effects, but have positive effects in the second or third years (see also Dyke et al. [2006]; Hotz, Imbens, and Klerman [2006]). One useful benchmark is the random assignment evaluation of JTPA program participation in the late 1980s. Program enrollees experienced minimal incremental effects in the two quarters

after random assignment (which took place at program entry), but the increment in quarterly earnings increased to $300–$350 (2006 $) by the tenth quarter (Orr et al. 1996, p. 107).

Our results indicate that the average participant in the WIA Adult program obtains a several-hundred-dollar increase in quarterly earnings. Adult program participants who obtain training have lower earnings in the months during training and the year after exit than those who do not receive training, but they catch up within 10 quarters, ultimately registering large gains. The marginal benefits of training exceed, on average, $400 in earnings each quarter three years after program entry. Dislocated workers experience several quarters for which earnings are depressed relative to comparison group workers after entering WIA, and although their earnings ultimately match or overtake the comparison group, the benefits they obtain are smaller than for those in the Adult program and in some cases are indistinguishable from zero.

OVERVIEW OF WIA ADULT AND DISLOCATED WORKER PROGRAMS

We evaluate two WIA programs: the Adult program, serving largely disadvantaged individuals, and the Dislocated Worker program, serving those who have lost jobs. Although the Adult program is designed largely for individuals who are unemployed, employed individuals are eligible to participate if participation allows them to achieve economic self-sufficiency. The target population for the Dislocated Worker program is workers facing layoffs and those eligible for unemployment insurance, although other individuals who have lost their jobs are eligible if staff decide they fall in several broad categories.[4] Participation in the WIA programs is voluntary, but access is restricted, as program staff must admit participants and authorize any services that are provided. The analyses here focus on individuals entering WIA in the period July 2003–June 2005 (program years 2003 and 2004), which allows sufficient time after the program's initial startup (July 2000 in most states), while providing an extended follow-up period.

Although legislative requirements establish a general programmatic structure, states and local areas have a great deal of latitude in

implementing the WIA programs.[5] States have further specified rules, and, in keeping with the spirit of local control in WIA legislation, they have also left many decisions to the local agency, the WIB. Legislation does not define economic self-sufficiency, so whether an employed individual requires services is left largely to local discretion. In the first few years of WIA implementation, incentives to cream skim in admission to the program were documented by the GAO (2002), and the point at which individuals were formally registered in WIA differed substantially across sites.

For both the Adult and Dislocated Worker programs, WIA legislation specifies three levels of service. All participants who enter WIA receive core services, which include staff-assisted job search and placement, provision of labor market information, and basic counseling, corresponding closely to the staff-assisted services offered by state offices as part of the ES under Wagner-Peyser legislation. Once individuals receive core services, staff may recommend that they receive intensive services, which involve comprehensive assessment, more extensive counseling and career planning, and possibly short courses. Participants in intensive services may then be recommended to receive training services. Under WIA, most training is provided by separate organizations—including community colleges, proprietary schools, nonprofits servicing the disadvantaged, and others—through a voucher (the ITA).

Given that ES services are very similar to WIA core services, at least in terms of their basic structure, individuals needing such services who are not accepted into the WIA program are normally referred to ES—which is usually available at the same site. In some sites WIA enrolls only individuals who are authorized to receive intensive or training services. Despite the structure of the ITA as a voucher, WIA program staff retain power to determine who will receive the voucher and, in consequence, how it is used. Staff are generally required to assure that training prepares participants for jobs in high demand, although how this is implemented, including the extent of counselor involvement in the training decision, is highly variable.

Those locations that follow the spirit of the sequential service mandate might be expected to provide training primarily to individuals who had been unsuccessful in obtaining employment through less intensive services, causing negative selection into training. On the other hand, in

most sites, as many as one-third of those who participate in WIA have a particular training goal prior to program entry (they are often referred to WIA by the training provider), and, in general, WIB staff make an effort to accommodate them. Finally, staff are under pressure to provide training to individuals whose employment outcomes will aid the performance measures, so insofar as counselors can identify those who will ultimately succeed in the labor market, we would expect positive selection.

In the period of our study, nationwide about one in five WIA participants received only core services, and about two in five were coded as receiving training services. Of those who received training, up to 10 percent received on-the-job training and another 5 percent received basic skills training. The remainder were coded as receiving occupational and other training, including an unknown amount of customized training for employers. About half of all training was funded by ITAs. Little is known about the character or intensity of the training offered, but approximately two-thirds of training recipients received some kind of credential. Between one-half and one-third of participants exited WIA in less than 26 weeks, whereas a similar proportion remained in the program for at least a year.[6] Both funding and maximum time limits for training activities varied dramatically across states and across WIBs within a state, as did expenditures per participant. The average state spent about $5,000 for each participant exiting the program; the lowest average expenditure was about $1,000 and the largest about $15,000 (USDOL/ETA 2009).

Although there is potential overlap between Adult and Dislocated Worker program participants, in practice they differ quite dramatically in terms average age, gender, race, and prior work experience. Given that the two programs serve very different functions, each is analyzed separately. The analysis presented here does not distinguish core and intensive levels of service.

STUDY SAMPLE, DATA, MEASURES, AND METHOD OF ANALYSIS

Study Sample

In December 2007, the USDOL issued a notice requesting that state workforce agencies provide access to administrative data for use in an evaluation of WIA activities funded under federal legislation. Agencies in all 50 states were contacted and efforts were made to negotiate agreements by which necessary data would be released to the researchers. Funds were made available to cover state expenses, and states were promised that individually identifiable state results would not be released. Ultimately, agreements were reached and necessary data were provided by 12 states: Connecticut, Indiana, Kentucky, Maryland, Missouri, Minnesota, Mississippi, Montana, New Mexico, Tennessee, Utah, and Wisconsin.[7]

As noted at the beginning of the chapter, we employ matching methods in which program participants are matched with individuals in a comparison group based on observed variables.[8] All analyses are based on state administrative data, with files identifying program participants and comparison group members, as well as employment data, drawn from each state. The comparison group is drawn from either UI claimants or from ES participants (i.e., individuals who register with the state's job exchange service and receive services under Wagner-Peyser legislation). Of the 12 states in our analysis, 9 have UI claimant comparison data, while three have comparison data from ES participants. Estimates of the incremental impact of training use a comparison group consisting of WIA participants who did not receive training services, i.e., of those receiving only core or intensive services.

Data Sources and Measures

The base data for the 12 states include annual WIASRD or closely related data files obtained from each state that provide information on all participants exiting the WIA program within a program year (July–June). For most states, the data files extend through June 2007 (program year 2006). These data also include an individual identifier to allow a

match with other state data. The focus of the current analysis is on WIA participants who entered the WIA program in the period July 2003–June 2005.

Comparison group information derives from state administrative data for UI claims or ES participants. UI wage record data provide quarterly earnings for all employees in UI-covered firms within a state. Data extend through calendar year 2007, which, when matched with WIASRD information and information for individuals in the comparison groups, generate the study's primary outcome measures. These include earnings and employment for participants for up to 16 quarters following participation and for comparison group members in the same periods. These data also include earnings prior to WIA participation, facilitating the construction of employment histories for participants and comparison group members. All earnings have been adjusted for inflation to correspond with the first quarter of 2006.

It has long been recognized that controls for standard demographic characteristics such as gender, age, education, and race are important. In addition to these, we capture local labor market characteristics using aggregates of county of residence or service (or where county is not available, the local Workforce Investment Area), and the details of the labor market experiences of individuals in the period immediately prior to program participation.[9] Wage record data provide information on employment status at the time of initial program involvement and for prior years. Additional variables include controls for veteran status and prior earnings.

Analyses are performed separately by gender. Where possible, WIA participants who enter in a given quarter are also matched with individuals in the comparison sample who have contact with their respective programs in the same quarter, providing an exact match on quarter of entry.

Descriptive Statistics

Table 13A.1 in Appendix 13A provides sample sizes and means for WIA participants and the comparison group in the 12 states. A total of 95,580 unique individuals entered the WIA Adult program during the observation window. Since about 2 percent entered the program more than once, the total number of entries was 97,552. Similarly, 63,515

individuals entered the Dislocated Worker program, producing a total of 64,089 program entries.[10] Nearly 3 million unique individuals participate in comparison programs (UI claimants or ES participants) and are available to be matched to program participants, contributing approximately 6.2 million quarters of program activity.[11]

Individuals who participated in the WIA Adult program are more likely to be female and minority than individuals in the comparison sample; they are also appreciably younger. These differences reflect the fact that participants in the WIA Adult program tend to be economically disadvantaged, whereas participants in the comparison sample are individuals who have recently lost jobs. Therefore, individuals in the comparison sample have the characteristics of individuals with relatively strong labor market attachments—white, male, older workers with more education. Comparing participants in the WIA Dislocated Worker program with the comparison group, it is clear there are fewer differences—participants in the WIA Dislocated Worker program are more likely to be female and are slightly older, but differences are smaller. Participants in the WIA Adult program are less likely to have worked continuously in the six prior quarters and are much more likely to have not worked in any of the six quarters prior to entering the program; they also have much lower annual earnings in the two years prior to entering the program. In contrast, participants in the WIA Dislocated Worker program have similar labor market attachment and only slightly lower earnings than those in the comparison program.

Approximately 4–5 percent of WIA entrants had previously participated in WIA (either the Adult or Dislocated Worker program). About one-fifth of Adult program participants had prior comparison program experience, compared to over two-fifths of Dislocated Workers. About two-thirds of comparison program participants had participated in WIA in the prior two years.

Within each program, participants who receive training services are more likely to be female and much less likely to be black than participants who do not receive training services. Differences in education are very small. Based on prior earnings, those receiving training services appear to have had greater labor market success, but measures of employment imply only small differences in employment activity.

Notwithstanding these differences, there are important similarities in the patterns of earnings for treated and comparison cases. The earn-

ings of the WIA participants display a decline in average earnings over the year or two prior to program entry, a pattern called the "Ashenfelter dip" (Ashenfelter 1978; Heckman and Smith 1999), reflecting the fact that individuals often enter such programs following a period of setbacks in employment. There is a similar decline preceding program participation for the comparison group, suggesting that there will be sufficient numbers of individuals to match with WIA participants on the basis of prior employment. Equally important, the common pattern suggests that there may be similarities in the individual employment environments faced by the comparison and treatment groups, suggesting that unmeasured factors may be similar as well.

Method of Analysis

We estimate the impact of participation in the WIA Adult or Dislocated Worker programs on outcomes for those who participate, that is, the effect of the treatment on the treated. We use propensity score matching, which, like other matching and related methods, assumes that the outcome that would occur in the absence of the treatment is conditionally independent of the treatment (Rosenbaum and Rubin 1983).

Control variables include calendar quarter of program entry, gender, age, years of educational attainment, race/ethnicity, disability status, veteran status (for males), local labor market, employment information based on wage record data over the two years prior to program entry (including employment transitions and earnings), industry of employment in the prior year, and program participation history up to four years prior to WIA entry (WIA; UI or ES).

Although the conditional independence assumption cannot be tested directly, we apply a reasonable specification test that examines prior earnings. If subsequent earnings in the absence of the treatment would have been the same for treated and comparison groups conditional on measured characteristics, we would expect prior earnings to be the same as well. Conversely, if differences in stable factors that influence earnings exist between the treatment and comparison group, we expect there to be differences in the conditional means. In practice, the test based on this comparison amounts to estimating the "effect" of program participation on prior earnings. If there is no significant effect,

this suggests that there are no stable factors influencing income that differ for the treated and control group.

Where the specification test fails, individual fixed effects estimators provide an alternative approach to controlling for differences across individuals who participate in WIA.[12] So long as such differences have stable effects on earnings, this specification can eliminate bias. Despite the benefits of the difference-in-difference estimators, depending on the processes underlying earnings dynamics and program participation, estimates may have biases that are not present in cross-sectional matching. The difference-in-difference estimator needs to be understood as one of several estimates that make different assumptions.

The estimator of program impact that we use here is many-to-one caliper matching with replacement based on the propensity score. Matching is based on a constant radius expressed as the difference in the log-odds of the propensity score between treated and comparison cases. We report conditional standard errors based on methods recommended by Imbens and Wooldridge (2008) and Imbens (2008). The matching model specification was determined separately for each of the comparisons by gender within each of the 12 states.

RESULTS OF IMPACT ESTIMATION FOR ADULT PROGRAM

We obtain estimates of WIA program impacts on average inflation-adjusted earnings and employment in the 16 quarters following program start. After obtaining state-specific impact estimates, the mean across states is estimated by weighting the estimate for a given state by the number of participants who were matched in that state. The resulting weighted mean provides an estimate of the average impact for matched WIA participants who entered the program during the period considered. Associated with each state impact estimate is an estimated conditional standard error, which is combined across states in the conventional way to form the standard error for the weighted average. We focus on averages across participants in the 12 states to reduce sampling error—which is substantial—and average across idiosyncratic state differences.

Figures 13.1 and 13.2 provide estimates of the impacts of the WIA Adult program on earnings for women and men, respectively. The horizontal axis extends from 1 to 16, identifying the quarter following program entry. The vertical axis is in dollars, indicating the difference between average earnings in a quarter for the WIA Adult program participants and matched comparison program participants. Also on the graph are dashed lines that show the confidence interval for each estimate. The lower dashed line subtracts twice the conditional standard error from the estimate, and the upper dashed line adds twice the standard error.[13] Also presented in this figure are the estimates of "impact" on earnings 10 and 16 quarters prior to program entry, providing a specification test of the model.

The estimates reported in the figures imply that, for both genders, participants generally earn between $400 and $600 more per quarter than matched individuals in the comparison program over our follow-up period. For women, the impact estimate over most of the 16 quarters is between $500 and $600 per quarter, whereas for men there is a decline

Figure 13.1 Adult Program Treatment Effect on Quarterly Earnings for Females, WIA versus Comparison Group
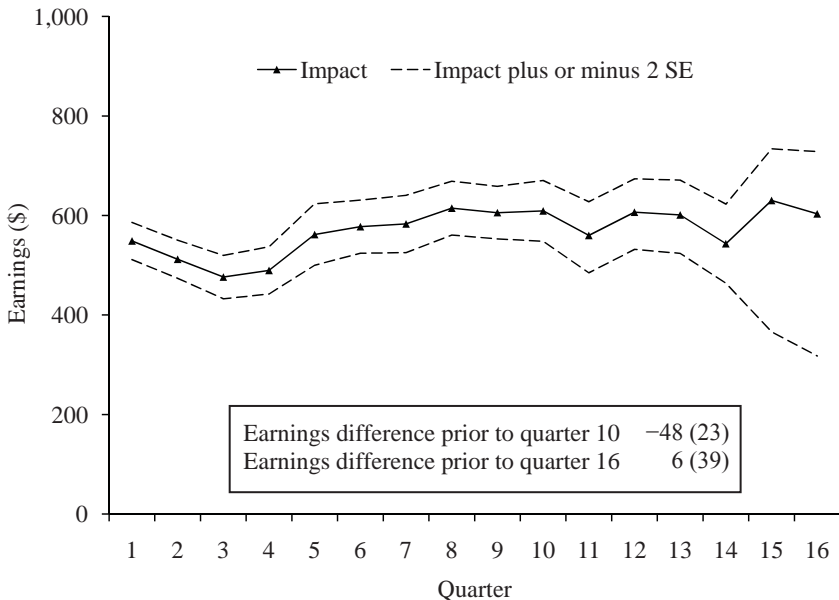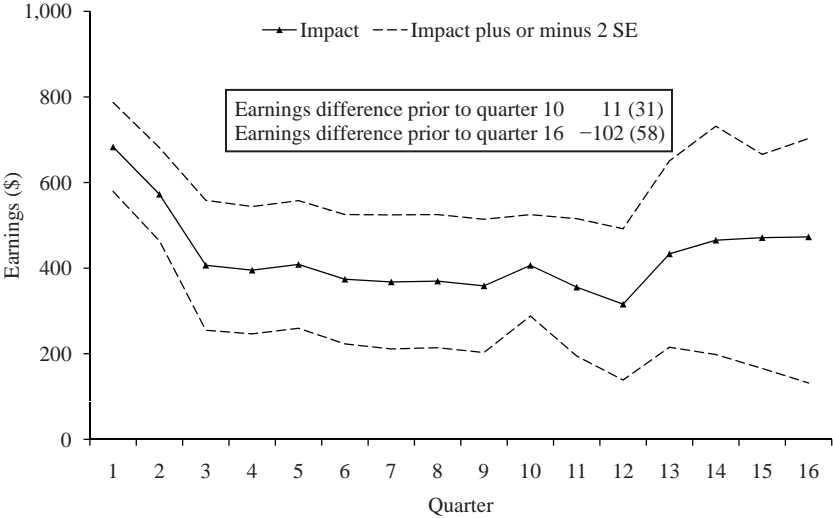
Figure 13.2 Adult Program Treatment Effect on Quarterly Earnings for Males, WIA versus Comparison Group

in the first three quarters, with the level settling in the range of $400. In percentage terms, the program increases earnings by about 30 percent for women after the second quarter and by about 15 percent for men.

We calculated analogous estimates for employment based on the same methods, using the proportion employed (identified as having received positive earnings in the quarter) as the dependent variable. The basic pattern of results was very similar to that for earnings. In particular, female participants' employment rate impact estimate was 13 percentage points in the first quarter after participation but declined to about 8 points within a year, and ultimately to about 6 points. Male impacts were one or two percentage points lower. The employment proportion is about 0.55 in the absence of the program, so employment increases by up to 15 percent.

As noted earlier, there are substantial differences in the proportion of individuals receiving training across the state programs, possibly contributing to differing patterns of effects for programs with different levels of training. First, long-run program impacts could be higher in states with more intensive services. Second, a large share of the value may well occur with a greater lag, since training benefits presumably

accrue over a more extended period. We separately tabulated impact estimates for the seven states that provided training to more than half of their participants. In these states taken together, 68 percent of Adult program participants received training. The initial effects—during the first several quarters after program entry—in these seven states were very similar to the aggregate for all states. However, in contrast to the full sample, earnings were higher in subsequent quarters, providing at least weak evidence that high-training states produce benefits that endure longer.

Taken at face value, these results imply that the program has strong and substantial impacts with little or no lag. These could reflect aggressive actions by program staff to help workers obtain employment initially, with training assuring benefits that accrue over an extended period. Skeptics will argue, however, that the findings of such large initial impacts call into question the appropriateness of the comparison group and ultimately the validity of the results. With most training programs, participants are expected to obtain little benefit initially—possibly experiencing earnings reductions—as they engage in training activities that supplant employment that would otherwise occur. In these data, the mean time in the program is between two and three quarters, so we might expect that program participation would hinder participants' employment and earnings in the first few quarters.

In order for selection to cause these results, it must be the case that WIA participants have unmeasured attributes that make them more likely than those in the comparison program to obtain employment or higher earnings. Staff admission criteria or participant choice would need to select entrants who were appreciably more likely to obtain employment than other individuals with similar characteristics, employment, and program participation histories.

One test for selection is provided by analyses that predict prior earnings. Although controls are included for earnings in the eight quarters prior to entry, if there are stable factors that improve the employment prospects for treated cases relative to matched comparison cases, earlier earnings would be higher for the WIA cases. We calculate the difference in earnings between treated and comparison cases for measures applying to the 10th and 16th quarters prior to entry, presenting these estimates as inserts in the figures. These estimates show that earnings are *not* higher for WIA participants; in most cases, the differences are

small (see Figures 13.1 and 13.2). The largest differences are for male WIA participants 16 quarters earlier, for which it appears that WIA participants had earnings about $100 *below* those of the comparison group. Although not quite statistically significant, the difference measures suggest a downward bias in program impact estimates; estimates from a difference-in-difference model would produce program impact estimates that were $100 greater. For males in the seven high-training states, earnings of program participants are $230 lower—again a difference that is not statistically significant. It is therefore clear that if selection is causing spurious positive impact estimates, selection is unlikely to be based on stable individual characteristics.

One alternative explanation would be that there are transient differences between WIA participants and others. The comparison group members receiving unemployment compensation may include a substantial portion of individuals who are not seeking employment. UI recipients classified as awaiting recall are not required to search for employment, and many others may have little interest in getting a job—despite formal requirements—until benefits are about to expire. According to this view, those obtaining UI benefits are in a phase where their short-term employment levels are expected to be depressed, reflecting the incentives created by UI benefits, which are contingent on remaining unemployed. WIA participants, in contrast, have chosen to select into a program with the purpose of improving their employment prospects.

If the bias is due to benefits provided by UI, it might be expected that such differences would be less important for the other comparison group, those seeking ES services. Although most UI claimants are required to register for ES services, those awaiting recall are exempt from this requirement, so the ES sample removes one group whose interest in employment may be modest. Since any individual seeking support for employment search can obtain ES services, this sample includes self-motivated job searchers.

We estimated Adult program impacts on earnings and employment for the three states where ES recipients form the comparison group. The most notable difference between these results and the full sample of states was that impacts in the first few quarters after entry were smaller, in the range of $200 for both men and women. There was a fairly steady growth in program impact up through the last quarters. These results

support the view that the large impacts on earnings and employment in the quarters immediately after WIA entry could be at least partly due to differences between WIA participants and the UI claimant comparison group rather than to the effects of program participation. Of the nine states for which UI claimants are the comparison group, initial program impact in only two of them is as small as for the three states where ES is the comparison group.

We also undertook analyses that limited the treated group to those receiving UI benefits when they entered the WIA program. In these analyses, estimated effects were much smaller. Estimates were negative in the first 3–7 quarters after program entry, with quarterly estimates of impact after 10 quarters in the range of $200. Adult program participants who receive UI benefits at the point of entry account for less than 10 percent of entries during the period of our study. Although this is an important group, impacts in this group need not be representative of others in the program. These results suggest that impacts for Adult WIA participants receiving UI benefits are substantially smaller than for the full population of participants. In the discussion below of the Dislocated Worker program, we present evidence suggesting that the average impact in that program may be smaller than for the Adult program. This supports the view that the benefits of WIA for those who lose a "good" job may be smaller than for workers with generally poor work histories.

Impacts of Training

The heart of WIA services is the basic and vocational skills training provided to individuals. Although a variety of training opportunities are widely available outside of WIA, for many WIA Adult participants, the alternatives available are more costly. It is clear that acceptance into WIA alters the type and extent of training these individuals ultimately obtain.

Figures 13.3 and 13.4 present impact estimates of training based on analyses where the comparison group is Adult WIA participants not receiving training. Earnings impact estimates for females imply a $200 decrement in the first quarter after program entry, as would be expected if time in training limited initial employment options. Earnings catch up three or four quarters later, with a positive increment over $800 by the end of 10 quarters, implying an earnings increment of about 30 percent.

Figure 13.3 Adult Program Treatment Effect on Quarterly Earnings for Females, WIA Training versus Comparison Group
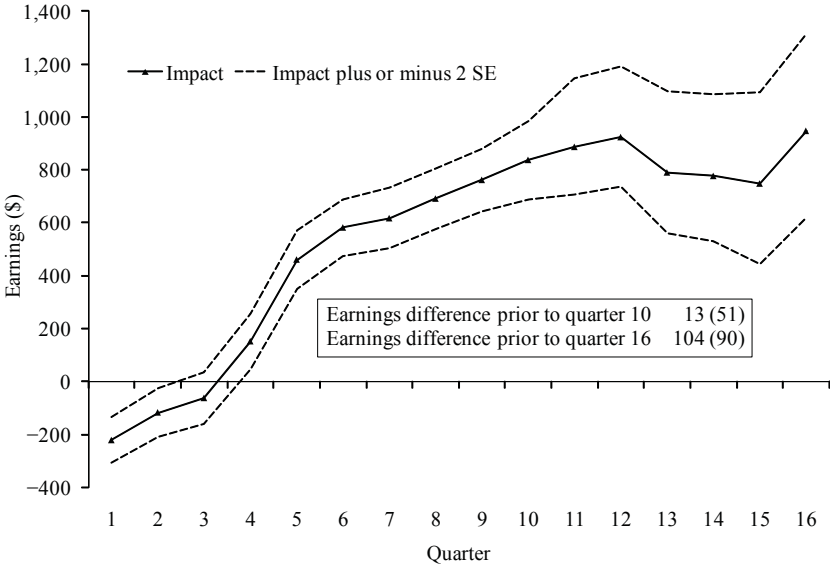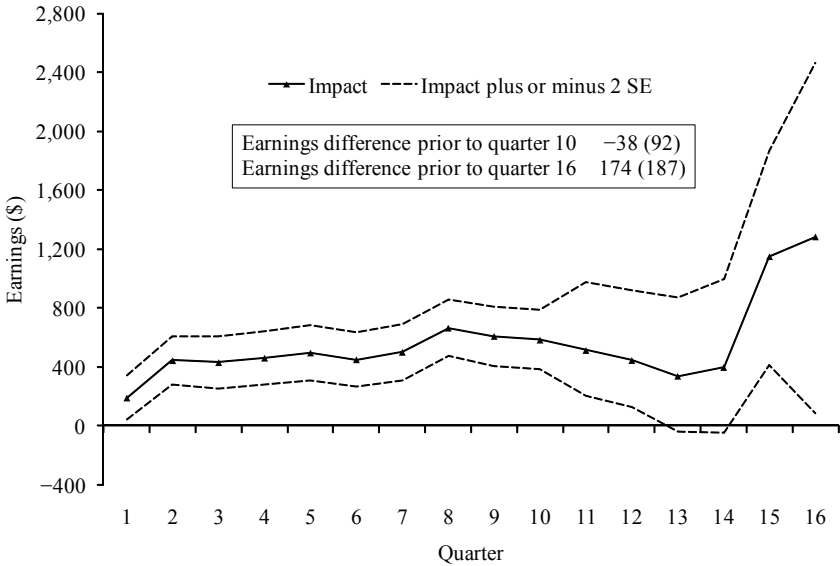
Earnings difference prior to quarter 10   13 (51)
Earnings difference prior to quarter 16   104 (90)

Figure 13.4 Adult Program Treatment Effect on Quarterly Earnings for Males, WIA Training versus Comparison Group

Earnings difference prior to quarter 10   −38 (92)
Earnings difference prior to quarter 16   174 (187)

In contrast, males who receive training appear to experience positive initial impacts—in the range of $200 immediately after entry—with the increment remaining in the $500–$600 range, 10–20 percent of earnings for the next 10 quarters.[14]

The pattern for employment impacts is very similar. For women, initial employment is about five percentage points lower for those receiving training, and only catches up 4 quarters after entry. By the 10th quarter, the increment is in favor of training recipients by about 5 percentage points. For men, the increment is close to zero for 6 or 7 quarters after program entry, and the ultimate increment is slightly smaller than for women, in the range of three to four percentage points. The pattern of results does not vary substantially by whether states train a large share of their participants, nor are results substantially different for ES states.

Differences in patterns for men and women may partly reflect the types of training they receive. A study of exits for program year 2005 finds that, of males exiting from the WIA Adult program, 37 percent received on-the-job training, in contrast to 15 percent for females (Social Policy Research Associates 2007). Classroom training would be expected to reduce initial earnings and employment by more than on-the-job training and possibly provide greater earnings with a delay. In our sample of Adult program participants who obtain training, women average more than three months longer than men between entry and exit, consistent with the view that women are obtaining more intensive training.

A word of caution is in order in interpreting the impacts of training. One-third of women and nearly half of men receiving training were omitted from the analysis because it was not possible to match them with Adult program participants who did not receive training. There is no certainty that estimates of impact reported here apply for omitted individuals.

Summary of WIA Adult Program Impacts

Taken at face value, the results reported above imply large and immediate impacts on earnings and employment for individuals who participate in the WIA Adult program. Those who obtained training services have lower initial earnings, but they catch up to other WIA

participants within ten quarters, ultimately registering large gains. Although there is evidence that estimates of effects in initial quarters following program entry may be biased, we do not believe a selection story can be constructed to explain away estimated effects for later quarters. In particular, growth in earnings for those receiving training would appear to reflect growth that has been widely observed in related programs.[15]

RESULTS OF IMPACT ESTIMATION FOR DISLOCATED WORKER PROGRAM

Figures 13.5 and 13.6 graph estimated program impacts on quarterly earnings for participants in all 12 states in the Dislocated Worker program. Participant earnings in the quarter following entry are about $200 below the comparison group, but relative earnings show an increasing trend over the 16 quarters of follow-up analysis. In the fifth or sixth quarter after program entry, participant earnings are equal to those of the comparison group. Ultimately, earnings grow to exceed those of comparison group workers by up to $400 per quarter. Despite the similarity in basic pattern, male earnings peak at around 10 quarters, whereas female earnings appear to grow until the end of the four-year window.

In separate analyses, we find that women's employment is initially approximately two percentage points below the comparison group, catches up within about three quarters, and is ultimately nearly eight percentage points above the comparison group. In contrast, for men, there is no initial employment difference, although the growth over time is smaller, with the positive increment after three years peaking at about six percentage points.

Dislocated Worker program participants are usually relatively high-wage individuals who are faced with permanent job loss. The initial negative impact estimates imply that their earnings are below unemployed workers with similar prior incomes and work histories. This is what would be expected if involvement in training activities precludes or reduces employment, inducing lock-in effects. Earnings growth observed over the three following years is consistent with the attainment of skills with training.

Figure 13.5 Dislocated Worker Program Treatment Effect on Quarterly Earnings for Females, WIA versus Comparison Group
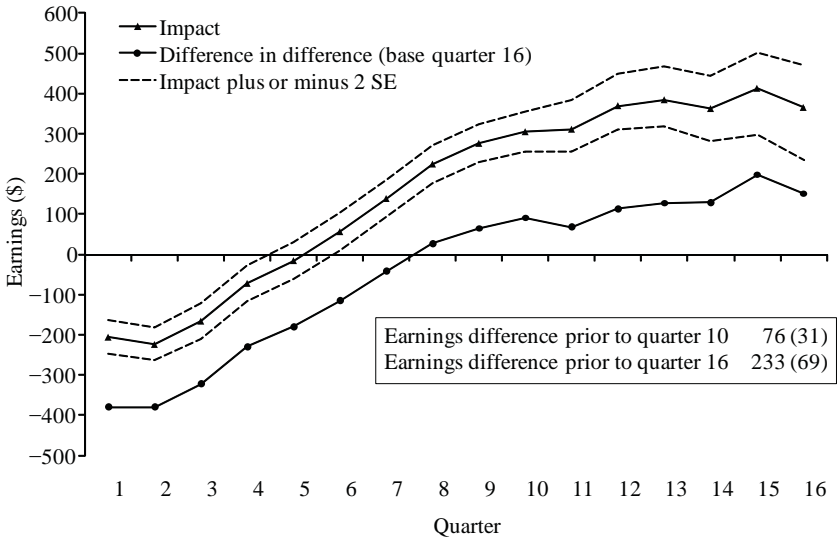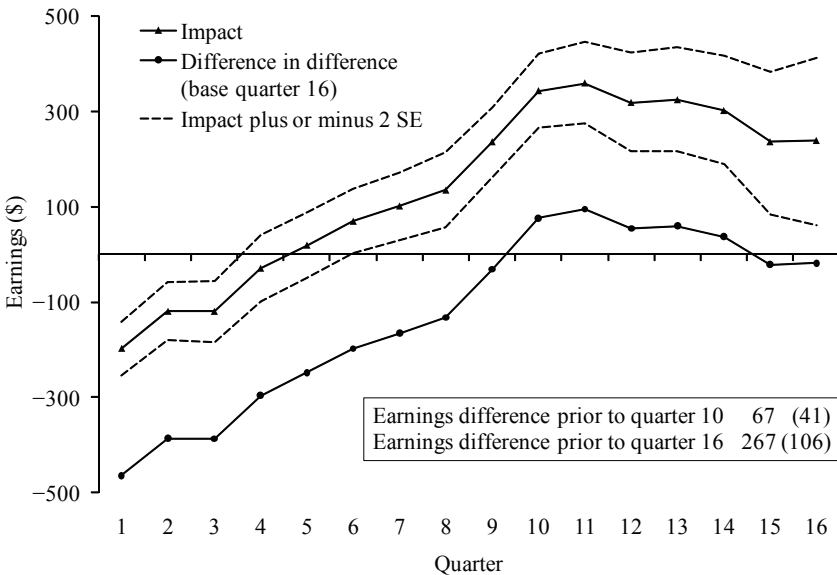

Earnings difference prior to quarter 10   76 (31)
Earnings difference prior to quarter 16   233 (69)

Figure 13.6 Dislocated Worker Program Treatment Effect on Quarterly Earnings for Males, WIA versus Comparison Group

Earnings difference prior to quarter 10   67   (41)
Earnings difference prior to quarter 16   267 (106)

Such an interpretation is based on the assumption that dislocated workers are similar in unmeasured ways to the comparison group. Our specification test, based on predicting prior earnings, suggests this is not the case. The inserts in Figures 13.5 and 13.6 show that there are substantial differences between the participant and comparison groups 16 quarters earlier, with participant earnings more than $200 higher, and standard errors implying that these estimates are statistically significant. Prior employment levels are also several percentage points higher for program participants. That participants have higher prior earnings suggests the possibility that their higher earnings in later periods may not reflect program impact but rather unmeasured factors that become apparent in the three years after program entry.

Some indication of the possible extent of the bias is provided by difference-in-difference estimates that subtract the prior quarter 16 increment. These estimates are provided in Figures 13.5 and 13.6. As discussed above, this estimator provides a valid estimate of program impact if selection into the program is on the basis of stable characteristics that are not captured by variables that have been controlled. The difference-in-difference estimates imply that participants' earnings catch up to those of nonparticipants with a longer delay and that the ultimate impact on earnings is more modest. For women, earnings exceed those of nonparticipants only after eight quarters, and the positive increment is never over $200. These estimates imply that earnings are increased by between 2 and 5 percent. For men, the crossover point is between 9 and 10 quarters, and the increment is generally less than $100, increasing earnings by less than 2 percent.

Nearly a third of WIA Dislocated Worker participants in our sample were receiving UI benefits when they entered the program. Focusing on this subgroup—with both program participants and the comparison group limited to individuals receiving UI benefits in the nine states with the UI comparison group—allows us to control for possible incentive effects of UI receipt. Given that the Dislocated Worker program is largely targeted at individuals who have lost jobs, this subsample is quite similar to others in the program.

The results of this analysis show that the earnings of WIA participants receiving UI benefits do not catch up until 7 or 8 quarters after program entry. The initial negative effect is in the range of $700 for both men and women, and the maximum positive impact is also lower

than the simple estimates reported in Figures 13.5 and 13.6, at about $200 for each, implying an average earnings increment of only 2–4 percent. As in the estimates reported above, the specification tests imply that program participants have higher prior earnings than matched comparison group members, so even these modest positive impacts may be spurious.

Impacts of Training

The incremental impact of training is based on a comparison of WIA Dislocated Worker participants who obtain training with those who do not. Initial earnings for those obtaining training are below those of other program participants for 8 quarters for women and for more than 10 quarters for men. Differences are $1,100 for females in quarters 2–4, implying a reduction in earnings of about a third, and $800 for males or about 20 percent of earnings. After quarter 10, earnings of those receiving training catch up with others, but they do not overtake them. Although the initial negative impact estimate is easily statistically significant, the confidence interval is large relative to estimated impacts after quarter 10. Confidence intervals include both –$200 and $200.

Of concern is the difference in earnings prior to entry into the program. For females, the individuals who select into training have lower earnings relative to other WIA participants in the sixteenth quarter prior to participation, suggesting that estimates of effects could be downwardly biased. This difference is not, however, statistically significant, so evidence of selection is inconclusive. Estimates for states offering high proportions of training are not substantively different. The pattern is similar when employment is taken as the dependent variable.

Taken at face value, point estimates suggest that WIA Dislocated Worker program participants who enter training experience large earnings losses relative to others in their first two years after program entry. Although consistent with a large training lock-in effect, these effects could be at least partly due to selection on short-term employment prospects, with those who land jobs leaving the program without obtaining training. Estimates of effects on earnings and employment three to four years after program entry—more than 18 months after program exit for most participants—show little evidence that training produces substantial benefits. These negative conclusions must be tempered, however,

by the recognition that sampling error alone could obscure substantial impacts. It should also be noted that 28 percent of women receiving training were omitted from the analysis because no matching comparison case could be found; the analogous figure for men is 38 percent. Hence, the results may not be representative of the full population of those receiving training.

Summary of WIA Dislocated Worker Program Impacts

Dislocated workers are likely to face serious difficulties in obtaining reemployment, and the kinds of services WIA offers may require time to produce impacts. The pattern of results is consistent with these expectations. However, the extent of any benefits that accrue from participation is particularly hard to judge. Some specification tests suggest that our base results may be biased toward finding positive program impacts. Difference-in-difference estimates are smaller than the primary reported estimates. These estimates imply that program participants' earnings do not reach the level of earnings of comparable nonparticipants until more than two years after participation. Perhaps more important, the growth in earnings, relative to nonparticipants, slows at that point. As a result, these estimates imply that the gains from participation are very modest, even three to four years after entry.

Where employment is taken as the outcome of interest, estimates of program impact are more supportive of the program. Although the specification tests again suggest that there are unmeasured differences between the treated and matched comparison group, the difference-in-difference estimates of the program suggest at least a moderate positive impact.[16]

CONCLUSIONS AND IMPLICATIONS

The estimates of WIA program impact presented here are based on administrative data from 12 states, covering approximately 160,000 WIA participants and nearly 3 million comparison group members. Our focus on estimates that represent the average program impact across all states reduces sampling error substantially and averages across

state-specific idiosyncratic variation. Table 13.1 presents information summarizing the implications of our findings. For each WIA program, we present annual earnings gains and the quarterly employment increment based on quarters 11–16. By focusing on these quarters, this measure captures the expected long-term benefits of training. If this measure is substantial, and the increment in earnings continues for even a few years, we argue below that the program will easily satisfy a benefit-cost standard.

Our best approximation of the WIA Adult program's impact is based on the estimates underlying Figures 13.1 and 13.2. We see that the average increment in annual earnings for women is nearly $2,400 per year, or 26 percent of average earnings for these women, and the increment for men is about $1,700, or 15 percent of average earnings. In a given quarter, program participation increases employment for women by about seven percentage points, and for men by about six percentage points. Since levels of employment are at base levels of 50–60 percent, this amounts to more than a 10 percent increase.

In the case of the Dislocated Worker program, we do not believe that the simple estimates are valid indicators of program impact because our specification tests suggest that participants are advantaged relative to the comparison group. In the face of this difference, Table 13.1 presents estimates based on a difference-in-difference structure. Increments in

Table 13.1 Summary Estimates of Program Impacts, Quarters 11–16

	Annualized earnings		Employment	
Program impact	$	%	Increment	%
Adult program				
Females	2,363*	26	0.067*	12
Males	1,676*	15	0.062*	12
Dislocated Worker program (difference-in-difference estimate)				
Females	523	3	0.051*	8
Males	138	1	0.041*	7

NOTE: *statistically significant at the 0.05 level. Annualized earnings impact estimates are based on quarters 11–16, with quarterly averages multiplied by 4. Employment refers to nonzero earnings in the quarter, with estimates averaged over quarters 11–16.

annual earnings are much smaller than for the Adult program, just over $500 for women, and less than $150 for men. Given that average earnings are appreciably higher for this group, these gains amount to less than 3 percent of earnings. Difference-in-difference estimates for the impact on employment imply four-to-five percentage point increments or about a 7–8 percent increase in employment proportions.

Do the net benefits we find satisfy a benefit-cost test? The costs associated with WIA participation are not available, nor are there accurate average costs for those entering the programs over a particular period, either for states or for the nation as a whole. However, it is possible to get some ballpark cost estimates. Published figures suggest that per capita direct costs of the Adult program (including ITA costs) aggregated for our 12 states are in the range of $2,400–$2,700 and Dislocated Worker costs are in the range $2,800–$3,200.[17] Because WIA provides some services that would be obtained elsewhere, it reduces expenses—either by the participant or others—that would otherwise be incurred, which tends to make social costs smaller than actual incurred costs. In their benefit-cost analyses of the JTPA program, Orr et al. (1996, pp. 97, 189, 269) estimate that such substitution is of importance, so social costs are less than half as large as the costs incurred due to the program. Some social costs, however, are omitted from our direct cost measures. When individuals receive certain WIA services, they may draw on other subsidies, such as when participants receive training at publicly subsidized community colleges. Orr et al. include such subsidies in the costs they use in their analysis, whereas the costs we cite above do not. Hence, our cost measures are subject to biases in both directions, and it would not be surprising if actual social costs differed by 30 or 40 percent.

Even given this uncertainty, the Adult program clearly satisfies a benefit-cost standard for both men and women if the earnings impacts continue for a period of just two or three years, which seems plausible. In contrast, using our best estimate of the impact on earnings for the Dislocated Worker program, in order for benefits for women to exceed costs, the improvement would need to be long lived, and estimated benefits for men could never cumulate to exceed costs at any reasonable interest rate. Estimates of employment impacts are, however, more supportive of the Dislocated Worker program. Judging the program in terms of its effects on the least successful workers, these are most likely

to be individuals unable to obtain employment. If the program succeeds in increasing the number of individuals with jobs, it may be argued that those in need are clearly the gainers. Such a view may justify a program that fails a benefit-cost standard.

There are important policy implications of these results that go beyond a simple judgment of whether the program is effective. Program administrators typically look at the cross-sectional or "point-in-time" information that is available to them from performance management systems on a regular basis. They do not have at hand the data analysis tools to examine individual employment and earnings histories and trajectories for more than eight years (33 quarters that include up to 16 quarters of follow-up data) for both program participants and a comparison group, as in this study. The results of this evaluation show that program impacts typically "mature" over time, sometimes increasing in magnitude and sometimes diminishing. Insofar as this work underscores the fact that long-term impacts are of significance and that outcomes of interest may not be apparent for years, this may help to refocus training activities in beneficial directions.

Appendix 13A

Table 13A.1 Summary Statistics for WIA Participants and Comparison Group in 12 States

	WIA Adult			WIA Dislocated Worker			Comparison group
	Overall	No training	Training	Overall	No training	Training	
Sample size							
Unique individuals	95,580	68,255	27,325	63,515	43,513	20,002	2,929,496
WIA entries, or quarters of comparison program participation	97,552	69,712	27,840	64,089	43,894	20,195	6,161,510
Demographic	Mean	Mean	Mean	Mean	Mean	Mean	Mean
Male	0.420	0.445	0.356	0.482	0.494	0.456	0.585
Black	0.445	0.512	0.277	0.330	0.391	0.198	0.171
Hispanic	0.031	0.014	0.072	0.022	0.013	0.043	0.064
Age	32.70	32.91	32.16	40.24	40.14	40.46	39.59
Years of education	12.27	12.21	12.43	12.55	12.52	12.63	12.42
Employment							
Employment-employment	0.297	0.294	0.307	0.462	0.465	0.456	0.476
Employment-not employed	0.208	0.195	0.241	0.281	0.256	0.335	0.279
Not employed-employed	0.325	0.336	0.297	0.183	0.199	0.149	0.225
Not employed-not employed	0.168	0.175	0.151	0.070	0.078	0.053	0.040
Earnings second year prior	8,507	8,203	9,306	19,402	17,782	23,487	20,156
Earnings in prior year	8,149	8,050	8,398	20,499	19,450	22,779	21,584
Earnings following year	9,426	9,128	10,171	11,527	11,840	10,845	15,649
Earnings second year after	10,846	9,916	13,175	14,572	14,213	15,352	17,102

Program experience							
WIA in prior two years	0.052	0.058	0.035	0.041	0.044	0.034	0.020
Comparison program participation in prior two years	0.211	0.178	0.297	0.409	0.353	0.551	0.668

Notes

1. Recovery Act funding may only be used for authorized WIA and Wagner-Peyser Act activities and cannot be used to replace state or local funding currently dedicated to workforce development and summer jobs.

2. Source: http://www.recovery.gov/Transparency/agency/reporting/agency_reporting3 .aspx?agency_code=16&dt=02/12/2010 (accessed February 22, 2010).

3. Social Policy Research Associates (2004) and Rockefeller Institute of Government (2004) undertook process evaluations based on the first three years that the program was implemented but undertook no systematic study of participant outcomes (Barnow and King [2004] provide a summary of the Rockefeller study). Hollenbeck et al. (2005) examined outcomes in seven states for WIA participants who had completed the program during the period July 2000–June 2002, the first two years of implementation in most states. Given that over a third of participants require more than a year to complete the program, this sample would have been severely censored.

4. Eligibility criteria can be found at http://www.doleta.gov/programs/general_info .cfm (accessed August 2009).

5. For a discussion of actual implementation, see the Social Policy Research Associates study of WIA implementation (2004, sections VI and VII), and the Rockefeller

Institute of Government (2004; Barnow and King 2004). This section draws primarily from these reports.

6. These figures are based on participants exiting the program April 2004–March 2005 (Social Policy Research Associates 2006).

7. The primary contractor on the project was IMPAQ International, LLC, whose staff contacted all states and entered into agreements with nine of them. Three states provided data through the Administrative Data Research and Evaluation Project under separate contracts with the Department of Labor.

8. Further details on the methods of analysis can be found in Heinrich et al. (2010), which provides a full report of the results of this study. Additional information is available in Heinrich, Mueser, and Troske (2008).

9. Movements into and out of the labor force and between employment and unemployment in the 18 months prior to program participation are strongly associated with both program participation and expected labor market outcomes (Heckman, LaLonde, and Smith 1999; Heckman and Smith 1999).

10. Where an individual entered the program more than once during a quarter, this was coded as a single entry.

11. Comparison group individuals may contribute more than one unit as potential matches if they had contact with the program in multiple quarters.

12. Smith and Todd (2005) spell out the basic approach, which they describe as "difference-in-difference" matching. See also Mueser, Troske, and Gorislavsky (2007).

13. These correspond to the 95.5 percent confidence interval.

14. The very high estimates in quarters 15 and 16 should be discounted given the large standard errors.

15. In addition to the analyses presented above, we estimated impacts separately for various subgroups, focusing on those that are overrepresented among WIA participants or who face special challenges or barriers to working in the labor market, to wit, nonwhites, Hispanics, those under 26 years of age, those 50 or older, and veterans (males only). For the most part, estimated effects for these subgroups were similar to those for all WIA participants; there is no evidence of substantial differences in impact between these subgroups. Sampling error for many of these groups is large, however, implying modest statistical power of tests for subgroup differences.

16. In addition to analyses based on the full population of Dislocated Worker program participants, we estimated impacts separately for nonwhites, Hispanics, individuals under 26 years of age, those 50 or older, and male veterans. We found no evidence of important differences in program impacts for any of these subgroups. As in the case of subgroup analysis for the Adult program, sampling error is substantial, and there may be differences that are not statistically discernable.

17. These figures are based on taking total expenditures in the indicated programs for July 2003–June 2005 as detailed in USDOL/ETA (2009) divided by the number of reported exits during this period, or divided by the number of entries identified in our data. In the steady state, either of these correctly captures cost per participant.

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