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Profiling for Public Workforce Investment Programs in the United States

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Profiling for Public Workforce Investment Programs in the United States

prepared by

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1. Introduction¹

Evaluations of a wide range of active labor market programs across a variety of countries have produced three essential findings: 1) job search assistance programs are the most cost-effective, 2) large scale public service employment programs are the least effective and most costly, and 3) job training programs and employment subsidies fall somewhere in between, with the degree of cost-effectiveness dependent on proper targeting of assistance (Schwanse 2001, p. 22). A sizeable share of the research supporting these conclusions was undertaken in the United States (Martin and Grubb 2001). However, evidence from evaluations in Europe are consistent with American studies, suggesting a broad applicability of lessons learned (Heckman, LaLonde and Smith 1999, p. 1868).

The direction of American employment policy was changed by Workforce Investment Act (WIA) of 1998. WIA reduced eligibility requirements for program participation, changed administrative relations among service delivery agencies, and refocused systems for performance accountability. Taken together these changes increased the volume of customers at local employment centers, required frontline service delivery staff to perform a multitude of new functions, and induced management to place an even greater emphasis on operational efficiency and program effectiveness. With limited resources supporting referrals to services, workforce development agencies have been forced to seek the greatest return for public investments in employment and training programs.

The public employment service (PES) in the United States offers universal access to services funded by the Wagner-Peyser Act of 1933. Efficiency is also key for the PES since funding has been fixed in nominal terms at an annual level of about \$800 million for the last several years. With inflation, this means a funding decline in real terms, resulting in reduced staffing to serve a steady demand for services with added cyclical responsibilities mirroring business declines.

As a result, a premium is placed on serving customers effectively and efficiently for both WIA and PES programs. Consequently frontline staff could benefit greatly from tools which help to quickly identify customers for whom the additional benefit of particular services would be greatest. The administrative process by which individuals are selected to participate in programs may be referred to as “profiling.”

Profiling can be thought of as a selection and allocation process in which a limited number of participants are selected from a broader pool of eligible customers. This selection process takes place in an environment in which receipt of services is not an entitlement, and where the number of potential program participants greatly exceeds the resource capacity. Employment services profiling can be done in either a formal or informal way. Profiling is

¹ This section is adapted from Wandner (2002) and O’Leary (2004).

either explicit or implicit. Whenever selection and allocation decisions are made, profiling is being done.

Traditionally, the process of selecting clients for program participation has been done informally, that is, without the aid of structured statistical models. Informal profiling can take many forms. Procedures followed at the local level depend on budget and administrative conditions, as well as the information and assessment tools available to frontline workers in the workforce development system. The result may be a first come, first served approach. It may be done by the purchase of blocks of services, and then finding customers to fill the available slots. Or it may be done by an active outreach process, such as the use of rapid response teams that serve future dislocated workers before layoffs occur for large publicly known enterprises. In most cases informal profiling is not systematic and uses little or no objective data to make program referral decisions. Informal profiling is frequently time sensitive, seasonal, and driven by funding cycles.

Formal profiling involves having frontline staff in employment centers using profiling tools which are based on previously analyzed patterns of service receipt and reemployment success. Such statistics-based tools can provide frontline workers a guide to help make service referral decisions lead to better labor market outcomes. Profiling, using statistical profiling methods, has been adopted by a number of industrialized nations and recognized as an approach with broad application to workforce development programs:

Evidence on the effectiveness of active labor market policies . . . suggests that they should be well targeted to the needs of individual job seekers and the labor market, and that treatment should start as early as possible in the unemployment spell. But offering individual treatment along with early intervention would be very costly. There is thus a premium on accurately identifying job seekers at risk.

The early identification of job seekers at risk of becoming long-term unemployed is a longstanding and basic endeavor of the public employment services (PES). Indeed, good judgement in this area forms part of the professional competence and work experience of PES staff. However, a few countries have gone further by introducing more formal methods of identifying at-risk job seekers and laying out procedures on what to do with them. This is usually referred to as profiling and is used in this paper to cover the approach of a) the identification of individuals at risk of long-term unemployment; b) the referral to various active labor market programmes. (OECD 1998)

Such programs began in the English speaking countries, with implementation on a nation-wide basis in the United States and Australia and considerable development attention in Canada. More recently there has been broader interest, with 12 countries reporting on a variety of profiling programs and projects at a conference of European countries and Australia. (Rudolf and Konle-Seidl 2005)

In the U.S., the need for profiling is greater under WIA than under the predecessor Job Training Partnership Act (JTPA) program. Customers tend to flow from less intensive services to more intensive services. These services are classified by the level of resources used into three categories: Core, Intensive, and Training Services. In the US both the PES and the WIA programs provide core and intensive services, while only WIA provides training services. Profiling could be useful to help determine which users of core services also may benefit from intensive services. A refined profiling tool could also help select which among the intensive services could most help the client, or whether training is appropriate.

Core services include eligibility determination, outreach, intake and orientation, initial assessment, job search assistance and placement assistance, and provision of information relating to labor market conditions, program performance, supportive and follow up services, and the availability of unemployment insurance (UI), and welfare-to-work (WtW) programs. Core services may be accessed on a self-serve basis, but frequently require staff assistance. Intensive reemployment services universally require staff assistance and include: individual and group counseling, expanded job search workshops, service coordination assistance, and development of customer service plans. Training may be either in occupational job skills, job search skills, remedial reading and mathematics, or on-the-job training.

Consideration of profiling in the U.S. also takes into consideration the need to prepare for more adverse economic conditions when the need for employment services increases. In future periods of recession, statistical profiling methods will be particularly useful. While these methods are operate at all times as a selection process of choosing the right services for the right people, the resource allocation issue becomes more severe during recessions. These statistical tools can be adjusted in their application over the business cycle as resources become relatively more limited in recessions and choice must be made among a much larger pool of potential customers.

This paper reviews U.S. experience with profiling in a variety of employment services contexts. Some of the examples involve actual program experience, others are based only on research of program options which have been considered by policy makers. Formal profiling programs in the U.S. have mainly been directed toward dislocated workers who are UI beneficiaries. We consider targeting in the following contexts: job search assistance, reemployment bonuses, self-employment assistance, job training, welfare-to-work, a front line decision support system, and personal reemployment accounts.

2. Job Search Assistance²

The estimated effects of job interview referrals in the absence of profiling are summarized in Table 1. Johnson et al. (1983), in the first national evaluation of the PES in the United States found that job referrals are most effective for women, but are also effective for men over 45 years of age and men in urban areas—providing evidence for delivering job placement services to middle-aged, dislocated workers (Johnson et al. 1983; Johnson, Dickinson, and West 1985).

A 1983 random assignment field experiment in South Carolina evaluated procedures intended to improve the UI work test and enhance ES practices. The three treatments tested successively larger bundles of services. Claimants assigned to the control group were given the customary work test, which involved informing claimants that ES registration was required but involved no systematic monitoring of this requirement. The three treatments in Charleston were: a) strengthened work test requiring that an ES registration, and suspension of UI payments for failure to register, b) strengthened work test plus a personal placement interview within one week of the first UI check, c) strengthened work test, enhanced placement services, plus job search workshops: a three hour JSW, and after four weeks of UI benefits a JSW on labor market information.

The strengthened work test in South Carolina had the greatest impact. It alone shortened the duration of compensated joblessness by more than half a week. The addition of enhanced placement services resulted in an impact estimate of -0.61 weeks or an insignificant increase over the strengthened work test alone. The impact estimate for the third treatment, which added JSWs, was -0.76 weeks of UI benefits, a modest incremental effect over either of the other treatments. Impacts were concentrated among men who averaged impacts of greater than -1.0 weeks for all treatments, and among workers in the construction industry, who had impacts of over -4.0 weeks. The relatively low cost of treatments resulted in jaw dropping benefit cost ratios in excess of 4. That is, more than four dollars in UI benefit payments were saved for every dollar spent on the work test, JSA and JSW services. The third treatment, which involved the largest number of components, had an average cost of only \$17.58 in 1983 dollars.

A field experiment in Tacoma, Washington, reported on by Johnson and Klepinger (1991, 1994), found that eliminating both continued-claim filing and the work test leads to dramatically longer spells of compensated joblessness—providing further examples of the importance of UI and PES cooperation in requiring and monitoring job search activity (Johnson and Klepinger 1991, 1994). This study also evaluated JSA and found shorter unemployment durations for those referred to JSA. However, because in most cases UI benefit receipt ended just before JSA was scheduled, the authors speculated that the shorter durations resulted from an effort to avoid the hassle of JSA rather than as a result of the valuable content of JSA services.

² Sections 2.1 through 2.3 are adapted from O’Leary (2004 and 2006). Section 2.4 is adapted from Wandner (2005).

In the United Kingdom (UK), UI is administered by their PES and has a uniform initial entitlement duration of 12 months. In 1987, a new program called Restart was introduced nationally. Under Restart, UI beneficiaries nearing six continuous months of benefit receipt were called in for an appointment at their local PES office and were provided with an intensive package of JSA. An evaluation by Dolton and O’Neill (1996) of the UK Restart program estimated short-term effects similar to those observed by Johnson and Klepinger (1994) in the Tacoma alternative work-search experiment. Both evaluations suggested that there was a modest shortening in the duration of compensated unemployment, and that the invitation for intensive JSA acted more as a prod than as a support for reemployment.

Dolton and O’Neill (2002) conducted a subsequent random assignment field experiment, wherein the treatment group received the standard Restart services when nearing six continuous months of claiming UI, while the randomly selected control group was given the UK’s Restart services when approaching 12 continuous months of receiving UI benefits. They found evidence that over the short term required JSA prodded both groups of UI beneficiaries to go back to work, but that over a longer five year term the group getting JSA support earlier in their jobless spell had measurably higher earnings - a finding that JSA can have valuable content for job seekers.

Evidence from evaluations in Maryland, Washington, DC, and Florida suggested that standardized UI eligibility reviews and JSA are relatively inexpensive to administer and can have a significant effect on reducing periods of compensated joblessness. They therefore tend to be cost-effective interventions, a result that supports WPRS and state-adopted ERPs (Klepinger et al. 1998; Johnson and Klepinger 1991; Decker et al. 2000).³

Results from studies of targeted job search assistance are summarized in Table 2. Evidence from the New Jersey UI Reemployment Experiment indicates that JSA targeted to dislocated workers at risk of long-term unemployment can be a cost-effective intervention and that the treatment can be very simple and structured; these results led directly to WPRS implementation (Corson et al. 1989). Statistical profiling of JSA to those at risk of long-term joblessness was tested in the District of Columbia and Florida through field experiments and offered further support for the cost-effectiveness of targeted JSA (Decker et al. 2000).

³ In an interstate study of UI reciprocity, Vroman and Woodbury (2004, endnote 4) find that states with established ERP programs have shorter durations of compensated employment. On the technical support website linked to the U.S. Department of Labor’s ETA website (www.doleta.gov) under the heading of “best practices,” links are provided to descriptions of ERP programs in four states - Florida, Michigan, Tennessee, and West Virginia. Several other states also operate ERP programs <http://www.itsc.state.md.us/best_practices/eligibility_review_program.html> Accessed December 13, 2004.

In November 1993, the United States Congress enacted legislation which included provisions requiring each state to implement its own permanent Worker Profiling and Reemployment Services (WPRS) system. These systems identify likely dislocated UI claimants using statistical models and provide them with job search assistance during the early weeks of their unemployment. Because these UI claimants are called into the local offices of state workforce agencies, individuals reporting are more likely to be subject to the UI work test and receive public labor exchange services, as well as other reemployment services. By law, a WPRS system must identify which claimants are likely to exhaust their regular UI entitlement and will need job search assistance services to make a successful transition to new employment. WPRS was operational in all states by early 1995. There is now nearly ten years of experience with the operation of a national program.

The WPRS initiative was based on a large body of experimental research conducted by the states and the federal government (USDOL 1995, Meyer 1995). Some of this research has also been summarized in sections 2.1, 2.2, and 2.3 relating to reemployment services and the UI work test that are received by participants in the WPRS system. That research suggests WPRS systems can be an effective and efficient way to speed dislocated workers back to productive employment. The U.S. Department of Labor (USDOL) worked with a number of states to conduct a national evaluation of WPRS with the goal of suggesting ways to improve the system (Dickinson, Kreutzer, and Decker 1997).

Implementation of WPRS systems in every state represented a large effort by the U.S. workforce development community, especially the UI, Wagner-Peyser, and Economic Dislocation and Worker Adjustment Assistance (EDWAA) - now the WIA Dislocated Worker - programs. Implementation required the establishment of operational linkages between employment and training programs at the state and local levels of government. It also required cooperation between local, state and federal government entities. The WPRS initiative has been making referrals to reemployment services at an annual rate of about 800,000 to 1.2 million workers per year nationwide (See Table 3). This referral level represents roughly one-third to one-half of the over two million American workers who become dislocated each year.

WPRS profiling is a two-step process to identify permanently separated workers with reemployment difficulty. First, permanently separated workers are identified by screening out two groups of workers: those subject to recall and/or those subject to union hiring hall agreements.⁴ These workers must also be UI-eligible as demonstrated by the requirement that they receive a UI first benefit payment. Second, the likelihood of UI benefit exhaustion is predicted using a statistical model.

⁴The WPRS system is designed to provide reemployment services to permanently separated workers who are likely to be unemployed for long periods in their search for new jobs. Workers who find their jobs exclusively through union hiring halls, e.g., longshoremens, are considered to be job attached and not searching for new jobs; they are waiting to return to their old jobs. They are not eligible to participate in WPRS reemployment services.

For most states the profiling referral model was developed using logit regression analysis applied to historical data available from state administrative records. The dependent variable in the model is usually a binary variable (i.e., a zero or a one, depicting whether or not the worker exhausted all entitlement to UI benefits).⁵ The profiling model estimates a probability of UI benefit exhaustion for individuals based on their individual characteristics and current labor market conditions. These variables include education, job tenure, change in employment in previous industry, change in employment in previous occupation, and local unemployment rate.

Because of U.S. federal civil rights legislation, the states are prohibited from using certain variables as part of their profiling mechanisms; they include age, race/ethnic group and gender. An analysis comparing results when including and omitting these variables indicated that the effect of this omission on the predictive power of the profiling model is generally very small.

For each local workforce development office, UI claimants are ranked by their exhaustion probabilities—from high to low—to form the basis for referral to reemployment service providers. Staff members from the service provider work with referred customers to develop an individual service plan. There is a wide variation among states regarding the extent of services and the degree of individualization of each plan.

The WPRS evaluation interim report (Dickinson, Kreutzer, and Decker 1997) found that states were successful in implementing their profiling models, and the models successfully identified those UI claimants most likely to exhaust their UI benefits. States appear to be successfully determining service capacity for providing reemployment services.

The USDOL has recommended that the states provide a comprehensive and intensive set of reemployment services, but that all participants need not and probably should not receive the same set of services. Rather the focus should be on the development of an individual service plan for each referred worker--to meet the needs of the individual customer and to avoid an approach that would be “one size fits all” (Field Memorandum 35-94 in USDOL 1994a).

Reemployment services can be provided by a number of different organizations, but the usual provider in most states is the Wagner-Peyser agency. This choice is related to the history of workforce development programs. The ES and UI were created as two interdependent programs in the 1930s, and have been closely associated at state and local levels ever since.

In 1998, a Worker Profiling and Reemployment Services Policy Workgroup, consisting of state and federal representatives, was established by the USDOL. Based on the first three years of WPRS operation, the Workgroup made seven recommendations in their final report (Messenger, Schwartz, Wandner 1999): 1) states should update their profiling models regularly,

⁵Benefit exhaustion takes place when claimants draw their potential duration of regular benefits. Potential duration usually depends on prior earnings. The maximum potential duration is 26 weeks in all states except Massachusetts and Washington where it is 30 weeks.

2) states should profile all claimants who file an initial claim, 3) states should accelerate their profiling and referral process to ensure early intervention, 4) states should improve reemployment services provided to profiled and referred claimants, 5) program linkages should be improved between Wagner-Peyser Act, JTPA Title III and UI programs, 6) adequate funding should be devoted to providing more and better reemployment services through state WPRS systems, and 7) WPRS feedback and reporting systems should be improved.

For WPRS to be successful, a prime concern is that state and the federal governments devote more resources to reemployment services, since profiling, no matter how well implemented and targeted, cannot be effective unless substantial and effective reemployment services are provided to WPRS participants. The federal government responded in FY 1999 by providing \$5.2 million in funding for innovative approaches to providing reemployment services to dislocated workers collecting UI and served by the WPRS system.

When WPRS was enacted in 1993, the states were told to provide reemployment services to targeted workers within their existing budgets. The federal government required states to participate in the WPRS system, while providing no new funds for this initiative. For the states it was an “unfunded mandate.” As the system matured, there were proposals to provide additional funding for WPRS. Finally, funding was requested and the Congress provided Reemployment Service funds in the amount of \$35 million beginning in Fiscal Year FY 2001 (Balducci and Pasternak 2004, pp. 42-43; and Balducci, Johnson and Gritz 1997, p. 497). Funding in this amount continued through FY 2005. Funding terminated in June 2006 at the end of Program Year 2005. The Bush Administration did not request funding for either FY 2006 or 2007, and Congress’ appropriation for FY 2006 eliminated funds for this purpose.

The WPRS system gradually became operational in 1994 and 1995, but was not fully operational until mid-1996. The data in Table 3 shows that the great majority of individuals who receive first payments under the UI program are profiled, although the percentage has been declining over time. About 10 to 15 percent of the individuals profiled are referred to WPRS services. More individuals reported to services that were referred from 1996 through 2001, but this percentage has fallen to about 80 percent in recent years.

Most participants in the WPRS initially receive an orientation when they report to a local office; recently about 60 percent who report for services receive an orientation. Placement services are also highly prevalent, but they are declining in use from a high of 60 to 70 percent of those reporting to 30 to 40 percent more recently. Assessments have been provided to 35 to 45 percent of those reporting, and the percentage has been increasing, while counseling has been declining to 10 to 20 percent.

Among the most intensive services, the provision of job search workshops has increased recently but has remained between 25 to 45 percent of those reporting. Referrals to training have been declining steadily, from a high of 16 percent of referrals to WPRS down to about eight percent.

Overall, there has been a decline in the provision of more intensive services (counseling, job search workshops and referrals to training). The decline in training referrals could be related to funding availability or to changes in local policy. It should be recalled that the origins of WPRS stem from the success of the provision of assessment, counseling and an intensive JSW, while the WPRS system now provides these services to a minority of WPRS participants.

Recent evaluations of WPRS indicate shorter jobless durations for program participants (Dickinson et al. 1999). An evaluation of WPRS in Kentucky, applying an experimental design, found that WPRS shortens UI duration by more than two weeks (Black et al. 2003).

All studies evaluating the effectiveness of the PES interventions consistently report low costs per customer served by the public labor exchange. This fact is key to the cost-effectiveness of WIA core services and PES interventions. Even services resulting in a modest reduction in jobless durations show a significant return on public investment when costs are low. Interventions that improve linkages of UI beneficiaries to JSA have the potential to increase the efficiency of state workforce investment systems.

Program statistics for WPRS from 1994 to 2004 are reported in Table 3. The program was well received by local areas during the economic expansion of the late 1990s. As can be seen in Table 3, the number reporting for WPRS services exceeded the number referred by the profiling process. With excess capacity, volunteers were admitted. Peak participation occurred in the recession year 2001.

As labor market conditions change, statistical models for profiling and referral to services must be updated. In 2000 the U.S. Department of Labor (USDOL) issued significant improvement grants to a dozen states to update their statistical models for profiling (Corson and Needels 2003). The USDOL also commissioned a study to identify the best ways to simplify and improve statistical WPRS models (Black, Smith, Plesca, and Plourde 2003). Four items were identified to simplify models without reducing predictive performance: a) Use ordinary least squares (OLS) instead of logit, probit or tobit (quantal choice models), b) Define the dependent variable as the proportion of entitlement used, c) Drop the local labor market values of the unemployment rate and industry employment, and d) There is no need to have separate models for separate regions of the state-use dummies. Black, Smith, Plesca, and Plourde (2002) also suggest that WPRS models could be improved by: a) improving the data quality, by using UI administrative records which are maintained at a high standard, and b) adding covariates that contribute to the predictive power of the model.

The W.E. Upjohn Institute developed the original Michigan WPRS model in 1995 (Eberts and O'Leary 1996). The Institute developed a new WPRS model for Michigan in 2002 (Eberts and O'Leary 2003). We applied an OLS estimator with the proportion of entitlement used as the dependent variable (this became possible for Michigan only after the switch to using wage records as a basis for eligibility), and is a single state-wide model. The model we proposed did not include local labor market unemployment rate or employment growth variables, however

it did retain indicator variables (fixed effects) for local labor markets since they contributed to model predictive accuracy.

In 2003 the Institute also checked the performance the statistical WPRS profiling model for another state which had not been updated since 1996. The model predicted UI benefit exhaustion no better than random assignment. For profiling to remain effective targeting models must be regularly updated. A three year update schedule would be ideal while every five years would be adequate. States should consider partnerships with economic research groups in public universities or independent research institutes to do regular updates and monitor the performance of profiling systems. Such collaboration could be mutually beneficial.

3. Reemployment Bonuses

Four reemployment bonus experiments were operated in the U.S. between 1984 and 1990. They were conducted in Illinois, New Jersey, Pennsylvania, and Washington state. The last three projects were funded by USDOL, while the first was funded by the state of Illinois. Each experiment involved random assignment of UI claimants to treatment and control groups. The experiments each offered different levels of lump sum payments to workers who took new, full-time jobs within six to twelve weeks, and stayed employed for at least three to four months. These experiments were conducted to learn more about the behavioral response of UI recipients to UI program parameters. In particular they were tested as a positive incentive for speedy return to work. The idea of reemployment bonuses originated in Japan, where unemployed workers can receive a cash bonus for accepting a new job no more than once every three years.

The policy justification for reemployment bonuses is that UI claimants would be better off if they went back to work sooner at similar or better paying jobs than they would have taken in the absence of bonus offer. The government sector would be better off if the cost of the bonus is offset by a decrease in UI payments to unemployed workers and an increase in tax receipts during their longer period of employment.

All four reemployment bonus experiments had similar eligibility requirements for inclusion in treatment or control groups. The requirements were set to: assure that workers filed for or drew UI benefits; simplify administrative details; and select workers who had experienced some degree of work displacement. Program designs set the bonus amount; the period of time during which workers could qualify for the bonus; and the conditions under which they could receive the bonus.

The impacts of the four experiments on UI receipt are summarized in Table 4. The Pennsylvania and Washington data are regression-adjusted estimates from pooled sample. The reemployment bonus experiments generally found a significant decline in the receipt of benefits received in the benefit year. The results were largest in the Illinois experiment, at over one week.

The results for Pennsylvania and Washington were uneven but much smaller. The results showed that most generous bonuses -- high bonus/ long eligibility -- had the greatest impact, but the results are not consistent for the other treatments. These results are disappointing in that they do not show a graduated impact, increasing from low bonus to high, and the size of the impact is smaller than for the Illinois experiment. The pooled data analysis confirms the smaller size of the new experiments, yielding an estimate of half a week, which is less than half the result from Illinois.

The New Jersey data are not comparable because of the presence of the offer of mandatory participation in job search assistance. Nonetheless, the combined impact of the offer of both JSA and the reemployment bonus is less than that for the reemployment bonus alone in Illinois during the first benefit year. (Corson et al. 1989) The New Jersey experiment, however, included a six-year follow-up study, and the total six-year result yielded an effect nearly double the first-year effect. It also exceeded the Illinois one-year impact. In the New Jersey experiment, both the job search assistance (JSA) only and the JSA plus reemployment bonus treatment had long-term effects on UI receipt indicating that these two treatments led to jobs that were more stable, and the reemployment bonus contributed to this stabilization⁶ (Corson and Haimson 1996).

The administration of the four U.S. reemployment bonus experiments did not use profiling methods. O'Leary, Decker, and Wandner (2005) applied worker profiling models to the Pennsylvania and Washington state reemployment bonus experiments. Both the treatment and the control groups were profiled using models similar to those that those states were using for their WPRS systems in the late 1990s. Using these models to target reemployment bonus offers to those claimants most likely to exhaust UI was found to increase the cost effectiveness of bonus offers by yielding larger reductions in UI benefit payments than non-targeted bonus offers. (See Table 5.) However, estimated average benefit payments did not decline steadily as the eligibility screen was gradually tightened. The single treatment design that is most promising for a targeted reemployment bonus is a low bonus amount with a long qualification period and a four month reemployment qualification period, targeted to the half of UI claimants most likely to exhaust their benefit entitlement. These estimates suggested that such a targeted bonus offer would yield appreciable net benefits to the UI trust fund if implemented as a permanent part of the UI program.

⁶ The New Jersey results revealed that the reemployment bonus had a significant effect on the long-term stabilization of employment. Both the job search assistance (JSA) only treatment and the JSA plus reemployment bonus (RB) treatments had long term impacts on UI weeks paid, although the impact of the JSA plus RB was greater. For JSA only, there were significant impacts in the first and second year, but not for the entire six-year period. For the JSA plus RB treatment, there was a significant effect for the entire period, as well as for each of the first two years.

A number of lessons have been learned from the bonus experiments. As predicted by job search theory, cash bonuses have a significant impact on job search behavior and lead to reduction in the average duration of unemployment, resulting in a desirable speeding of reemployment. Larger bonuses also had the largest impact on unemployment durations. As expected from the empirical literature on UI work disincentives, the bonuses had no effect on wages, indicating no decline in the quality of jobs taken in response to the offer of reemployment bonuses. There is also no evidence that the bonuses had any effect on worker attachment to their previous employer, as they had no effect on workers subject to recall. On the other hand, because unemployment durations did not directly relate to the dollar level of the bonus offer, there was not continuously increasing response. The initial findings left uncertainty about the design of an optimum bonus offer. None of the options tested were found to be cost effective for either the general UI claimant population, or for claimants similar to dislocated workers. Finally, using profiling to target reemployment bonus offers could improve profiling and yield net benefits to the UI Trust Fund.

4. Self-Employment Assistance

The United States implemented two classical experiments that provided self-employment assistance (SEA) between 1990 and 1993. The impetus for the experiments was the existence of SEA programs in a number of other industrialized nations. The experiments were designed after observing the SEA programs then operating in France, Sweden and the United Kingdom during a study tour by the USDOL and interested states to these three nations. The two experiments were implemented in Massachusetts and Washington state. The Massachusetts experiment was modeled after the United Kingdom's program involving periodic payments, while the Washington state experiment followed the French approach of providing a lump sum grant. The description below is about the Massachusetts experiment, since it produced the more successful results and was the basis for a federal law enacted in 1993 as part of the North American Free Trade Act (NAFTA) which permitted state employment security agencies to establish SEA programs as part of their UI systems.

The Massachusetts experiment was targeted to UI recipients who had permanently lost their jobs and were unlikely to return to their former employers. UI recipients were offered weekly SEA payments in lieu of their UI benefits of the same amount. Participants were provided with business development assistance, in the form of entrepreneurial training, business support services, and financial support.

Compared to a control groups, there was a significant effect on participants in the Massachusetts experiment with respect to the receipt of UI, participation in self-employment, and the level of total earnings. (See Table 6.) The length of the first UI spell was reduced by nearly two weeks, and UI benefit payments were reduced by nearly \$900. Participants were 12 percent more likely to become self-employed, and they spent nearly a month longer in self-employment. The annual earnings of participants from wage and salary employment increased by over \$3,000. While self-employment earnings increased as well, the increase was not statistically significant (Benus et al. 1995).

The costs and benefits of the Massachusetts experiment were estimated. (See Table 7.) For each participating claimant, the experiment yielded net benefits from the perspective of the participants, society, the U.S. Department of Labor and the entire U.S. government (Benus et al. 1995). During the time of experiments, federal budget legislation limited the ability to enact new programs such as SEA unless they had a neutral effect on the federal budget or unless other offsetting cost reductions were enacted at the same time. As a result, it was important to find new potential programs that would yield net benefits to the public sector.

Outside of the WPRS system, profiling participants with a formal statistical model is now being done for only one other U.S. employment program: self-employment assistance (SEA). Indeed, states which have implemented SEA use exactly the same profiling model as is used for WPRS. Self employment targeted to UI claimants likely to have long unemployment spells has continued to operate in a handful of states. Program statistics for 1996 to 2005 are reported in Table 8. If properly targeted it can be an effective avenue to steady incomes for a specific subset of UI claimants.

From 1990 to 1993, the USDOL ran Self Employment Assistance (SEA) experiments in two states, the one run in Massachusetts used a form of profiling to target participation. The profiling model for the experiment was different from the WPRS model, but used similar variables to predict likely exhaustion of UI benefits. Profiling was also intended to assuage employer concerns that workers who were not permanently laid off by employers might otherwise be eligible for SEA.

Based on preliminary impact results from the two SEA experiments available in mid-1993, a provision allowing states to establish self-employment assistance (SEA) programs as part of their UI programs was enacted into federal law. Signed into law December 8, 1993, this provision allowed states the option of offering self-employment assistance to profiled UI claimants as an additional means of helping assist dislocated workers obtain new employment. However, SEA authorization was temporary and set to expire in December 1998 (Larry Orr et al. 1994). The legislation was enacted with federal and state support. It was expected that the work profiling mechanism would target the program to appropriate participants, that the program would be cost effective, and that it would have a neutral impact on the federal budget.

In accordance with the 1993 legislation, the USDOL conducted a review of the SEA program through 1996. The study found that all state programs were using a WPRS model to target offers. As in the Massachusetts experiment, the SEA is administered through UI, and it amounts to a work search waiver so that weekly UI payments continue while self-employment activity begins. Slightly over 2,600 individuals participated in SEA programs during 1996 in the five states that had operational programs at that time (New York, Maine, Oregon, Delaware, and New Jersey). In addition, based on annual program outcome data submitted by New York, Oregon, Maine and Delaware, over two-thirds of SEA program participants started their own businesses, and between 18 percent and 50 percent also worked in wage and salary employment (Vroman 1998).

After the temporary authorization for SEA, the final evaluation report on the SEA experiments in Massachusetts and Washington was completed and published by USDOL in June, 1995. The final evaluation report recommended that "...SEA should be permanently incorporated into the U.S. employment security and economic development system" (Jacob Benus et al. 1995). Congress authorized a permanent SEA program in September 1998, and the bill was signed into law on October 28, 1998.

Under the new legislation, the USDOL issued amended federal guidelines to inform the participating states that they may continue their existing program and encourage other states to consider implementing their own programs. SEA remains the same program it was during the five-year trial period, retaining the requirement that states select participants using a profiling mechanism. Profiling relating to potential exhaustion of UI benefits continues to be a requirement under the new program, but states are no longer required to submit SEA program plans to USDOL in advance of implementing their programs.⁷

Ten states have enacted SEA legislation, and all but one have implemented SEA programs. SEA states in order of enactment are: New York, Maine, Minnesota, Oregon, Delaware, New Jersey, California, Maryland, Pennsylvania, and Louisiana. Louisiana's law only became effective in January 2005. California never implemented its law, and Minnesota repealed its legislation at the end of 1998. All states require demonstration of the interest and ability to start and run a small business before granting SEA participation. The SEA programs have removed a barrier to self-employment in the UI law, and instead, have actively supported eligible workers in making the transition from unemployment to self-employment.

As with counterpart programs in other industrial nations, SEA programs in the U.S. remain very small. Less than one percent of all UI recipients participate. Of the SEA implementing states, the New York and New Jersey programs have been by far the largest. Both New York and New Jersey use the WPRS program to refer workers to the SEA program. They account for nearly all the referrals shown in Table 11, but the small size of the program is indicated by the fact that referrals reached a maximum in 2002 at a level of only 5,247.

Looking at SEA weeks compensated, the total is again very small, reaching a high point of 7,288 in 2001. By state, New York, New Jersey and Massachusetts have been the largest participants in the programs. Most states are declining in their participation in the program. New York and Pennsylvania reached a peak in 1997, New Jersey in 2001, and Oregon in 2003. Only Maine and Minnesota reached a peak in weeks compensated in 2004.

⁷UI Program Letter 11-99, Permanent Authorization of the Self-Employment Assistance Program, issued on December 17, 1999 (USDOL 1999).

5. Job Training

Publicly financed job training in the U.S. has had uneven results. A recent review of decades of training program evaluations that use experimental methods summarized the results as follows:

- Training as delivered in traditional employment training programs produces modest incremental impacts on employment and earnings (measured relative to other services available in the community) for adult men and women. While statistically significant and often lasting for years, these impacts are insufficient to lift these individuals and their families out of poverty.
- Training as delivered in traditional programs does not result in positive employment and earnings impacts for disadvantaged youth. Training for youth that is delivered through intensive and expensive programs like the Job Corps does produce modest and lasting impact on employment and earnings as well as strong returns on investment...
- Employment-focused approaches tend to produce modest, significant and near-term effects on employment and earnings for welfare recipients...
- [Human capital development] programs produce significant long-term (up to nine-year) impacts on employment and earnings for welfare recipients that exceed those of less costly "work-first" programs (King 2004, pp. 87-88).

Given these findings, it is not surprising that policy makers are looking for more effective publicly funded training programs, and that improved profiling is one approach that has been explored.

Jacobson, LaLonde and Sullivan (1997, 2002) examined the behavior of over 121,000 labor force attached individuals who dislocated in Washington state during the early 1990s and applied for UI benefits. About one-fifth of the sample - about 25,000 persons - enrolled in at least one community college course around the time of their job loss. The study analyzed the results of the participation in community college course work for dislocated workers.

The study looked at the impact of taking at least one course on earnings after three years (Table 9). On average, taking one or more community college courses had a small, positive effect on both men and women. The effect had varying effects on individuals depending on their demographic characteristics. Individuals were likely to have a positive impact on their earnings if they were minorities members, aged 22-24, had less than six years tenure, or had more than a high school degree. These factors provided insight about who benefits from training, but they are not useful for profiling training. While some of the factors can be used for counseling individual about the benefits of training, individuals can not be denied referral to training in the U.S. based on their demographic characteristics.

However, more important than demographic characteristics were the types of courses individuals enrolled in. The authors divided courses into “high-return courses”—health related fields, technically oriented vocations including the trades, and academic math and science classes—and “low-return courses” consisting of all other courses. High-return courses had a substantial earnings impact on individuals, while low return courses had a negative impact.

The implications of this study is that the most important profiling that can be done to improve earnings is to select encourage or require the taking of high-return courses if the goal is to increase earning.

As indicated above, uneven results from publicly financed training in the U.S. has encouraged policy makers to look for way in increased the effectiveness of training. As well as looking for more effective ways of providing training, training impacts could be improved by improving the profiling of training.

Improved profiling of training could be a powerful tool to guide dislocated workers to the type of training proven to be most cost effective in the past. Based on their labor market and personal characteristics, dislocated workers could be referred to different types of training such that their employment and earnings outcomes could be improved over a simple random assignment process.

Jacobson, LaLonde and Sullivan (1999) studied the training decisions of displaced workers in Washington state during the early 1990s, examining the community college courses taken by these workers. Data on dislocated workers enrolled in 25 Washington community colleges included the types of courses they took, their grades, and the period of time when they were enrolled. Dislocated worker status and reemployment earnings history were identified using UI wage records.

The study divided training into nine categories. It found that averaging across all kinds of training, displaced workers who received training through community colleges experienced small earnings gains. However, these overall mean effects masked the fact that high earning gains accrued to those taking quantitative or technical courses; specifically courses in three categories: health services, technical skills, science and mathematics.

The study examines how the labor market and personal characteristics of dislocated workers affected their enrollment and participation in community college. Rates of enrollment, training and training completion are found to be related to educational level, industry, prior wages, urbanization, job tenure, age at separation, gender and minority status.

The impact of participation by dislocated workers in community college training on earnings is an increase in quarterly earnings of about \$6 for each credit earned. The distribution of earnings gains varied by minority status, age, tenure at displacement, industry, region of the state and prior education. The highest return to community college schooling accrued to workers with high tenure, more prior schooling, and those in the state’s largest labor market (Seattle).

The study concludes that training for dislocated workers is most cost effective when provided in three (health services, technical skills, and math and science) of nine types of training studied, and that the effectiveness of providing this training can be increased by profiling to those workers who can achieve the greatest earnings gains from this training.

6. Welfare to Work

In August 1996, federal welfare reform legislation was enacted in the form of the Personal Responsibility and Work Opportunities Reconciliation Act (PRWORA). The new program, called Temporary Assistance to Needy Families (TANF), replaces Aid to Families with Dependent Children (AFDC). In August 1997, to support the employment emphasis of TANF, the USDOL-administered welfare-to-work (WtW) program was enacted. It provided \$3 billion to states and localities to assist welfare recipients in obtaining and retaining employment. Under welfare reform, the WtW program provides employment assistance to welfare recipients using a “work first” approach, such that recipients receive assistance in finding jobs first before being referred, as needed, for additional services, e.g., education and training. They can receive training as well as other post-employment services such as child care and transportation assistance, but generally only after they become employed.

States had both TANF and WtW federal funding to assist welfare recipients in their employment efforts. TANF provides for block grant funding to states, with funding fixed at the 1994 level even though welfare rolls have fallen sharply, leaving a substantial budget for assisting TANF recipients in achieving initial employment as well as helping former welfare recipients retain their jobs and advance their careers.

WtW and similar programs initiated by the states are particularly amenable to profiling. Welfare recipients vary a great deal in their prior labor force attachment, which makes their ability to become employed very different. Welfare recipients with strong work histories need relatively less assistance, while those with no work experience have very great needs. Further, while many welfare recipients can get a job, there are many barriers to steady employment and career growth, including having reliable child care and transportation.

Similar to dislocated workers who provide data useful for statistical profiling when they file for UI benefits, welfare applicants provide welfare and work first agencies similar data which could be used to benefit their career development choices.

Welfare profiling can be used by the WtW agency whether it is the local workforce development agency or the local welfare agency. Regardless of the location, service to clients can be improved by making use of client data to more effectively target employment services. The existence of profiling mechanisms may also make it easier for there to be cooperation between the workforce development and welfare agencies when the functions are separated.

The USDOL has been interested in helping local WtW agencies make better informed choices about the provision of employment services to welfare recipients. To that end, USDOL

decided to test whether a statistical profiling mechanism could be developed to determine which welfare recipients should receive particular types of WtW services. USDOL funded the W.E. Upjohn Institute for Employment Research to develop and test the use of WtW profiling as a field experiment to help welfare recipients find their initial job. The model was developed during 1997. During 1998 and 1999, Upjohn tested this model in the Kalamazoo-St. Joseph county Service Delivery Area (SDA). The WtW service profiling model reversed the concept of WPRS profiling to instead estimate the probability of becoming and remaining employed. The variables used to explain the propensity for employment reflect labor market experience and characteristics of the welfare population. They are: 1) age at time of enrollment, 2) parental status, 3) educational attainment, 4) AFDC/TANF history, 5) target group (long-term welfare recipient, older children, little or no work experience or education), 6) prior employment, and 7) compliance history in previous WtW enrollment. The statistical model was sufficiently precise to distinguishing according to the likelihood of their remaining employed. Service providers in the SDA provided different service intensities. The results showed that allocating individuals among service providers using profiling methods could increase the retention rate and result in highly cost effective results (Eberts 2002). WtW profiling models were also developed by Broward County, Florida.

As more welfare recipients become employed, it has become clear that finding a job is just the first step toward becoming a stable working member of the labor force. In recognition of this reality, states have been spending increasing portions of their TANF and WtW funds on job retention and advancement. As part of this effort, the U.S. Department of Health and Human Services (HHS) sponsored a number of research projects dealing with job retention, including an analysis of what post-employment services are needed and how to target these services to those most in need of them. The interest of HHS was to see if such analysis would allow the design of programs that encourage job retention and advancement or, in the case of job loss, rapid reemployment.

Targeting Reemployment Services in Michigan Work First

The purpose of Michigan's Work First Program is to move recipients of cash public assistance (welfare) into jobs as quickly as possible. It was developed under special waivers approved by the Clinton Administration in 1994 and 1996. The waivers permitted Michigan to try new reemployment methods different from standard rules in the federal Aid to Families with Dependent Children (AFDC) program. Michigan Work First has continued under the new federal cash public assistance program called Temporary Assistance for Needy Families (TANF).

Work First in Michigan provides welfare recipients reemployment skills, support, and opportunities to obtain employment, and it offers instruction in the proper techniques for writing resumes, completing applications, and interviewing for jobs. All enrollees receive similar services regardless of their needs. More intensive skill training is available only to those who hold a job or those who have repeatedly failed to find employment. After clients complete the core services, they are expected to search intensively for work and accept offers that provide at

least 20 hours of work per week at or above minimum wage.⁸ Customers employed for 90 consecutive days in a qualified job are considered a successful outcome, and they are terminated from the program. As an incentive for finding work, participants are allowed to keep the first \$200 earned each month and 20 percent over that without reducing benefits. Participants also receive transportation, child care, and Medicaid for a limited time.

A pilot study was undertaken to test new administrative tools intended to more effectively target services to customers (Eberts 2002). The aim was to improve the outcomes of Work First Participants without changing the nature of the program or significantly raising costs. Statistical techniques were developed to estimate the likelihood of employment based on participants' demographic and work history information found in administrative records. An employability score was computed for each customer and was then used to assign each participant to one of three different service providers. Each provider offered the same basic set of services but differed in the mix of services and in their approach to delivering services. The pilot used these differences to determine the best provider for each customer.

The pilot was designed by the W.E. Upjohn Institute for Employment Research and conducted at the Kalamazoo/St. Joseph Workforce Development Board (WDB), which is administered by the Institute. The evaluation, based on random assignment, provided evidence that the pilot was successful in using statistical tools to improve program outcomes by placing more welfare recipients into jobs. It showed that the statistical assessment tool successfully distinguished among participants with respect to barriers to employment. It also found that referring participants to service providers according to their individualized statistical needs assessment (employability score) increased the overall effectiveness of the program as measured by the program goal of customers finding and retaining a job for 90 consecutive days.

This statistical assessment model was based on the outcomes of participants entering the program during 1996. Participants were predominantly single parents who had not completed high school and who had been on welfare for less than 36 months during the last five years. Some of the participants had completed a general equivalency diploma (GED), but few received vocational training.

The evaluation yielded the following results. First, the statistical model exhibited sufficient precision to distinguish among participants according to their likelihood of working 90 consecutive days. Second, there was considerable variation in the retention rates among the various combinations of providers offering services to participants in the three employability groups, as identified by the assessment tool. The retention rate of the combination of providers that yielded the highest rate was 56 percent higher than the combination yielding the lowest rate,

⁸Allowable work activities include 1) unsubsidized employment; 2) subsidized private sector employment; 3) subsidized public sector employment; 4) on-the-job training; 5) job search and job readiness training and activities up to six weeks; 6) community service programs; and 7) no more than 12 months of vocational educational training.

and 25 percent higher than if the participants were randomly assigned to providers. In addition, the earnings generated from the optimal combination of providers were 28 percent higher than the combination yielding the lowest earnings. Third, the *a priori* assignment of participants to providers in the treatment group, as determined by the judgment of the staff and by statistical analysis, was the same combination that yielded the highest retention rate according to the random assignment experiment.

The results of the Kalamazoo/St. Joseph Work First pilot provide evidence that the statistical assessment and referral system can be successful in identifying needs and in targeting services to help meet the needs of customers in finding jobs. By using the system developed for the pilot, more Work First participants can have successful outcomes without increasing the cost of the program. The pilot opens the possibility for statistical tools to be used to help improve the effectiveness and efficiency of other employment programs and service delivery systems. Some examples of these tools are described in other chapters in this volume.

Targeting Post-Employment Services for Welfare-to-Work

As more welfare recipients become employed, it has become clear that finding a first job is just the first step for individuals in becoming a stable working member of the labor force. In recognition of this reality, states have been spending increasing portions of their TANF and WtW funds on job retention and advancement. As part of this effort, the U.S. Department of Health and Human Services (HHS) has sponsored a number of research projects dealing with job retention, including an analysis of what post-employment services are needed and how to target these services to those most in need of them. The interest of HHS was to see if such analysis would allow the design of programs that encourage job retention and advancement or, in the case of job loss, rapid reemployment.

Rangarajan, Schochet and Chu (1998) examined the feasibility of targeting welfare recipients who initially find jobs for job retention services based on their personal and labor market characteristics. As with dislocated worker profiling, the goal of the study was to try to improve the efficiency of resource use, targeting post-employment services to clients most in need, as measured by those welfare recipients who are most likely to have long periods without employment.

Using the National Longitudinal Survey for Youth data, the study constructed a nationally representative sample of welfare recipients who found jobs during the panel period, and analyzed their employment experiences over the five year period after they entered the labor force. Similar to other profiling methods, they used regression models to simulate the prediction of which sample members had negative employment outcomes during a five-year period, using individual and labor market characteristics that would be available from administrative data from the welfare program. They were able to determine the weighted effect of each of these characteristics on employment. The study showed how WtW programs could operationally target individuals for job retention services using administrative data on individual and labor force characteristics. They conclude that they have demonstrated how WtW programs can use

statistical methods to identify individuals who initially find jobs, but have the greatest risk of periods without employment by identifying these individuals based on their characteristics and selecting those individuals with the greatest potential need for services.

The variables used to predict long periods without employment are:

- 1) Age younger than 20 years when first applied for welfare
- 2) Employed less than half the time in year prior to job start
- 3) No high school diploma/GED
- 4) Presence of preschool child
- 5) Wage less than \$8.00 per hour
- 6) No fringe benefits
- 7) No valid driver's license
- 8) Has health limitations

The study found that the characteristics most strongly related to spells without employment were a) working without fringe benefits and b) having a health limitation. The result of this analysis again shows that a series of personal and labor market characteristics can be used to identify who should be referred to services — in this case post-employment services.

7. Frontline Decision Support System

The USDOL worked with the W.E. Upjohn Institute to pilot test a Frontline Decision Support System (FDSS) for workforce development staff in one-stop centers. The goal of FDSS is to assist staff in quickly assessing and properly profiling services to customers. FDSS tools were tested in new WIA operating systems in the state of Georgia.

Eberts and O'Leary (2002) report on efforts to develop and pilot test an FDSS for profiling reemployment services in a one-stop environment. FDSS is comprised of two modules: 1) systematic job search, and 2) service referral.

The systematic search module is means to undertake a structured search of job vacancy listings. To do this the module informs job seekers about their prospects for returning to a job like their prior one, provides a realistic assessment of likely reemployment earnings, and identifies occupations related to the prior one. The first component is called the industry transition component. It provides an estimate of the likelihood that a customer can find a job in their prior industry. The second component provides a realistic assessment of likely reemployment compensation levels. This feature is based on an earnings algorithm which is a statistical model based on personal characteristics, work history, prior earnings, and educational attainment to predict earnings upon reemployment. The third component is the related-occupations algorithm. The algorithm offers individuals who have exhausted their likely job prospects within their prior occupation a list of other occupations that are similar to their prior occupation.

The second module of FDSS is the service referral algorithm. The primary purpose of this algorithm is to identify the sequence of activities that lead most often to successful employment. The service referral module uses information about the characteristics and outcomes of individuals who have recently participated in and completed the various services offered by one-stop centers. This information is used to estimate the statistical relationships between personal attributes and outcomes. This algorithm has two basic components. The first is an estimate of a person's employability, or likelihood of finding a job. The second component is a delineation of the paths, or sequential combinations of services, that lead to successful outcomes. By conditioning these paths on the employability of a specific customer, the algorithm can offer estimates of the effectiveness of various programs for individuals with specific measurable characteristics.

8. Personal Reemployment Accounts

President George W. Bush announced Personal Reemployment Accounts (PRA) as part of his economic stimulus package on January 7, 2003. On January 29, 2003, a free standing legislative proposal to create PRAs was introduced in the House of Representatives in the 108th Congress as H.R. 444, the Back to Work Incentive Act of 2003.⁹ Under H.R. 444, individuals who are deemed likely to exhaust their entitlement to UI benefits would be offered a PRA in the amount of \$3,000 that could be used to purchase reemployment services, including training, or could be used as a reemployment bonus. Reemployment services could be purchased from public or private providers. Each reemployment service purchased would be drawn down against the \$3,000 PRA. Workers would be eligible for a reemployment bonus if they became employed within 13 weeks of becoming unemployed. The amount available to pay the bonus would be \$3,000 or the PRA balance if reemployment services were purchased. A reemployed worker would be immediately eligible for 60 percent of the bonus upon becoming reemployed. The remaining 40 percent would be payable if the worker retained the job for six months. (Levine and Lordeman 2005)

Conceptually, PRAs have two components. One is a human capital account to help workers improve their human capital while they search for work, providing them with their choice of training and intensive services, as well as support services, including transportation and child care services. The other component is an incentive to search for work in the form of a reemployment bonus. Together, the PRAs "represent a new and innovative approach to helping unemployed workers make a quick return to work and provide businesses with the skilled workforce that they need. They will empower individuals by giving them more flexibility, personal choice and control over their job search and career" (Chao 2003).

⁹On January 4, 2005, two bill were introduced in the 109th Congress that would authorize Personal Reemployment Accounts as part of the Workforce Investment Act: H.R. 26, a standalone bill, and H.R. 27, a bill to reauthorize WIA. The provisions of both bill were identical, and they, in turn, were identical to those of H.R. 444 that was passed by the House of Representatives in the 108th Congress.

The Council of Economic Advisors (CEA), under the leadership of its chair R. Glenn Hubbard, developed the concept and design of the PRA. The CEA described PRAs as “not intended as a replacement for UI but rather would be structured as a new component of the UI system. They would be offered as an additional option to those UI recipients who, under current UI rules, are referred to reemployment services.” (Council of Economic Advisors 2003, pp. 123-126) That is, PRAs would be offered to UI claimants who were determined as likely to exhaust benefits using the worker profiling mechanism under the terms of the Worker Profiling and Reemployment Services system, and they only would be offered until a proposed total appropriation of \$3.6 billion was exhausted. This appropriation was estimated to be sufficient to serve 1.2 million beneficiaries (in Program Year 2003) who were “very likely” to exhaust their entitlement to UI benefits. Qualifying unemployed workers would be given an account valued at \$3,000 that could be used to purchase reemployment services, training and supportive services, although core reemployment services would continue to be provided free of charge. Workers who found a job within 13 weeks of receiving their first UI payment would be able to retain the balance of the account as a reemployment bonus.

The Council justified the PRAs based on the four reemployment bonus experiments - Illinois, New Jersey, Pennsylvania and Washington—that were conducted as random assignment experiments. They described the key findings of the experiments: that the evaluations of the experiments “showed that a bonus of \$300 to \$1,000 motivated the recipients to become reemployed, reduced the duration of UI by almost a week, and resulted in new jobs that were comparable in earning to those obtained by workers who were not eligible for the bonus and remained unemployed longer” (CEA 2003).

The U.S. Department of Labor prepared for the enactment and implementation of the PRAs by funding research that would analyze the results of the reemployment bonus experiments, the ITA experiment and state administrative longitudinal data to better understand the likely outcome of the PRAs and how states can best implement them (Decker and Perez-Johnson 2004, O’Leary and Eberts 2004). This analysis and guidance would be used for implementing a full scale program, but it has already been used to assist the seven states participating in the PRA demonstrations to design and implement their individual state demonstrations.

To prepare for the implementation of PRAs, the U.S. Department of Labor commissioned two studies of the likely impacts of the program and methods by which the program could be implemented. The studies built upon existing data sets and evidence about the two components of the PRAs: the reemployment bonuses and the training vouchers.

Decker and Perez-Johnson (2004) based their analysis on an ongoing training voucher experiment as well as the Pennsylvania reemployment bonus experiment. The training voucher experiment tested a pure voucher option that looked somewhat like the human capital account voucher of the proposed PRA program. Individuals could use the pure vouchers in the manner they thought best to purchase training. Counselors in the one stop career centers would meet with pure voucher recipients, but the recipients were free to make training decisions on their own

about what kind of training to buy and who to buy it from. The preliminary findings from an interim evaluation was that unemployed workers offered a pure vouchers were more likely to receive training than individuals who received more counseling and direction and they were took training in similar areas to individuals offered the other vouchers.

Decker and Perez-Johnson divide their study into three parts. The first part deals with predicted impacts of the PRA reemployment bonus offers with respect to bonus receipt rates, impacts on UI receipt and entry effects into the UI program. These are all compared to the result under the reemployment bonus experiments. They estimate that a \$3,000 bonus offer would increase the rate of receipt of the bonus offer from 11 to 22 percent up to about 30 percent. The increase in participation is expected both because of the higher bonus offer and because the bonus is payable immediately rather than after four months on the new job. They also predict that reductions in UI receipt will be greater because of a larger bonus offer and because of profiling on a population that is likely to have longer UI durations in the absence of a bonus offer.

Second, states would have to decide how large to make the PRA offer, whether it should be \$3,000 or set at a lower amount. Decker and Perez-Johnson point out tradeoffs in setting the PRA level. A level of \$3,000 is about twice as great as the largest reemployment bonus level set under the experiments, but it would still be less than most local ITA offers under WIA. Lowering the offer below \$3,000 would bring the reemployment bonus offer closer to tested levels, but it would exacerbate the inadequacy of a training voucher. Lowering the offer would also allow PRAs to serve more UI recipients.

The third part of the study deals with recommended state procedural issues in developing and implementing their PRA programs. The authors describe procedures that could make it easier for states to implement PRAs. They opt for simplicity to allow quick implementation and to accommodate a temporary three year program that would be established under H.R. 444. They adapted procedures from the Pennsylvania reemployment bonus experiment, for which procedures for offering bonuses, verifying employment, and making payments were similar to those that would have to be developed under the PRAs.

O'Leary and Eberts (2004) simulated the effects of the PRAs using detailed transaction-level administrative data from the state of Georgia. They first estimated costs for intensive, training and supportive services based on state expenditures level, relative utilization of each service, and relative valuations for the services. The simulations estimated the average cost per offer of a \$3,000 PRA offer to help states estimate how many offers to make during an enrollment cycle. The simulations also determined the likely pattern of use of the reemployment bonus, services, and income maintenance payments. Estimates were made under a baseline that assumed no behavioral response to the bonus offer, as well as estimates assuming a one or two week reduction in UI receipt. Under the baseline estimate, they find that 40 percent of workers would receive a first payment under the reemployment bonus, while only 27 percent would remain employed and receive the second payment.

The cost associated with the PRA offers for the bonus, purchase of services, and UI exhaustee payments is estimated at about \$2500, with small increases as the behavior impact increases because of greater receipt of the bonus. They conclude that a \$3,000 bonus offer would not be cost effective, while a smaller targeted bonus could be cost effective.

O’Leary and Eberts estimated the number of PRAs that could be offered, assuming 100 percent take up of the PRA offers, as well as under a likely take up rate of about 80 percent—based on the reemployment bonus experiments—and the resulting reduced number of PRAs that could be offered. They estimated the sensitivity of their estimates of the number of PRAs that could be offered to changes in the assumed prices for services, finding that the results are quite stable. Reducing prices of service by half would result in the ability to increase the number of offers by about 20 percent. They could not determine, however, how the imposition of prices for services that were previously offered free of charge would change the demand for services by workers who are offered the PRAs.

They also estimated the likelihood that workers would go to either of two extremes: 1) purchase service and not pursue a bonus, or 2) pursue the bonus and not purchase services. They found that an individual who purchased services and did not pursue the bonus would have to either experience an increase in earnings of 14 percent or return to work 6 weeks sooner, to compensate for the receipt of the full bonus offer. They determined that past research makes unlikely either of these results.

For individuals who did not receive bonuses, they estimated whether \$3,000 would be sufficient to purchase a bundle of services. They found that there would be a shortfall of funds. They also estimated the increase in the number of PRAs that could be offered as the statewide maximum PRA offer was lowered.

For the Washington and Pennsylvania experiments, recipients of bonuses did not experience a lower wages than the control group. While O’Leary and Eberts posited that paying the first bonus payment immediately upon become unemployed might result in lower wages, they did not have data with which to estimate whether or how much wages might decline.

In response to Hurricanes Katrina, the Bush Administration introduced two new pieces of legislation on October 6, 2005, that proposed an initiative that looks much like PRAs. Worker Recovery Accounts are similar to PRAs but only would be available in portions of Alabama, Louisiana and Mississippi that were declared disaster areas as a result of Hurricane Katrina. Under the Worker Recovery Act (H.R. 3976), Worker Recovery Accounts contain both voucher and reemployment bonus provisions that differ from PRAs in two important ways. First, the overall voucher amount is increased to \$5,000, allowing vouchers to support more extensive or intensive training, as well as more employment and support services. Second, the reemployment bonus is equal to the balance of the voucher but can not exceed \$1,000. Thus, the bonus amount under the new proposals is more consistent with the Pennsylvania and Washington experiments. Worker Recovery Accounts continued to follow PRAs by offering two payments, one at

employment and the other after a six month reemployment period. These proposals were not enacted.

The original PRA provisions under H.R. 444 also were not enacted in 2003 or 2004, but the Bush Administration decided to try out PRAs on a small scale. In August 2004, the Department of Labor announced plans to implement a PRA demonstration project. States were asked to apply. On October 29, 2004, Secretary Elaine Chao announced that USDOL was investing nearly \$7.9 million in demonstration projects in seven states—Florida, Idaho, Minnesota, Mississippi, Montana, Texas and West Virginia—to participate in a demonstration project that would allow unemployed workers to use personal reemployment accounts to find new jobs. The demonstration project was designed to test the effectiveness of PRAs (USDOL 2004).

Generally, the design of the demonstration follows that of the legislation proposed in H.R. 444. The states had to offer PRAs of \$3,000, with funding available to make a total of 2,000 offers for the seven participating states. States had to charge participating workers for services offered other than WIA core services and had to develop their own cost list for all reemployment services. They had to offer a reemployment bonus that could be paid to workers who received PRA offers and found jobs within 13 weeks—by their 13th compensable week of UI receipt. States were given options to with respect to the design. They could choose the reemployment bonus amount to be in the amount of the balance of the \$3,000 PRA offered or some lesser amount.

Preparation for the legislation and the demonstration project was conducted by U.S. Department of Labor staff and by research contractors, based on research dealing with reemployment bonuses and training vouchers, as well as simulations using state administrative data. Technical assistance and an evaluation are being conducted by a contractor. However, Congress expressed dissatisfaction with the Department's implementation of the PRA demonstrations. In the fiscal year 2006 appropriation, specific language was included that prohibits the use of discretionary funds for PRAs unless specifically authorized by law.

PRAs were incorporated into President Bush's new proposal to reauthorize the Workforce Investment Act in 2005. The House of Representatives passed a WIA reauthorization bill model after the Administration proposal, and it includes PRAs. In early 2006, President George W. Bush changed direction and announced a new Competitiveness Initiative that included Career Advancement Accounts (CAA) and that would replace the PRAs. These accounts would provide training accounts to up to 800,000 individuals each year, but these vouchers can only be used for training and do not include a reemployment bonus component. The CAA have been incorporated into the 2006 Bush Administration proposal to reauthorize WIA. Thus, there is no current Administration proposal to adopt reemployment bonus in the U.S.

9. Summary and Conclusions

Employment policy experience and research evidence in North American and European contexts identifies many potentially useful reemployment initiatives. In all cases the degree of cost-effectiveness can be enhanced by proper targeting of assistance. Targeting may be either informal or explicit. Traditional mechanisms for assigning participants to programs like first come first serve or block purchases of training slots, are being supplanted by formal mechanisms based on historical evidence about what works best for recent participants with similar characteristics. Such systems rely on “profiling” of program applicants to help customize selection of reemployment services most likely to benefit each customer.

This paper reviews US program experience and evaluation evidence about profiling potential participants for the following workforce development programs: job search assistance, reemployment bonuses, self-employment assistance, job training, welfare-to-work, a front line decision support system, and personal reemployment accounts.

Profiling has been found to be effective for targeting job search assistance to dislocated workers at risk of long term joblessness. This mechanism operates formally in all states as part of the Worker Profiling and Reemployment Services (WPRS) system.

A series of field experiments estimated that cash reemployment bonus offers could shorten unemployment durations of UI beneficiaries. Targeting offers with statistical profiling models to those most likely to exhaust their UI benefit entitlement was estimated to improve the cost effectiveness of reemployment bonus offers.

Self employment assistance (SEA) for UI beneficiaries was tried in field experiments in two states and was found to be cost-effective when targeted to those at risk of long term benefit receipt. SEA became a policy option for states as part of the NAFTA act, and was made permanent five years later. It has proven to be a valuable pathway to steady income for many UI beneficiaries targeted by the program.

Evaluations of public job skill training for workers permanently separated from prior jobs has provided guidance to program staff making training referral decisions. Field tests of targeting for training referral could greatly inform effective management of public workforce development.

Activation of recipients of cash public assistance has become known as welfare-to-work (WtW) in the US. A Michigan field experiment found that targeting in referral to alternative delivery systems for similar reemployment services could improve overall program cost-effectiveness. A study of employment retention for WtW participants based on a national sample identified predictors of reemployment job loss, thereby providing a basis for targeting job retention services.

Efficiency improving initiatives based on customer choice in selecting employment services have been tried as personal reemployment accounts. All policy proposals and trials

have targeted offers to profiled UI claimants identified as most likely to have long periods of benefit receipt. Evidence from field tests currently under way should improve potential program design.

A front line decision support system (FDSS) was developed and pilot tested in the state of Georgia. The system applied profiling principles to develop methods, but did not establish an authority for customer referral. FDSS can be a valuable tool for employment professionals, and a self-service tool for informed job seekers.

Profiling has been applied and tested in a variety of employment programs in the US. It is a basis for formal targeting of services as an alternative to established practices based on custom and organizational inertia. There are two keys to the long term success of profiling for employment policy. First, statistical models must be regularly updated to ensure that selection models perform as expected by properly selecting customers for services at a rate significantly higher than would be generated by random assignment. Secondly, results from profiling models should be regarded as summary information providing guidance to staff and customers. Results from models should not be applied in a mechanical automated fashion which excludes professional judgement and individual choice from the process.

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Table 1. Studies of Job Search Assistance and Requirements

Author, Year, Title	Design	Sample	Findings
Terry R. Johnson, Katherine P. Dickinson, Richard W. West, Susan E. McNicoll, Jennifer M. Pfiester, Alex L. Stagner, and Betty J. Harris. 1983. A National Evaluation of the Impact of the United States Employment Service.	P1: employment service job referral P2: Early employment service job referral C: Registered, but received no services	National: 30 offices in 27 States July 1980 to May 1981 8,000 employment service applicants	P1: 23-percent earnings gain for all women, ¹ UI claimants, and non-claimants. No measurable impact on men. P2: Large earnings gains for women, modest earnings gains for men. Among men, bigger effects for men over 45 years and men living in urban areas. Comments: Results not affected by selectivity bias correction.
Walter Corson, David Long, and Walter Nicholson. 1985. Evaluation of the Charleston Claimant Placement and Work Test Demonstration.	T1: Stronger work test T2: T1 plus enhanced placement services T3: T2 plus job search workshop C: Standard work test	Charleston, SC: February to December, 1983 T: 4,247 C: 1,428	T1: -0.55 week UI ¹ T2: -0.61 week UI ² T3: -0.76 week UI ² Impacts greater on men and construction workers.
Terry R. Johnson and Daniel H. Klepinger, 1991. Evaluation of the Impacts of the Washington Alternative Work Search Experiment.	T1: Exception reporting T2: New work search policy T3: Intensive services C: Existing work search policy	Tacoma, WA: July 1986 to August 1987 T: 6,763 C: 2,871	T1: +3.34 weeks UI ² T2: +0.17 week UI T3: -0.47 week UI ¹ Exits increased preceding required service participation.
Daniel H. Klepinger, Terry R. Johnson, Jutta M. Joesch, and Jacob M. Benus. 1998. Evaluation of the Maryland Unemployment Insurance Work Search Demonstration	T1: Report 4 weekly employer contacts T2: Make 2 weekly contacts, no reporting T3: Report 2 contacts weekly, plus a 4-day job search workshop T4: Report 2 contacts weekly; both verified C1: Report 2 weekly contacts; not verified C2: C1 plus told will be used in an evaluation	Maryland, six offices, Jan. 1, 1994 to Dec. 31, 1994 Combined sample: 23,758 monetarily eligible new initial UI claimants	T1: -0.7 week UI ² T2: +0.4 week UI ¹ T3: -0.6 week UI ² T4: -0.9 week UI ² Impacts identical against either control group, suggesting no Hawthorne effect present. Treatments 1, 3, and 4 had no impact on earnings. Treatment 2 raised earnings by 4 percent. ²

¹Statistically significant at the 90-percent confidence level in a two-tailed test.

²Statistically significant at the 95-percent confidence level in a two-tailed test.

NOTE: P = participant group, C = comparison group, T = experimental treatment group.

SOURCE: Christopher J. O'Leary. 2006. "State UI Job Search Rules and Reemployment Services," *Monthly Labor Review* 129 (6): 27-37.

Table 2. Studies of Targeted Job Search Assistance and Requirements

Author(s), Year, Title	Design	Sample	Findings
W. Corson, P. Decker, S. Dunstan, A. Gordon, P. Anderson, and J. Homrighausen. 1989. New Jersey UI Reemployment Demonstration Project: Final Evaluation Report.	T1: Job search assistance (JSA) T2: JSA, plus training or relocation assistance T3: JSA plus a cash reemployment bonus C: Eligibility: First UI payment, age, tenure, temporary layoffs, union member	New Jersey: July 1986 to June 1987 T: 8,675 C: 2,385	T1: -0.47 week of UI ¹ T2: -0.48 week of UI ¹ T3: -0.97 week of UI ¹ 6-year T1: -0.76 week of UI 6-year T2: -0.93 week of UI 6-year T3: -1.72 weeks of UI ¹
Paul T. Decker, Robert B. Olson, Lance Freeman, and Daniel H. Klepinger. 2000. Assisting UI Claimants: The Long-Term Impact of the Job Search Assistance Demonstration.	T1: Structured job search assistance T2: Individualized job search assistance T3: T2 plus training C: Neither on standby nor a union hiring hall member, and predicted likely to exhaust UI entitlement	DC: June 1995 to June 1996 8,071 claimants FL March 1995 to March 1996 12,042 claimants	DC T1: -1.13 weeks of UI ¹ DC T2: -0.47 week of UI ¹ DC T3: -0.61 week of UI ¹ FL T1: -0.41 week of UI ¹ FL T2: -0.59 week of UI ¹ FL T3: -0.52 week of UI ¹
K. Dickinson, P. Decker, S. Kreutzer, and R. West. 1999. Evaluation of Worker Profiling and Reemployment Services (WPRS): Final Report	P: Profiled by WPRS system and referred for early JSA C: Profiled, but not referred (neither on standby nor a union hiring hall member)	CT, IL, KY, ME, NJ, SC. July 1995 and December 1996. P: 92,401 C: 295,920	CT: -0.25** week of UI ¹ IL: -0.41** week of UI ¹ KY: -0.21* week of UI ² ME: -0.98** week of UI ¹ NJ: -0.29** week of UI ¹ SC: 0.02 week of UI
Black, Smith, Berger, and Noel. 2003. Is the Threat of Reemployment Services More Effective than the Services Themselves?	T: Profiled by WPRS system and referred for early JSA C: Profiled and in the same UI exhaustion cohort as T, but not referred for job search assistance	Kentucky: October 1994 to June 1996 T: 1,236 C: 745	In the benefit year T: -2.2 weeks of UI ¹ T: -\$143 in UI benefits ¹ T: \$1,054 in earnings ¹

¹ Statistically significant at the 95-percent confidence level in a two-tailed test.

² Statistically significant at the 90-percent confidence level in a two-tailed test.

NOTE: T = experimental treatment group, P = participant group, C = experimental control group or comparison group.

SOURCE: Christopher J. O’Leary. 2006. “State UI Job Search Rules and Reemployment Services,” *Monthly Labor Review* 129 (6): 27-37.

Table 3. Worker Profiling and Reemployment Services Participation Data, 1994 - 2004

Year	UI First Pays	Profiled	Referred	Reported	Orientation
1994	7,959,135	122,065	23,087	17,184	14,126
1995	8,035,229	4,061,731	456,533	453,005	283,508
1996	7,995,135	7,208,694	821,443	1,036,806	512,045
1997	7,341,903	6,985,048	745,870	990,041	474,891
1998	7,341,903	6,982,571	783,779	1,033,482	477,913
1999	6,967,840	6,483,514	803,401	990,737	447,032
2000	7,035,783	6,475,605	977,440	1,229,352	557,250
2001	9,868,193	8,952,312	1,154,743	1,499,364	666,610
2002	10,092,569	9,178,024	1,220,466	986,719	619,917
2003	9,935,108	8,238,485	1,147,448	919,450	595,564
2004	8,386,623	6,973,159	1,084,025	893,695	607,683

Year	Assessment	Counseling	Placement	JSW	Training
1994	9,876	5,883	5,671	11,042	4,492
1995	246,655	140,301	267,281	213,512	74,292
1996	507,824	214,528	613,544	338,508	166,456
1997	455,914	194,818	630,760	336,959	160,741
1998	416,027	191,315	676,284	296,681	156,462
1999	403,195	198,571	668,492	253,451	141,398
2000	471,712	146,917	645,170	342,856	113,879
2001	531,020	129,136	506,172	452,439	120,093
2002	462,643	125,103	376,757	369,756	76,448
2003	423,977	114,142	378,180	400,245	70,295
2004	330,972	93,055	384,629	367,722	73,043

SOURCE: Summary of monthly state reports to the Employment and Training Administration (ETA), U.S. Department of Labor. UI first payment data from ETA report number 5159. Other Worker Profiling and Reemployment Services (WPRS) data from ETA report number 9048.

Concept	Definition
UI First Pays	Number of first UI payments for new benefit years established in the United States.
Profiled	Number of UI claimants profiled by state WPRS systems.
Referred	Number of profiled claimants referred to reemployment services.
Reported	Number of profiled and referred claimants who report for services.
Orientation	Number of profiled and referred claimants who complete orientation for WPRS services.
Assessment	Number of profiled and referred claimants who complete an individual assessment.
Counseling	Number of profiled and referred claimants who participate in job counseling.
Placement	Number of profiled and referred claimants who are placed in jobs.
JSW	Number of profiled and referred claimants who complete a job search workshop (JSW).
Training	Number of profiled and referred claimants who are referred to government funded job training.

Table 4. Treatment Impacts on Weeks of UI per Claimant for the Reemployment Bonus Experiments (Standard errors in parentheses)

ILLINOIS: Bonus Amount	Qualification Period	Impact Estimate
\$500	11 weeks	-1.15** (0.27)

NEW JERSEY: Bonus Amount	Qualification Period	Impact Estimate
Half the remaining UI entitlement with the initial offer good for two weeks and then declining by 10 percent per week.	11 weeks	-0.69** (0.23)

PENNSYLVANIA	Qualification Period	
	Bonus Amount	
	6 Weeks (short)	12 Weeks (long)
3 x WBA (low)	-0.65** (0.34)	-0.36* (0.28)
6 x WBA (high)	-0.44* (0.31)	-0.82** (0.27)
Declining		-0.33 (0.30)

WASHINGTON	Qualification Period	
	Bonus Amount	
	(0.2 x Potential UI Duration) + 1 Week (short)	(0.4 x Potential UI Duration) + 1 Week (long)
2 x WBA (low)	-0.06 (0.30)	-0.50* (0.29)
4 x WBA (medium)	-0.19 (0.30)	-0.14 (0.30)
6 x WBA (high)	-0.62* (0.33)	-0.73** (0.34)

*Statistically significant at the 90 percent confidence level in a two-tailed test.

**Statistically significant at the 95 percent confidence level in a two-tailed test.

SOURCE: O'Leary, Decker, and Wandner (1998)

Table 5. Estimated UI Effects, Earnings Effects, Bonus Payment Costs, and Net Benefits to the UI System per Claimant for Alternative UI Benefit Exhaustion Probability Groups (Standard errors in parentheses)

	Mean bonus offer			Low bonus/Long qualification offer		
	Top 25 percent	Top 50 percent	Full sample	Top 25 percent	Top 50 percent	Full Sample
PENNSYLVANIA						
UI effects	-139 (136)	-158* (95)	-113* (63)	-175 (200)	-183 (135)	-114 (91)
Earnings effects	536 (568)	616 (418)	318 (275)	810 (810)	822 (584)	363 (391)
Bonus payment costs	105 (11)	104 (8)	95 (5)	78 (16)	70 (10)	59 (7)
Net benefits to UI system	6 (137)	27 (95)	-12 (63)	72 (201)	88 (135)	26 (91)
WASHINGTON						
UI effects	-30 (92)	-53 (66)	-30 (44)	-75 (124)	-106 (90)	-74 (59)
Earnings effects	-412 (1509)	-106 (849)	-722 (526)	-260 (2287)	649 (1399)	119 (897)
Bonus payment costs	110 (6)	119 (4)	105 (3)	62 (6)	64 (5)	52 (3)
Net benefits to UI system	-88 (94)	-70 (67)	-86* (45)	7 (127)	46 (92)	20 (60)

*Statistically significant at the 90 percent confidence level in a two-tailed test.

**Statistically significant at the 95 percent confidence level in a two-tailed test.

SOURCE: O'Leary, Decker, and Wandner (2005)

Table 6. Massachusetts Self-Employment Demonstration Net Impacts

	Control	Treatment	Impact
Self-Employed after Random Assignment (%)	58%	47%	-11%
Length of First UI Spell (weeks)	26.5	24.5	-2.0
UI Benefits Received after Random Assignment (\$)	\$7,400	\$6,567	-\$833
Annual Time in Self-Employment (months)	2.6	1.7	-0.9
Annual Self-Employment Earnings (\$)	\$2,627	\$1,439	-\$1,188
Annual Time in Wage and Salary Employment (months)	4.4	4.1	-0.3
Annual Wage and Salary Earnings (\$)	\$10,119	\$7,797	-\$2,322

* Significantly different from zero at the 90 percent confidence level.

** Significantly different from zero at the 95 percent confidence level.

*** Significantly different from zero at the 99 percent confidence level.

SOURCE: Benus et al. (1995)

NOTE: Impact estimates regression-adjusted with observable variables by ordinary least squares.

Table 7. Massachusetts Self-Employment Demonstration Benefit-Cost Analysis (Dollars per claimant)

Benefits and Costs	Participants	Society	Program	Government
Earnings	\$14,859	\$14,859	\$0	\$0
Taxes	\$-2,229	\$0	\$156	\$2,229
UI Payments	\$-876	\$0	\$876	\$876
Demonstration Costs				
Local Office	\$0	\$-56	\$-56	\$-56
Central Office	\$0	\$-178	\$-178	\$-178
Services	\$0	\$-782	\$-782	\$-782
Net Benefits	\$11,754	\$13,843	\$16	\$2,089

* Significantly different from zero at the 90 percent confidence level.

** Significantly different from zero at the 95 percent confidence level.

*** Significantly different from zero at the 99 percent confidence level.

SOURCE: Benus et al. (1995)

NOTE: Impact estimates regression-adjusted with observable variables by ordinary least squares.

Table 8. Self-Employment Assistance Program Data, 1996-2005

Year	SEA Referrals from WPRS	Number Entering SEA
1995	661	652
1996	2,654	2,217
1997	2,591	3,799
1998	834	2,288
1999	1,502	2,910
2000	2,761	2,517
2001	2,608	7,288
2002	5,247	3,170
2003	913	1,342
2004	1,317	1,989

NOTE: SEA WPRS referral total was adjusted to remove an erroneous entry by Oklahoma of 1,317 referrals.

SOURCE: Unemployment Insurance data base. For Number Entering SEA, UI and SEA Weeks Compensated, and SEA Benefits Paid, data is from ETA 5159 report. SEA Referrals from WPRS data is from ETA 9049 report.

Table 9. Impacts of Community College Course Credits on Annual Earnings (dollars)

Group	Males	Females
Total	\$24	\$20
Demographic Group		
Minority	\$8	\$20
Age 22-26	\$32	\$36
Less than 6 years job tenure	\$16	\$12
More than high school diploma	\$28	\$28
Type of Course		
High-return courses *	\$64	\$68
Low-return courses **	-\$36	-\$12

NOTE: This table shows the average impact of a completed community college course credit on wage and salary earnings three years after completing the last community college course.

* High-return courses: Either vocational or academic courses oriented toward mathematics or science.

** Low-return courses: All other courses including less quantitative vocational courses or humanities and social science courses.

Source: Jacobson, Lalonde, and Sullivan (2004)