HOW EFFECTIVE ARE WORKFORCE DEVELOPMENT PROGRAMS? IMPLICATIONS FOR U.S. WORKFORCE POLICIES

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INTRODUCTION

Over the last decade, policymakers and academics of various leanings, as well as the general public, seem to have accepted as conventional wisdom that workforce development efforts in this country are a failure, or at best, that they produce only rare or modest successes. The following statements are indicative:

> "We simply lack any evidence that workforce development programs work."
>
> —Former Assistant Secretary of Labor for Employment and Training Emily Stover DeRocco, quoted in *The Wall Street Journal* (July 2005)

> "[W]hile training may be an effective strategy for modestly improving the earnings of a small number of workers, even the best-run training programs cannot provide a stepping-stone out of poverty for any significant numbers of Americans."
>
> —Gordon Lafer, *The Job Training Charade* (2002, p. 90)

> "The best available evidence indicates that public training programs are an inefficient transfer mechanism and an inefficient investment policy for low-skilled adult workers."
>
> —Nobel Laureate James J. Heckman, "Human Capital Policy" (2003, p. 183)

> "Training was fruitless. I'm not seeing the benefits. Training for what? No one's hiring."
>
> —Workforce development program participant, quoted in *The New York Times* (July 18, 2010)

Recent presidential administrations and the U.S. Congress appear to have embraced the conventional view that workforce development programs are ineffective and may never have worked well, and that they waste taxpayer money and would be better left to market forces. Federal appropriations for the Workforce Investment Act, adult education and related programs funded under Function 504 of the federal budget have declined markedly over the past few decades in real terms, and particularly so in recent fiscal years. For example, in fiscal year (FY) 2007, total U.S. federal appropriations for Workforce Investment Act (WIA) programs—youth employment, adult job training, dislocated worker assistance, Job Corps and other national activities—were $4.4 billion, down 18 percent from FY 2005. While federal funding for workforce development increased dramatically in FYs 2009-2010 following passage of the American Reinvestment and Recovery Act of 2009 (ARRA), appropriations for FY2011 and beyond are expected to return to pre-ARRA levels or below. In fact, Congress appears set to cut federal funding for WIA by about 75 percent in FY2012.

The view that workforce development efforts are ineffective comes in part from an incomplete and sometimes misguided reading of the evidence, and also from misinformation and misunderstandings that we think can largely be rebutted through a careful review of how we measure program impacts and performance and the findings in the literature on workforce development program effectiveness. In this paper, we make the following key arguments:

- Measurement of workforce development policy impacts has, in many cases, been too narrow, particularly in comparison with evaluations of other interventions that consider a broader range of effects and impacts on society as a whole.
- Reviews of program performance and impacts have given too little attention to adequate follow-up periods for evaluation and to findings showing that some program impacts change over time and/or take longer to mature.
- Evaluations of workforce development interventions have, at times, made unfair comparisons or interpretations of information on the effectiveness of program services, failing to appropriately account for heterogeneity in services and services received by comparison or control group members.
- Numerous workforce development studies have found positive impacts of these programs for adults and returns that are fairly remarkable given the magnitude of workforce development spending, but these findings have been mostly neglected in policy discussions and the press.

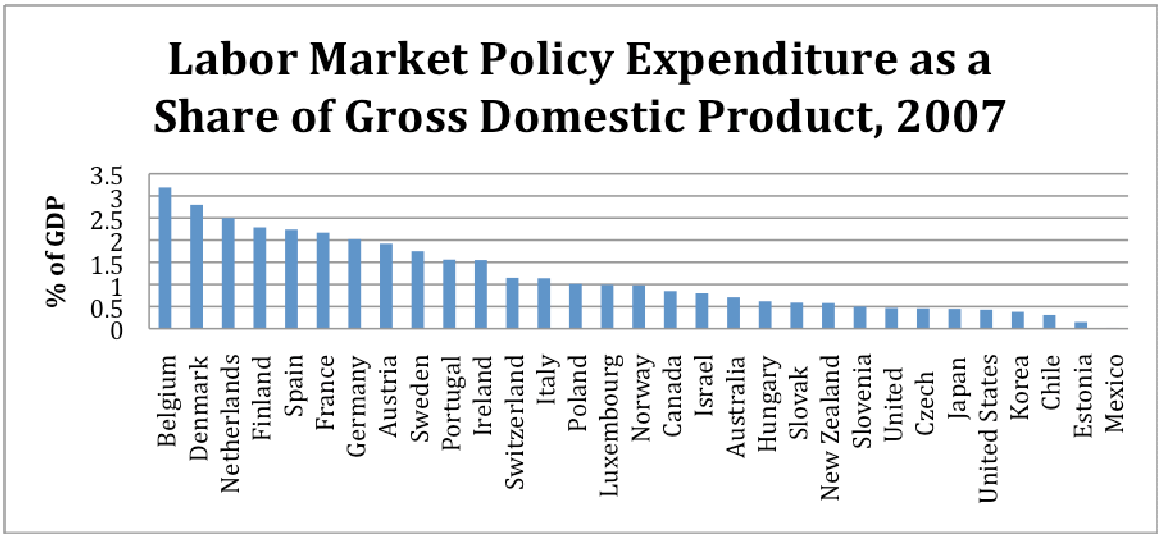
We begin by first describing the programs that encompass workforce development. We then examine the evidence and conventional wisdom on the effectiveness of workforce development programs, elaborating on the arguments outlined above that challenge the conventional wisdom and the approaches that have been applied in measuring the effectiveness of workforce development interventions. We conclude by summarizing the arguments and evidence in support of an alternative view that counters the conventional wisdom and finds that workforce development works.

WORKFORCE DEVELOPMENT, BROADLY DEFINED

If you ask education and training policy professionals what encompasses workforce development, most will refer to the laundry list of programs funded under Function 504 of the federal budget, including those under the Workforce Investment Act (WIA), Employment Services under the Wagner-Peyser Act, adult basic education (ABE), apprenticeship and career and technical education (CTE) under the Perkins Act, among others. They might also add a few more that include employment as a goal, such as Food Stamp employment and training programs, work programs for recipients of Temporary Assistance for Needy Families (TANF), and customized training as well. Yet, together these programs have accounted for only about 2 percent of the federal budget and less than 0.5 percent of Gross Domestic Product in recent decades, shares that are well below most of our western European competitors (O'Leary et al. 2004, p. 14), as shown in Figure 1 that focuses on Organization for Economic Cooperation and Development countries. The United States ranks at the low end with Japan, Korea, Chile, Estonia and Mexico, while Denmark, Belgium, the Netherlands and Finland stand at the high end of the distribution, devoting six to seven times greater shares of GDP to labor market policy expenditures over time (e.g., Auer et al., 2008 and Martin, 2000). The reasons for such differences in policy emphasis among these nations are varied, but the United States is

clearly within the group of countries that have pursued a form of *liberal, market-driven* labor market management system.[1]

Figure 1. Labor Market Policy Expenditure as a Share of Gross Domestic Product in OECD Countries, 2007



Notes: Source is OECD Statistics. We use statistics from 2007, as the infusion of ARRA funds in 2008 reflects a temporary policy change in the U.S.

Osterman (2007) outlined a comprehensive framework for the nation's publicly funded workforce development system, positing several key functions that begin with improving skill levels—its "core" function—and job matching to better connect workers and employers in the labor market. He also envisions a series of important demand-side functions, which haven't always been seen as the purview of public workforce programs and institutions, namely working directly with employers and their associations to help them become more economically competitive and to counteract the longstanding bias in which training and career opportunities are disproportionately provided to better educated, higher skilled workers. Such an approach comes closer to what Western European countries refer to as "active labor market policy." The six main "buckets" of the system for less skilled adults and dislocated workers, according to Osterman (2007, pp. 125ff.), include (with FY 2005 budget amounts shown in parentheses):[2]

- WIA programs geared primarily toward poor adults ($1.5 B);

[1] Abrahart and Verme (2001) discuss three different labor market policy types, including in addition to this American model, the European or liberal, public-interest mediating and the Japanese or enterprise-centered, industry-driven models. King (forthcoming) explores differences between the US and Japanese models.

[2] Amounts derived mainly from the President's FY 2006 budget request and related documents. Funding in these areas spiked considerably with the infusion of ARRA funds, but have quickly returned to pre-ARRA levels or lower amounts.

- WIA and Trade Adjustment Assistance programs for dislocated workers ($1.6 B);
- Adult basic education (ABE) programs funded by federal and state governments ($570 M in federal grants to states; totaling around $2.1 B including state reported matching funds);
- Community and technical college programs ($1.2 B, federal Perkins funding; totaling $12 B -$20 B including state and local contributions);[3] overall community and technical college spending on related programs is likely to be many times greater;
- State-funded programs providing training to incumbent workers ($270 M);[4] and
- The Employment Service or one-stop system supported largely by WIA fulfills the job-matching function ($0.9 B).

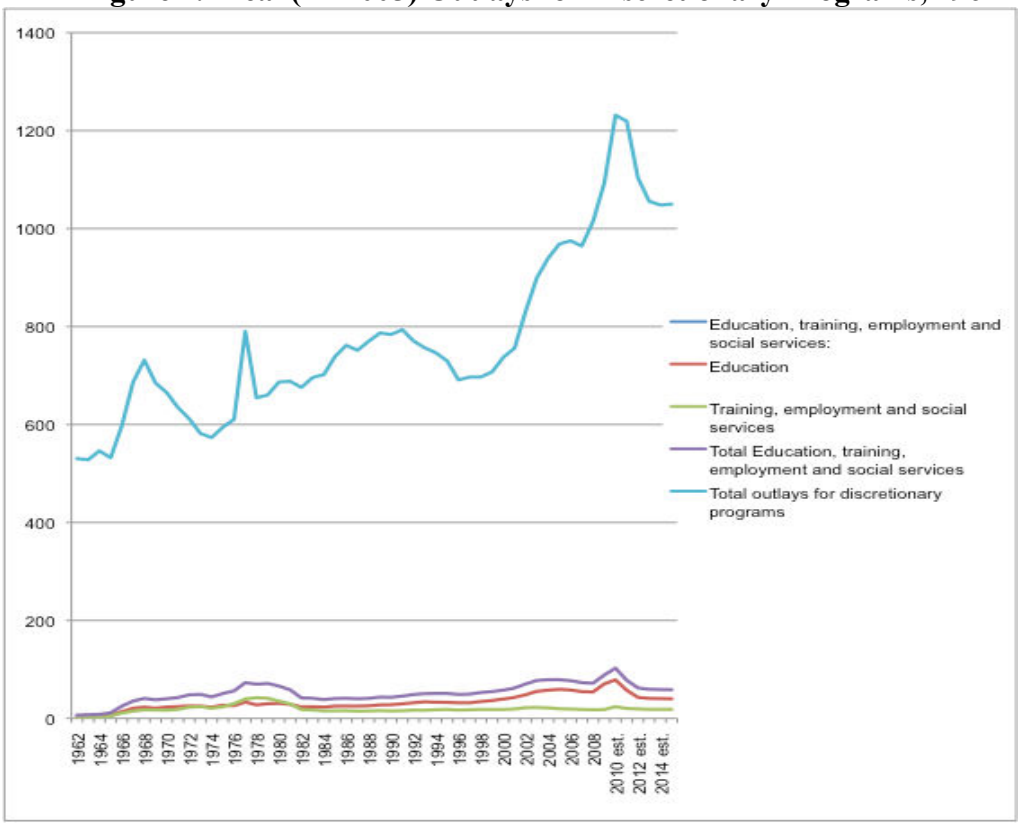
The FY 2011 budget amounts for these training buckets indicate that funding for WIA adult programs has been dramatically cut, while funding for programs for dislocated workers has close to doubled. Regrettably, this shift is contrary to the most recent evidence on program impacts that we discuss in greater depth below, which suggests that WIA funding for adult disadvantaged workers generates substantial impacts, while impacts for dislocated workers are negligible.

To fully characterize the broader system, however, we must add employer-based education, training and career development efforts to these six public "buckets," as well as apprenticeship programs, which were funded by the U.S. Department of Labor (USDOL) at only $21 M in FY 2005. The American Society for Training and Development estimates that employer spending on formal workplace learning—on such activities as on-the-job training (OJT), customized training, work-based learning, and tuition assistance—exceeded $109 billion in 2005, about three-quarters of which was spent on *internal* workplace learning (Rivera and Paradise 2007). Clearly, U.S. employers are responsible for the lion's share of workforce development activity and associated spending, although employer-based efforts disproportionately favor better-educated and skilled workers (Lerman et al. 2004).

The following figures show trends in real federal outlays for discretionary education, employment and training programs since 1962. Figure 2 displays the trend in overall outlays in real (FY2005) dollars, indicating that while overall discretionary outlays increased substantially in real terms through FY 2010, the increase for human investments was far more modest. Figure 3 shows real education, employment and training outlays on a per-capita (16+ years of age and over) basis. Real outlays per-capital peaked in the late 1970s at a little over $450, fell to less than $250 for the 1980s, and then began to creep back up slowly in the 1990s before increasing more sharply in the early 2000s. Even with the recent ARRA-driven boost, real per-capita federal funding for human investments remained below the peak levels of the late 1970s, despite

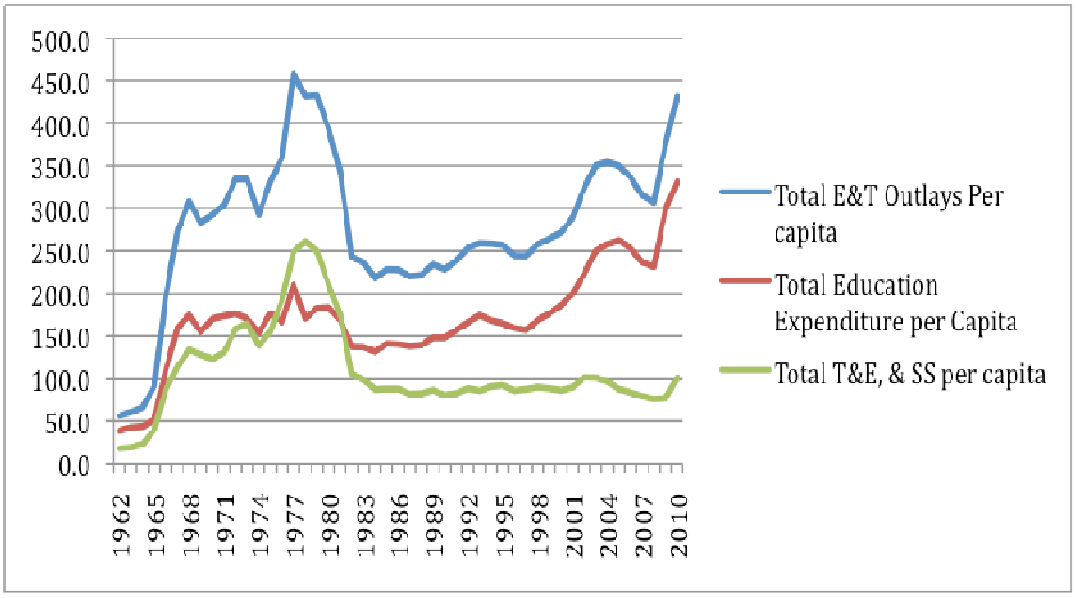
[3] Federal funds historically have accounted for only about 6-10% of total Perkins spending.
[4] State UI-funded training programs, their key features and the literature on their effectiveness are reviewed in King and Smith (2007).

Figure 2. Real (FY2005) Outlays for Discretionary Programs, 1962-2011



Source: Budget for the United States for Fiscal Year 2011, Historical Tables.

Figure 3. Real (FY2005) Outlays on Education, Employment and Training Per-Capita, 1962-2010



Source: Budget for the United States for Fiscal Year 2011, Historical Tables.

the fact that workers are encountering far more difficult and dynamic labor market conditions presently.

MEASURING WORKFORCE DEVELOPMENT EFFECTIVENESS

The U.S. workforce development system is one of the most studied to date, with what Klerman (2005, p. 347) describes as one of the "most mature implementations of performance-based management." Because workforce development has the best data and the longest-running performance measurement system of any federal program, policymakers have looked to its results not only to guide changes in employment and training programs, but to also inform the design and operation of performance measurement systems in other government programs.

The first serious evaluations of education and training programs were launched in the 1960s, and contributed substantially to what we now view as the field of program evaluation. In addition, federal law mandated performance standards for job training programs in the 1970s, nearly a decade before the Congress began calling for them to be applied to other programs (see Barnow and Smith 2004). Systematic data collection at all levels necessarily followed. The randomized experimental evaluation of the Job Training Partnership Act (JTPA) program, initiated in the mid-1980s, not only produced important information on JTPA program impacts, but also information for assessing the performance of the performance measurement systems in approximating program impacts (Bloom et al., 1993; Heckman and Smith, 1995). In effect, workforce development has presented a relatively easy target for critics precisely *because* it has been more transparent and systematic in its approach to measuring the effectiveness of its efforts.

Outcomes and impacts measured in workforce development program evaluations

In the performance measurement system and in experimental and nonexperimental evaluations of workforce development programs, the outcome and impact measures used have been appropriately, but narrowly, focused primarily on employment and earnings. Table 1 shows 17 performance measures used in the WIA and JTPA programs (with definitions corresponding to the current measures). Ten of these 17 measures focus exclusively on employment or earnings outcomes (i.e., entered employment rates, retention rates, average earnings or earnings changes), while three others measure both employment and credentials attained. Reflecting USDOL objectives and the emphasis of these federal performance measures, most evaluations of workforce development program effectiveness have also focused almost exclusively on employment and earnings outcomes. King's (2004) summary of some of the evidence on program effectiveness for adults, dislocated workers and other program participants underscores this point:

- Impacts for women have generally tended to be larger than those for men, resulting from a broader range of strategies and leading to large rates of return. Mean per-participant earnings impacts for women in the National JTPA Study ranged from $533 annually for Classroom Training to nearly $1,500 annually for OJT/Job Search Assistance (expressed in 2001 dollars). The mean per-participant earnings impact overall for adult women in JTPA was $1,236 annually.

Estimated per-participant earnings impacts for adult women in the Minority Female Single-Parent Demonstration were also around $1,000 annually.

- Per-participant earnings impacts for welfare women participating in training programs were larger: $1,685 annually (National Supported Work Demonstration), $2,380 annually (Homemaker-Home Health Aide Demonstration), and $3,580 annually (National JTPA Study).
- Earnings impacts for adult men in the National JTPA Study were similar in size to those for adult women when measured on a per-participant basis: $1,329 for Classroom Training, $1,641 for OJT/JSA, and $1,249 overall.
- Hollenbeck and Huang (2006) reported statistically significant 3-year participant impacts in Washington State community and technical college training programs that were larger than the National JTPA Study impacts: job preparatory programs increased employment rates by 6.7 percentage points and average earnings by $1,008/quarter (in 2005:Q1 dollars), and worker retraining programs increased employment by 4.6 percentage points and earnings by $298/quarter.

In addition, the most recent, nonexperimental evaluation of the WIA program (Heinrich et al., 2008) likewise reflects the USDOL emphasis on employment and earnings outcomes, measured in this study as the difference in average quarterly earnings or employment attributable to WIA program participation for those who participated (relative to comparison groups of workers applying for unemployment insurance benefits or who participated in the U.S. Employment Service). Using data from 12 states and approximately 160,000 WIA participants, the study authors found an average increment in earnings for women of nearly $2400 per year (about 26% of average earnings), and an impact for men or about $1700, or 15 percent of average earnings. These results parallel the impact findings from an earlier nonexperimental WIA evaluation conducted for USDOL as part of the Adminstrative Data Research and Evaluation (ADARE) Consortium in seven states by Hollenbeck et al. (2005).[5] Like Hollenbeck and Huang, these studies reported appreciably lower earnings gains for dislocated workers.

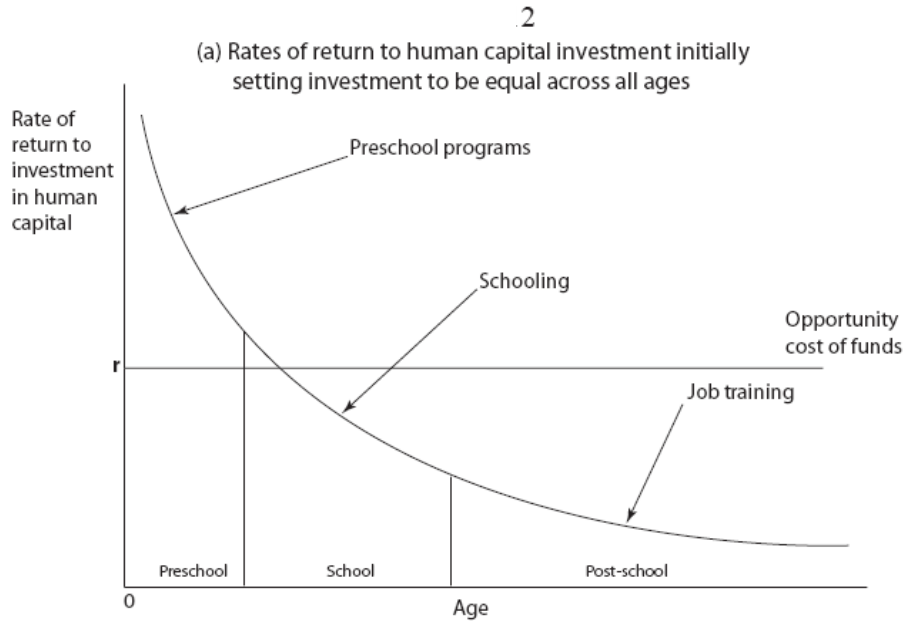
Recent evaluations of training programs that are focused on particular sectors of the labor market have found larger impacts on and returns from employment and earnings than have traditional workforce programs. An experimental evaluation of a number of sectoral training programs conducted by researchers at Public/Private Ventures and the Aspen Institute found that "participants in sector-focused training earned 18 percent—about $4,500—more than controls over the 24-month study period" and fully 29 percent more during the second half of the period (Maguire et al., 2010).[6] A non-experimental evaluation of local workforce investments in Austin (TX) including Capital IDEA, which trains economically disadvantaged, low-skilled residents for careers in healthcare and other growth sectors, found large statistically significant earnings gains of around $3,000

[5] The seven states were Florida, Georgia, Illinois, Maryland, Missouri, Texas and Washington.
[6] The study, funded by the Charles and Stewart Mott Foundation, focused on three well established sectoral training programs: Jewish Vocational Services (Boston), Per Scholas (the Bronx, New York City), and the Wisconsin Regional Training Partnership (Milwaukee).

per quarter that still appeared to be increasing seven years after program entry (Smith et al., 2011). An exploratory return-on-investment (ROI) analysis of Captial IDEA programs based on these impacts found over the first ten years each dollar invested returned $1.65 to taxpayers for an annual rate of return of around 9 percent; returns to society as a whole were even larger (Smith and King, 2011).

Based on this abbreviated summary of evidence on workforce development program impacts, one might take away a fairly positive view of the effectiveness of these programs, particularly for disadvantaged adults. Still, the debate concerning how to allocate limited resources for investing in education and skills training has been decidedly negative in its appraisal of the role and effectiveness of workforce development programs. One of the most well-known critics in this debate is Nobel Prize-winning economist James J. Heckman, who sketched the following graph (Figure 4) to illustrate his argument that spending on public training programs is an inefficient use of public resources relative to investments in individuals at younger ages (Heckman, 2000).[7] The horizontal line in this graph shows the opportunity cost of funds and suggests that, contrary to the evidence described above, training programs targeting adults yield returns that are substantially below the opportunity costs of funds invested in them.

Figure 4: Returns to Human Capital Investments (from Heckman, 2000)



We argue, alternatively, that a closer look at the nature of the evidence on payoffs to human capital investments contradicts the above comparison of returns across these groups/programs.

[7] Source: Heckman, James J. (2005). "Inequality in America: What Role for Human Capital Policies?" *Focus* 23(3): pp. 1-10.

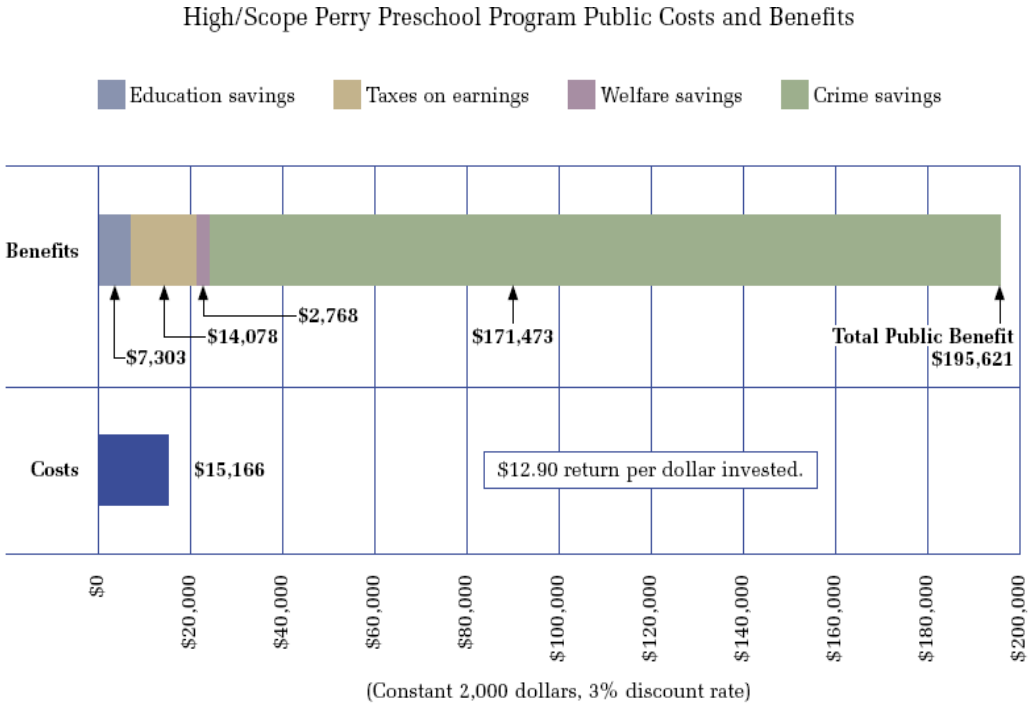
One of the most widely cited studies on the effectiveness of early interventions is that of the Perry Preschool program, which enrolled disadvantaged children in an early education program at a public elementary school in Michigan in the 1960s. The experimental evaluation involved only 123 children, 58 of whom were randomly assigned to participate in the program. Heckman et al. (2010) published a re-analysis of the data generated in this experimental evaluation, correcting for deficiencies that included a flawed randomization protocol, missing data and problems in assigning monetary values to non-market outcomes such as crime. Although their re-analysis produced lower estimates of the rate of return than prior studies (Barnett, 1996; Rolnick and Grunewald, 2003; Belfield et al., 2006), crime reduction (i.e., reductions in victim, criminal justice system and incarceration costs) was still the major factor contributing to the estimated positive net benefits, which is likewise true for related research on the impacts of Head Start (Garces et al., 2002).[8]

Other "social responsibility" outcomes measured in the Perry Preschool evaluation included marital status and pregnancy (out-of-wedlock births), along with a wide range of scholastic and socioeconomic status/success measures: special education participation, grade point average, grade retention, test scores, graduation from high school, receipt of public assistance (e.g.., welfare, food stamps and other cash transfers), home and automobile ownership, earnings and household income, and tax revenues. In cost-benefit analyses of the Perry Preschool program (Barnett, 1996; Belfield et al., 2006), it has been typical to extrapolate measures of earnings to calculate lifetime earnings gains from participation, in addition to the lifetime tax contributions and reductions in public assistance associated with them, something that has rarely been done in the evaluation of workforce development programs.[9] Looking at the tables produced by Belfield et al. (pp. 180-81) that identify program benefits by category (e.g., education, earnings, crime, welfare, etc.), it is apparent that if benefits were only measured by earnings, conclusions about the program's cost-effectiveness would be very different. Indeed, they and Schweinhart et al. (2005) likewise find that reductions in the costs of crime have by far the largest impact (88% of the estimated public returns); Figure 5 from Schweinhart et al. (2005) shows unambiguously how accounting for crime savings drives the high estimated rates of return for the High/Scope Perry Preschool program.

[8] The estimated benefits of crime reduction were driven largely by the valuation of life calculations associated with four murders (three in the control group).

[9] Whether such long-term ("lifetime") benefit impacts should be attributed to early childhood or workforce interventions is a question that is subject to some debate. Many confounding factors occur between such investments in the early years and earnings much later in life. The point here is that evaluations of early childhood investments routinely incorporate such impacts while evaluations of workforce investments rarely do.

Figure 5: Public Benefits of the High/Scope Perry Preschool by Category (from Schweinhart et al., 2005)



Conversely, benefits associated with crime reduction have not been estimated for any of the larger-scale evaluations of adult employment and training programs with which the Perry Preschool program and other early childhood interventions are compared.[10] Interestingly, the National JTPA Study examined program impacts on earnings for the subgroup of youth with a prior arrest, but the potential effects of the program in reducing criminal activity or youth delinquency were not discussed anywhere in the 467-page final report (Bloom et al., 1993).

We have also given too little attention to the contributions of human capital investments in adults to increased productivity and profitability for employers, as well as economic growth over time. Examining the 3.2 percent annual rate of growth of potential national income in the U.S. from 1929 to 1982, Edward Denison (1985) estimated that increases in worker education accounted for 13 percent of the increase. Focusing on the rate of growth of potential national income per capita over the same period, Denison concluded that education's contribution was twice as large, at 26 percent. And based on a review of the recent literature, Griliches (1997, p. S337) suggested that education and human capital investments may have contributed to as much as one-third of the increased growth

[10] A notable exception was the evaluation of a demonstration program, the Supported Work program (MDRC, 1980), that offered the hard-to-employ (e.g., welfare recipients, ex-addicts, ex-offenders, high school dropouts) work experience combined with other work supports. The broader range of potential program impacts considered, in addition to employment and earnings, included: reductions in public assistance payments, housing subsidies and Medicaid, taxes paid and reductions in the costs of criminal and other antisocial behavior.

in the U.S., albeit its *measured* contribution may have dropped recently largely due to the increased use of educated labor in sectors like government and services generally where output is more difficult to measure.

In general, individual education and training participants are rarely the sole beneficiaries of workforce development investments, and failing to account for these other potential benefits to employers, taxpayers and society as a whole shortchanges our valuation of these programs and may very well explain some part of the large (suggested) differences in the returns to early education vs. the returns to human capital investments estimated for adult programs. As noted above, when benefits to employers and society are made part of the measurement scheme, returns appear quite robust (e.g., King et al., 2008 and Smith and King, 2011).

Short-term vs. longer-term measurement of program impacts

Although one is hard-pressed to argue the point that spending on young children has a longer horizon over which to produce benefits than spending on adults, another flaw in the comparisons underlying the returns to human capital investment graph shown above is the typical time period over which outcomes are examined. For various reasons, including both resource constraints and policymakers' demands for timely results, the impacts of workforce development programs have frequently been measured over timeframes that are generally too short to capture the results of more intensive skill investments, which may take several years to realize or mature. The latest impact estimates of the Perry Preschool program cover a follow-up period spanning more than three decades, while it is primarily in the more recent analyses of workforce development program impacts that longer timeframes of 4-10 years have been used.

In a meta-analysis of 199 program impact estimates from 97 active labor market programs worldwide, Card et al. (2009) observed that more intensive (or longer-term) job training programs tend to have negative impacts on employment or earnings in the first year, presumably reflecting "lock-in" effects. However, Card et al. also show, along with a growing number of other studies, that impacts tend to turn positive in the second or third years (Dyke et al., 2006; Hotz et al., 2006; Heinrich et al., 2008). In the recent nonexperimental evaluation of WIA program impacts, Heinrich et al. (2008) found lower initial earnings among adult program participants who participated in training services, but also showed patterns of increasing impacts over the four years following program entry, with females ultimately registering total earnings gains of over $800 per quarter (within ten quarters), and gains of $500-$600 per quarter for males (see Figures 6 and 7). The random assignment evaluation of the JTPA program produced similar results, showing that program enrollees experienced minimal incremental effects in the two quarters after random assignment or program entry, but the increment in quarterly earnings increased to $300-350 (2006 dollars) by the tenth quarter (Orr et al., 1996, p. 107). In addition, when results of human capital development, skills-intensive (vs. work-first oriented) strategies have been compared over longer timeframes—some as long as 7-9 years for Supported Work, California's Greater Avenues for Independence, JTPA and some sectorally focused programs—skills training has generally proved more effective

Figure 6
Adult Program Treatment Effect on Quarterly Earnings for Females, WIA Training versus Comparison Group

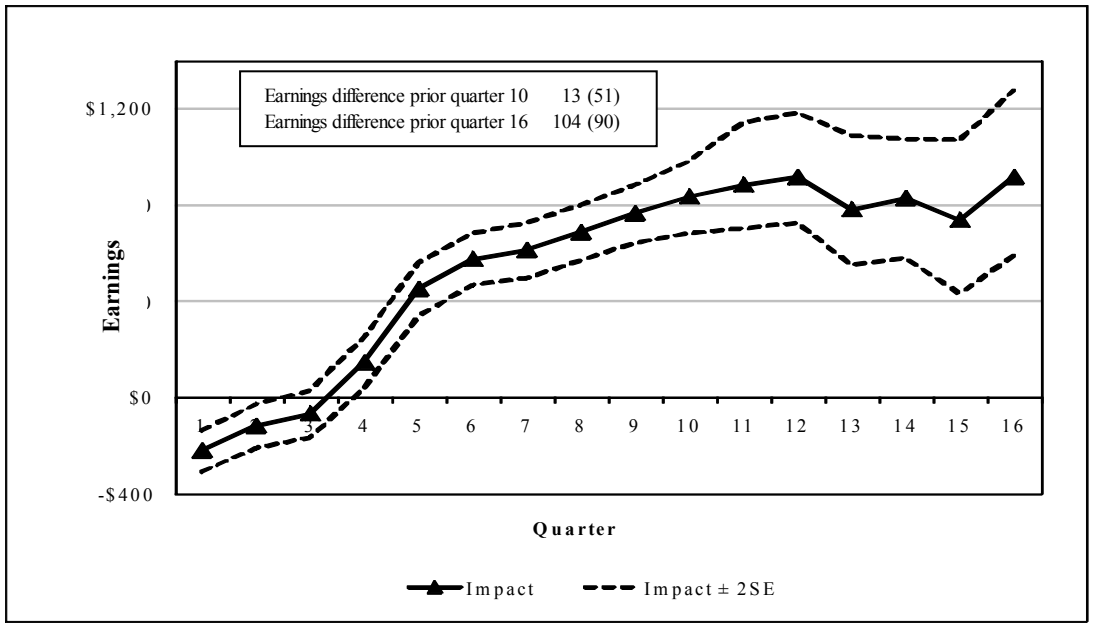
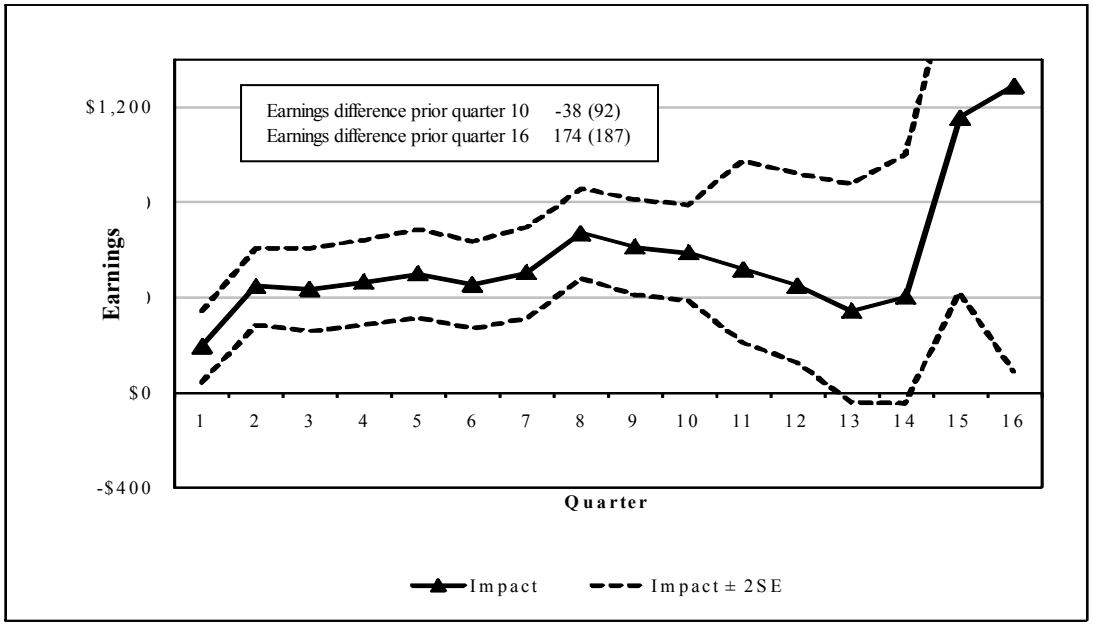


Figure 7
Adult Program Treatment Effect on Quarterly Earnings for Males, WIA Training versus Comparison Group



Source: Carolyn J. Heinrich, Peter Mueser and Kenneth R. Troske. Workforce Investment Act Non-Experimental Net Impact Evaluation. Final Report to U.S. Department of Labor, December, 2008.

than low-intensity workforce services and, for many groups, including low-skilled welfare recipients, the impacts showed little, if any, "decay" (e.g., Hotz et al. 2006; Couch 1992; King 2004; King et al., 2009; and Smith et al. 2011).

While programs for in-school youth and youth training programs have also been characterized in the Heckman graph as having comparatively low returns, a recent review of the evidence base by Heinrich and Holzer (2011) suggests that program effectiveness for youth is also highly correlated with the frequency (duration) and intensity with which they engage (in academic and/or non-academic activities) in these programs. For example, an eight-year, experimental evaluation (Kemple and Willner, 2008) of the Career Academies program—which organized youth into small, intensive learning communities that combined academic and career and technical curricula and established partnerships with local employers to provide career awareness and work-based learning opportunities for at-risk students—showed significant reductions in dropping out (from high school) and higher monthly earnings, months worked, hours worked per week, and hourly wages than control youth (Kemple and Willner 2008). These youth realized an 11 percent increase in monthly earnings over the control (non-Academy) group, or an additional $2,088 in earnings per year (in 2006 dollars); for males, the increase was 17 percent. The Career Academies evaluation is also relatively unique in its examination of a much wider range of potential program impacts than a typical youth program evaluation, including marital status, parenting status, living arrangements, public assistance receipt, access to health insurance, voter registration, and involvement with the criminal justice system.

The counterfactual in workforce development program evaluations

Experimental evaluations with random assignment to treatment and control status have long been viewed as the "gold standard" for evaluating the effectiveness of workforce development (and other) interventions. However, from both theory and experience, we know that while random assignment reduces the plausibility of alternative explanations for observed effects, the only threat to internal validity that randomization typically prevents from occurring is selection bias. There are many threats to validity that random assignment will not resolve, and in fact, as implemented, it has frequently led to overly conservative estimates of workforce development program impacts.

First, the typical "counterfactual" used in workforce development program evaluations is frequently misunderstood to be a "pure control" or "no-services" group, whereas, most often, the control group is comprised of at least some individuals who are receiving services available elsewhere in the community. In fact, control group members often receive services very similar to those received by the treatment group. This has also been noted (typically in the technical appendices) of the National JTPA Study (Orr et al. 1997), the National Evaluation of Welfare-to-Work Strategies, or NEWWS (Hamilton 2002), and other such reports. Furthermore, the recent growth of online training options has added to the challenges of accounting for services received by control or comparison group members (King 2004).

Second, the typical workforce development program evaluation focuses on employment, earnings and related impacts associated with *assignment* to treatment, not *receipt* of services.[11] Evaluators frequently prefer the "intent to treat" design because it does not require treatment to be fully implemented for internal validity. However, as the shares of assignees actually receiving the intended treatment are quite low in workforce development programs, impact estimates are often significantly diluted by large numbers of untreated in the treatment group. This was true in the National JTPA Study, but more troubling were its implications in the NEWWS evaluation, the well-known "test" of the relative efficacy of labor force attachment (LFA, i.e., "work-first") versus human capital development (HCD) strategies, in which LFA was generally judged to outperform HCD (Hamilton 2002). One of the reasons for the far larger impacts generated in the Portland site was that it was the only HCD site to succeed in enrolling a substantial share of participants in vocational training, not just remedial/basic education (King 2004). Over five years, only 28 percent of participants in HCD program sites participated in any vocational training, compared to 40 percent participating in adult education (Hamilton 2002, p. 17). The results of the NEWWS evaluation notably influenced a shift in orientation to work-first (and away from training) services in workforce development as well as public welfare programs.

While experimental evaluations with random assignment to treatment and control status are still generally preferred to quasi-experimental ones, the recent meta-analysis of 31 voluntary government-funded training programs by Greenberg et al. (2006) concluded that, when conducted properly, experimental and nonexperimental studies produced similar results about program effectiveness, with minimal gains in precision from experiments. Card et al. (2009) likewise found similar impact estimates in experimental and non-experimental studies in their meta-analysis of 199 impact estimates from 97 active labor market policies, suggesting research designs used in recent non-experimental evaluations are generally unbiased. By design, quasi-experiments are more likely to estimate the impact of the "treatment on the treated" and therefore circumvent the problems posed by low take-up in many intent-to-treat evaluations (as all individuals characterized as "treatment" group members should have received the intended intervention). The key, of course, is that whether an experimental or nonexperimental evaluation, it is essential to adequately measure treatment (type, length and intensity) and characterize what is being measured—including (to the extent possible) services received by control or comparison group members—and to identify any problems in or failure of implementation that might compromise efforts to accurately estimate effects of the intervention.

COUNTERING THE CONVENTIONAL WISDOM

Above, we presented findings and summaries of findings on workforce development program effectiveness that show many positive, statistically significant impacts of public employment and training programs on participant earnings (the measure most commonly used in these evaluations). These findings are fairly remarkable given the magnitude of

[11] Kreuger (2003, p. 52) refers to the former as the "intent-to-treat" effect.

workforce development spending and the narrow approach used in measuring impacts, and yet they have generated very little positive press and have been largely neglected in policy discussions.

There has at least been some debate over what we can reasonably expect from investments in workforce education and training, particularly given that they are primarily directed toward those with substantial barriers to employment. In his classic 1964 book, *Human Capital*, Nobel laureate Gary Becker reported that the money rate of return to college education for white males was "between 11 and 13 per cent, with higher rates on a high-school education, and still higher rates on an elementary-school education" (1993, p. 7). La Londe (1997) indicated that a year of education is associated with a return of around 6%, while others have suggested that training might be expected to yield upwards of a 10% return (e.g., Kreuger 2003). Benchmarks worth noting are the average rates of return that Fortune 500 companies have historically earned—a bit less than 15% annually, with the 2007 figure at 9.5%—and the historical real rate of return on stocks of 6.3 percent (Kreuger 2003, p. 23).

Should critics expect workforce development programs to produce even higher rates of return with the modest short-term investments they typically make? The latest impact evaluation of the WIA program, as we indicated above, found an average increment in earnings for women that represented 26 percent of average earnings, and an impact for men that constituted 15 percent of average earnings. The Portland NEWWS site, which offered a mix of LFA and skills acquisition and encouraged participants to be selective in their job search, increased participant earnings by 25 percent over five years. Hollenbeck and Huang (2006) estimated earnings impacts of community and technical college training programs that were on the order of 20 percent. Based on a rigorous meta-analysis of 27 studies of the relationship between the labor market returns to postsecondary education in nine countries, Ashenfelter et al. (1999) estimated returns to a year of postsecondary education in the U.S. to be between 6.8 and 8.1 percent. And Carneiro and Heckman (2003, p. 182) found that upper-bound estimates of the returns to private sector investments in training for marginal entrants ranged from 16-26 percent.

Furthermore, should we not consider the potential contributions of education and training to productivity and economic growth? Barron et al. (1997) analyzed multiple employer data sets maintained by the Upjohn Institute and found that "training results in substantial productivity growth: a 10 percent increase in training raises productivity by 2 percent during the first three months of employment" (p. 185). In addition, they concluded as follows (p. 186):

> "On-the-job training also increases wage growth. Whether looking at wage growth in the first three months or first two years of employment, the data indicate significant increases in wages associated with training. These findings confirm the predicted effects of on-the-job training on wage and productivity growth. … A 10 percent increase in training results in only a 0.2 percent growth in wages, or about one-tenth the magnitude of the impact of training on productivity growth."

This suggests that employers likely garner most—around 90 percent—of the gains from investments in on-the-job training (OJT) in the form of increased productivity (and presumably, higher profits). This makes sense in that most employer-supported OJT tends to be firm-specific training, but Barron et al. also noted that employers invest substantially in general training as well.

A ten-year study of employee and employer dynamics in five industries—financial services, trucking, semiconductors, software production and retail food—by Brown et al. (2006), one of the first major analyses of the emerging Longitudinal Employer Household Dynamics database created by the Bureau of the Census, concluded (p. 54):

> "The basic message here is that businesses with higher-quality workforces and lower churning are more likely to survive. This message does not imply that one-size-fits-all or that these factors are perfect predictors of success or failure."

Brown et al. found that the relationship between worker quality and firm survival over the 10-year period was more pronounced in the traditional industries, i.e., financial services, trucking, and retail food, than in the others. As one of the authors articulated, high-road strategies involving investments in workers' skills are a proven survival strategy for many employers.[12]

Overall, we conclude that the weight of evidence suggests that workforce development—broadly considered, and when measured appropriately—truly does work.

- A wide range of workforce development strategies, public and private, is effective for adult participants, producing returns on a par with those for many financial investments.
- Workforce investments also produce widespread benefits for employers and society as a whole, likely leading to sustained increases in productivity and economic growth.
- Returns from these investments are particularly remarkable when the magnitude and intensity of workforce investments is considered relative to the size and complexity of the barriers they are attempting to address.

Public spending on workforce development in the U.S. has long been a small fraction of that spent by other developed countries, with some Nordic countries such as Denmark and Sweden spending 6-10 times the fraction of their GDP as the U.S. (Auer et al., 2009 and Martin, 2000). We suspect that the less-than-favorable public perspective on the effectiveness of these programs in the U.S. is a contributing factor to the relatively feeble (and prior to the injection of stimulus funds, declining) spending on workforce development programs. The WIA experimental impact evaluation that is underway has the potential to generate the most credible and comprehensive measures of the effectiveness of workforce development programs to date, improving measures of treatment and taking into account a broader range of individual, employer and societal

[12] Presentation by Dr. Julia Lane at the National Governors Association's Annual Workforce Policy Conference in Washington, D.C., December 10, 2007.

impacts over a sufficiently long follow-up period, as well as undertaking a careful accounting of costs to generate benefit-to-cost ratios to inform future policy decision making. Although it will be some time before results are released, our review of the current evidence base suggests it would be reasonable to expect that the evaluation will confirm Krueger's (2003, p. 24) assertion that:

> "[I]nvestment in human capital for the disadvantaged seems to yield as great a return as investment in the equity market."

IMPLICATIONS FOR NATIONAL WORKFORCE POLICY

What are the implications of the evidence that workforce program investments are generally effective and yield returns to participants, taxpayers and society for workforce policy? Although the Senate succeeded in passing a bill this year, the House has yet to act to reauthorize WIA, the nation's main development workforce program and has proposed major cuts in its appropriations. WIA has been operating under a Continuing Resolution since 2003, indicating little broad Congressional interest in or support for workforce programs, although postsecondary education is receiving more attention. There is also little apparent support for a "skills agenda." ARRA's emphasis on training in general (WIA adults and dislocated workers) and long-term training in particular (TAA), is likely to be fleeting. While some states (e.g., Texas and especially Washington) took steps to mandate and/or incentivize greater investments in training by their local boards (Hobbie et al., 2011), it is widely expected that most will revert to emphasizing "light-touch" labor force attachment strategies as their funding continues to dwindle. California, which enacted a mandate in October, 2011 that local boards spend 25% of their WIA funds on training as part of SB 734, may be the exception.

The unemployment rate in the United States stubbornly remains in the vicinity of 9 percent more than two years after the officially designated end of the Great Recession in July 2009. Unemployment rates for minorities, veterans and older workers are well above that figure. Long-term (26 or more weeks) unemployment now accounts for 45 percent of all unemployment, a far larger share than in any previous era, leading Federal Reserve Board Chairman Ben Bernanke to declare the long-term unemployed a "national crisis" in late September. In this context, the timing of extra public dollars for training could hardly be better, as the opportunity costs—or "lock-in" effects—of training are likely to be lower at a time when unemployment rates are high and employment opportunities are poorer.

Most economists seem to agree that the labor market is characterized by both inadequate demand, as evidenced by the fact that consumer spending has yet to regain pre-recessionary levels posted in 2007, and secular structural problems including skills mismatch in key sectors. A strategy mix of both job creation *and* skills development is required to get the nation out of this unprecedented situation. Unfortunately, Congress seems to have little appetite for either.

Based on this synthesis of the evidence and ongoing labor market difficulties, several areas should receive greater national policy emphasis in the future. First, despite a modest effort to encourage job creation under TANF as part of ARRA (i.e., the TANF Emergency Fund), direct job creation has not been a serious part of the workforce arsenal since funding for public service jobs was eliminated in 1981 and it ceased being an allowable activity with passage of the Job Training Partnership Act of 1982. It may well be time to reconsider the role direct job creation should play, especially for the economically disadvantaged, minorities and the long-term unemployed.

Second, sectoral training strategies appear to hold significant promise, particularly at a time when employers in key industry sectors are clamoring for more skilled workers. The impacts from sectoral investments appear to be substantial and enduring. Such strategies are also a highly effective vehicle for instituting so-called "dual-customer" programming that not only addresses the needs of jobseekers, but also engages employers in meaningful, substantive ways. WIA explicitly sought to serve both customers when it was enacted in 1998, but local programs have sometimes done so more with rhetoric than action. Major components of the SECTORS Act that has been advocated by the National Skills Coalition found their way into the Senate's 2011 WIA bill. This is an evidence-based approach that will hopefully gain greater support in the months to come. Doing so, however, will be difficult in the face of declining public budgets at all levels.

In the U.S., we have long let private-sector employers carry the load in providing formal workplace training and in determining who gets training (largely, the more well-prepared and skilled workers). Since the recession reached its depth, however, the bulk (more than 85 percent) of the growth in national income has gone to profits and capital incomes, with considerably less invested in workers (Sum et al., 2011). We conclude by adding our voices to a growing chorus who have pointed out the long-term implications of both public sector and private sector pullback from workforce investment, and how damaging this will be to economic growth and the labor force attachment and well-being of workers, particularly the younger and more disadvantaged.

REFERENCES

Abrahart, A. and P. Verme (2001). "Labor Market Policies: Theoretical Background," Ch. 2 in Isabel Ortiz, Ed., *Social Protection in Asia and the Pacific,* Asian Development Bank.

Abt Associates (1996). *National Evaluation of Adult Education Programs,* Washington, D.C.: USDOE/PES.

Ashenfelter, Orley, Colm Harmon, and Hessel Oosterbeek (1999). "A Review of Estimates of the Schooling/Earnings Relationship, with Tests for Publication Bias," *Labour Economics* Vol. 6, No. 4 (November), pp. 453-470.

Auer, Peter, Umit Efendioglu, and Janine Leschke (2008). *Active labour market policies around the world: Coping with the consequences of globalization*, Geneva: International Labour Office, Second Edition.

Barnett, W.S. (1996). *Lives in the Balance: Age 27 Benefit–Cost Analysis of the High Scope Perry Preschool Program*. High/Scope Press, Ypsilanti, MI.

Barnow, Burt S. and Christopher T. King, Eds. (2000). *Improving the Odds: Increasing the effectiveness of Publicly Funded Training,* Washington, D.C.: The Urban Institute Press.

Barnow, Burt S. and Jeffrey A. Smith (2004). "Performance Management of U.S. Job Training Programs," In Christopher J. O'Leary, Robert A. Straits, and Stephen A. Wandner, Eds., *Job Training Policy in the United States,* Kalamazoo, Michigan: W.E. Upjohn Institute for Employment Research, pp. 21-56.

Barron, John M., Mark C. Berger, and Dan A. Black (1997). *On-the-Job Training*, Kalamazoo, Michigan: W.E. Upjohn Institute for Employment Research.

Bassi, Laurie, P. Harrison, J. Ludwig, and Daniel McMurrer (2001). *Human capital investments and firm performance*, Atlanta, GA: Human Capital Dynamics, June.

Becker, Gary S. (1964, 1993, 3rd ed.). *Human Capital: A Theoretical and Empirical Analysis with Special Reference to Education,* Chicago: The University of Chicago Press.

Belfield, C.R., Nores, M., Barnett, W.S., Schweinhart, L. (2006). The High/Scope Perry Preschool Program: cost–benefit analysis using data from the age-40 followup. *Journal of Human Resources* 41 (1), 162–190.

Bloom, Howard, Larry Orr, George Cave, Steve Bell and Fred Doolittle. (2003). The National JTPA Study: Title IIA Impacts on Earnings and Employment at 18 Months. Bethesda, MD: Abt Associates.

Bos, Johannes., Susan Scrivener, Jason Snipes, and Gayle Hamilton, with Christine Schwartz and Johanna Walter (2002). *National Evaluation of Welfare-to-Work Strategies: Improving Basic Skills: The Effects of Adult Education in Welfare-to-Work Strategies*, Washington, D.C.: U.S. Department of Education, Office of the Under Secretary, Planning and Evaluation Service.

Brown, Clair, John Haltiwanger, and Julia Lane (2006). *Economic Turbulence: Is a Volatile Economy Good for America?* Chicago: University of Chicago Press.

Canadian Apprenticeship Forum (2006). *Apprenticeship — Building a skilled workforce for a strong bottom line,: Return on Apprenticeship Training Investment for Employers – A Study of 15 Trades.* (June).

Card, David, Jochen Kluve, and Andrea Weber. (2009). "Active Labor Market Policy Evaluations: A Meta-Analysis." IZA Discussion Paper No. 4002, February.

Carneiro, Pedro and James J. Heckman (2003). "Human Capital Policy," In Benjamin M. Friedman, Ed., *Inequality in America: What Role for Human Capital Policies?* Cambridge, Massachusetts: The MIT Press, pp. 77-239.

Couch, Kenneth A. (1992). "New Evidence on the Long-Term Effects of Employment Training Programs," *Journal of Labor Economics* 10(4), October, pp. 380-388.

Denison, Edward Fulton (1985). *Trends in American Growth, 1929-1982*, Washington, D.C.: Brookings Institution.

Dyke, Andrew, Carolyn Heinrich, Peter R. Mueser, Kenneth R. Troske, and Kyung-Seong Jeon. 2006. "The Effects of Welfare-to-Work Program Activities on Labor Market Outcomes." *Journal of Labor Economics* 24:3 (July), 567-608.

Friedlander, Daniel, David H. Greenberg, and Philip K. Robins (1997). "Evaluating Government Training Programs for the Economically Disadvantaged," *Journal of Economic Literature* 35(4), pp. 1809-1855.

Garces, E., Thomas, D., Currie, J. (2002). Longer-term effects of Head Start. *American Economic Review* 92 (4), 999–1012 September.

Gill, Andrew M. and Duane E. Leigh (2003). "Do the Returns to Community Colleges Differ between Academic and Vocational Programs?" *Journal of Human Resources,* Vol. XXXVIII, No. 1 (Winter), pp. 134-155.

Giloth, Robert (2004). *Workforce Intermediaries for the Twenty-First Century,* Philadelphia: Temple University Press.

Greenberg, David H., Charles Michalopoulos, and Philip K. Robins (2006). "Do Experimental and Nonexperimental Evaluations Give Different Answers about the Effectiveness of Government-funded Training Programs?" *Journal of Policy Analysis and Management*, Vol. 25, No. 3 (Summer), pp. 523-552.

Griliches, Zvi (1997). "Education, Human Capital, and Growth: A Personal Perspective," *Journal of Labor Economics,* Vol. 15, No. 1 (January), pp. S330-S344.

Grubb, W. Norton and Paul Ryan (1999). *The Roles of Evaluation for Vocational Education and Training: Plain Talk on the Field of Dreams,* Geneva: International Labour Office.

Goodman, Peter S. (2010). After Training, Still Scrambling for Employment. *The New York Times*, July 18. (Downloaded on September 24, 2010 from http://www.nytimes.com/2010/07/19/business/19training.html?_r=1&pagewanted=1).

Grubb, W. Norton (1996). *Working in the Middle: Strengthening Education and Training for the Mid-skilled Labor Force*, San Francisco: Jossey-Bass, Inc.

Hamilton, Gayle (2002). *Moving People from Welfare to Work: Lessons from the National Evaluation of Welfare-to-Work Strategies*, Washington, D.C.: USHHS/ ASPE.

Heckman, James and Jeffrey Smith. 1995. "Assessing the Case for Social Experiments." *Journal of Economic Perspectives* 9(2): 85-110.

Heckman, James J., Moon, Seong Hyeok, Pinto, Rodrigo, Savelyev Peter A., and Adam Yavitz. 2010. "Analyzing social experiments as implemented: A reexamination of the evidence from the High Scope Perry Preschool Program." *Quantitative Economics*, 1(1):1-46.

Heinrich, Carolyn, J. and Harry J. Holzer. 2011. "Improving Education and Employment for Disadvantaged Young Men: Proven and Promising Strategies." *The Annals of The American Academy of Political and Social Science*, Volume 635 (May): 163-191.

Heinrich, Carolyn .J., Mueser, Peter and Kenneth R. Troske. (2008). *Workforce Investment Act Non-Experimental Net Impact Evaluation. Final Report to U.S. Department of Labor,* December.

Hobbie, Richard A., Burt S. Barnow, Joyce Kaiser, Christopher T. King, Demetra Nightingale, Tara Smith, John Trutko, Yvette Chocolaad and Wayne Vroman (2011). *Early Implementation of the American Recovery and Reinvestment Act Workforce Development and Unemployment Insurance Provisions*, Washington, D.C.: Center for Employment Security Research, National Association of State Workforce Agencies, January.

Hollenbeck, Kevin and Wei-Jang Huang (2006). *Net Impact and Benefit-Cost Estimates of the Workforce Development System in Washington State,* Kalamazoo, Michigan: W. E. Upjohn Institute for Employment Research, Technical Report No. TR06-020.

Hollenbeck, Kevin, Daniel G. Schroeder, Christopher T. King, and Wei-Jang Huang (2005). *Net Impact Estimates for Services Provided through the Workforce Investment Act*, Baltimore: The Jacob France Center, ADARE Project, University of Baltimore, October. Unpublished report prepared for USDOL/ETA.

Hotz, V. Joseph, Guido W. Imbens and Jacob A. Klerman. (2006). "Evaluating the Differential Effects of Alternative Welfare-to-Work Training Components: A Reanalysis of the California GAIN Program." *Journal of Labor Economics* 24 (July), 521-566.

Kane, Thomas J. and Cecilia Elena Rouse (1999). "The Community College: Educating Students at the Margin Between College and Work," *Journal of Economic Perspectives,* Vol. 13, No. 1 (Winter), pp. 63-84.

Kane, Thomas J. and Cecilia Elena Rouse (1995). "Labor Market Returns to Two-Year and Four-Year College," *American Economic Review*, Vol. 85, No. 3, pp. 600-614.

Kemple, James J. and Cynthia J. Willner. 2008. *Career academies: Long-term impacts on labor market outcomes, educational attainment, and transitions to adulthood*. MDRC, New York.

King, Christopher T. (2004). "The Effectiveness of Publicly-Financed Training in the United States: Implications for WIA and Related Programs," In Christopher J. O'Leary, Robert A. Straits, and Stephen A. Wandner, Eds., *Job Training Policy in the United States,* Kalamazoo, Michigan: W.E. Upjohn Institute for Employment Research, pp. 57-99.

King, Christopher T. (forthcoming). "The Use and Governance of Labour Market Policies and Programs: Comparing the United States and Japan," In Jason Heyes and Ludek Rychly, Eds., *Labour Administration and the Economic Crisis: Challenges, Responses and Opportunities*, London: Routledge Press.

King, Christopher T., Robert E. McPherson, and Donald W. Long (2000). "Public Labor Market Policies for the Twenty-First Century," In Ray Marshall, Ed., *Back to Shared Prosperity: The Growing Inequality of Wealth and Income in America,* Armonk, New York: M.E. Sharpe, pp. 275-286.

King, Christopher T. and Tara Carter Smith, "State Unemployment Insurance-supported Training Funds," In Heath Prince, Ed., *Strategies for Financing Workforce Intermediaries: Working Papers*, Boston, MA: Jobs for the Future/National Fund for Workforce Solutions, July 2007, pp. 69-122.

King, Christopher T., Tara Carter Smith and Daniel G. Schroeder (2009). *Evaluating Local Workforce Investments: Results for Short- and Long-term Training in Austin (TX*), Washington, DC: Paper presented to APPAM's 31st Annual Research Conference, November 6.

King, Christopher T., Ying, Tang, Tara Carter Smith and Daniel G. Schroeder, with assistance from Burt S. Barnow (2008). *Returns from Investments in Workforce Services: Texas Statewide Estimates for Participants, Taxpayers and Society,* Austin: Ray Marshall Center for the Study of Human Resources, Lyndon B. Johnson School of Public Affairs, University of Texas at Austin, August.

Klerman, Jacob Alex. (2005). "Measuring Performance," in *High Performance Government: Structure, Leadership, Incentives*, Robert Klitgaard and Paul C. Light, (eds). Santa Monica, CA: RAND Corporation, 343-380.

Kreuger, Alan B. (2003). "Inequality, Too Much of a Good Thing," In Benjamin M. Friedman, Ed., *Inequality in America: What Role for Human Capital Policies?* Cambridge, Massachusetts: The MIT Press, pp. 1-75.

Lafer, Gordon (2002). *The Job Training Charade,* Ithaca, NY: Cornell University Press.

LaLonde, Robert (1995). "The Promise of Public Sector-Sponsored Training Programs," *Journal of Economic Perspectives* 9(2), pp. 249-168.

Leigh, Duane E. and Andrew Matthew Gill (1997). "Labor Market Returns to Community Colleges: Evidence for Returning Adults," *Journal of Human Resources* 32(2) (Spring), pp. 334-353.

Lerman, Robert I., Signe-Mary McKernan, and Stephanie Riegg (2004). "The Scope of Employer-Provided Training in the United States, " In Christopher J. O'Leary, Robert A. Straits, and Stephen A. Wandner, Eds., *Job Training Policy in the United States,* Kalamazoo, Michigan: W.E. Upjohn Institute for Employment Research, pp. 211-243.

Maguire, Sheila, Joshua Freely, Carol Clymer, Maureen Conway and Deena Schwartz (2010). *Tuning In to Local Labor Markets: Findings from the Sectoral Employment Impact Study,* Philadelphia: Public/Private Ventures.

Martin, John P. (2000). "What Works Among Active Labour Market Policies: Evidence from OECD Countries' Experiences." *OECD Economic Studies* No. 30.

MDRC (2000). Summary and Findings of the National Supported Work Demonstration. Cambridge, MA: Ballinger Publishing Company.

Mincer, Jacob (1994). "Investments in Education and Training," Cambridge, MA: National Bureau of Economic Research Working Paper 4844. Published in the *Journal of Labor Economics* (1998), v. 17.

Orr, Larry L., Howard S. Bloom, Stephen H. Bell, Fred Doolittle, Winston Lin, and George C. Cave (1996). *Does Training for the Disadvantaged Work? Evidence from the National JTPA Study,* Washington, D.C.: The Urban Institute Press.

Osterman, Paul (2007). "Employment and Training Policies: New Directions for Less-Skilled Adults," In Harry J. Holzer and Demetra Smith Nightingale, Eds., *Reshaping the American Workforce in a Changing Economy,* Washington, D.C.: The Urban Institute Press, pp. 119-154.

Pindus, Nancy M., Carolyn O'Brien, Maureen Conway, Conaway Haskins, and Ida Rademacher (2004). *Evaluation of the Sectoral Employment Demonstration Program,* Washington, D.C.: The Urban Institute, June.

Prince, David and Davis Jenkins (2005). *Building Pathways to Success for Low-Skill Adult Students: Lessons for Community College Policy and Practice from a Statewide Longitudinal Tracking Study,* New York: Community College Research Center, Teachers College, Columbia University, April.

Ridley, Neil and Elizabeth Kenefick (2011). *Research Shows the Effectiveness of Workforce Programs: A Fresh Look at the Evidence,* Washington, D.C.: Center for Law and Social Policy, May.

Rivera, Ray J. and Andrew Paradise (2006). *2006 State of the Industry in Leading Enterprises: ASTD's Annual Review of Trends in Workplace Learning and Performance,* Alexandria, VA: American Society for Training and Development.

Rolnick, A., Grunewald, R., 2003. Early Childhood Development: Economic Developmentwith a High Public Return. Technical Report of Federal Reserve Bank of Minneapolis, Minneapolis, MN.

Schweinhart, L.J., Montie, J., Xiang, Z., Barnett, W.S., Belfield, C.R., Nores, M., 2005. Lifetime Effects: The High/Scope Perry Preschool Study Through Age 40. High/Scope Press, Ypsilanti, MI.

Smith, Tara Carter and Christopher T. King. (2011). *Exploratory Return-on-Investment Analysis of Local Workforce Investments,* Austin: Ray Marshall Center for the Study of Human Resources, Lyndon B. Johnson School of Public Affairs, University of Texas at Austin, June.

Smith, Tara Carter, Christopher T. King, and Daniel G. Schroeder (2011). *Local Investments in Workforce Development: 2011 Evaluation Update,* Austin: Ray Marshall Center for the Study of Human Resources, Lyndon B. Johnson School of Public Affairs, The University of Texas at Austin, April.

Sum, A., Khatiwada, I., McLaughlin, J., & Palma, S. (2011, May). The "jobless and wageless" recovery from the Great Recession of 2007-2009: The magnitude and sources of economic growth through 2011 and their impacts on workers, profits, and stock values. Boston: Northeastern University Center for Labor Market Studies. Downloaded (October 21, 2011) from: http://www.employmentpolicy.org/sites/www.employmentpolicy.org/files/field-content-file/pdf/Mike%20Lillich/Revised%20Corporate%20Report%20May%2027th.pdf

Table 1: Performance Measures used in JTPA and WIA Programs[†]

Performance Measure	**Description** (*indicates measure new to WIA)
Adults	
Entered employment rate	Number employed in the first quarter after program exit divided by the number of exiters (excluding participants employed at registration)
Employment retention rate	Of those who had a job in the first quarter after exit, number of participants who are employed in both the second and third quarters after exit divided by the number of participants who exit during the quarter
Average earnings	Total earnings in the second and third quarters after exit divided by the number of exiters with wages in the first, second and third quarters after exit
Employment and credential rate*	Of those adults who received WIA training services, the percentage who were employed in the first quarter after exit and received a credential by the end of the third quarter after exit.
Dislocated workers	
Entered employment rate	The percentage of dislocated workers who obtained a job by the end of the first quarter after program exit (excluding those employed at registration).
Employment retention rate	Of those who had a job in the first quarter after exit, number of participants who are employed in both the second and third quarters after exit divided by the number of participants who exit during the quarter
Average earnings	Total earnings in the second and third quarters after exit divided by the number of exiters with wages in the first, second and third quarters after exit
Employment and credential rate*	Of those dislocated workers who received WIA training services, the percentage who were employed in the first quarter after exit and received a credential by the end of the third quarter after exit
Older youth (19-21)	
Entered employment rate	The percentage of older youth who were not enrolled in post-secondary education or advanced training in the first quarter after program exit and obtained a job by the end of the first quarter after exit (excluding those employed at registration)
Employment retention rate	Of those who had a job in the first quarter after exit and were not enrolled in post-secondary education or advanced training in the third quarter after program exit, the percentage of older youth who have a job in the third quarter after exit
Average earnings change in 6 months	Of those who had a job in the first quarter after exit and were not enrolled in post-secondary education or advanced training, the post-program earnings change (in second and third quarters after registration) relative to pre-program earnings (in second and third quarters before registration)

Older Youth Employment/education/ training and credential rate*	The percentage of older youth who are in employment, post-secondary education, or advanced training in the first quarter after exit and received a credential by the end of the third quarter after exit
Younger Youth	
Retention rate	Number in employment, post-secondary education, advanced training, apprenticeships in third quarter after exit divided by the number of exiters not still in school at exit
Skill attainment rate	Attainment of goal relating to basic skills, work readiness and/or occupational skills
Diploma rate	Number of exiters who attained a diploma or its recognized equivalent (GED) by the first quarter after exit divided by the number of exiters not still in school at exit
Customer satisfaction	
Participant satisfaction*	The average of three statewide survey questions, rated 1 to 10 (1=very dissatisfied to 10=very satisfied), asking if participants were satisfied with services, if services met customer expectations, and how the services compared to the "ideal set" of services
Employer satisfaction*	The average of three statewide survey questions, rated 1 to 10 (1=very dissatisfied to 10=very satisfied), asking if employers were satisfied with services, if services met customer expectations, and how the services compared to the "ideal set" of services

[†]Table adapted with permission from Chapter 2 of Heckman, James J., Carolyn J. Heinrich, Pascal Courty, Jerry Marscke and Jeffrey Smith, 2011, *The Performance of Performance Standards*, W.E. Upjohn Institute for Employment Research.