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Net Impact and Benefit-Cost Estimates of the Workforce Development System in Washington State

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Net Impact and Benefit-Cost Estimates of the Workforce Development System in Washington State

HIGHLIGHTS:

- *A legislatively mandated net impact evaluation and cost-benefit analysis of 12 Washington State workforce development programs were conducted using administrative data.*
- *The employment and quarterly earnings net impact estimates were generally positive and quite substantial in both the short term (3 quarters after exit) and longer term (9–12 quarters after exit).*

By legislative mandate, the Washington State Workforce Training and Education Coordinating Board (Workforce Board) administers biennially outcome evaluations of the state workforce training system based on surveys of program participants and their employers and linkages with Employment Security Department payroll and wage files. These evaluations report participant success in finding employment, levels of earnings, and participant and employer satisfaction with program services and outcomes.

The Workforce Board's duties also include administering a scientifically

based net impact and benefit-cost evaluation of the state training system. These evaluations are most appropriately accomplished by using data from nonparticipants as well as participants. The data burden is thus greatly expanded compared to what is required for the biennial outcome evaluations, and so the legislation requires that the Workforce Board conduct this evaluation every five years. The Upjohn Institute conducted these evaluations in 2002, 2006, and 2012. This article is based on a technical report that provides the most recent net impact estimates of the Washington State employment preparation and training system and its economic value to the state.

Why Are Net Impact and Benefit-Cost Analyses Useful?

Washington's systematic estimation of net impacts of its workforce development programs and their costs and benefits is rare, and indeed may be unique, among states.¹ Presumably, the Washington legislature recognizes that investment in workforce development requires public resources and needs to be accountable to the public for achieving results.

Individuals who participate in training or educational programs may experience successful outcomes, such as employment or increased earnings. However, it is not always clear whether positive outcomes for individuals are the direct result of their participation in the programs. There could be other intervening factors that cause positive results, such as an improving economy. This study aims to determine whether participants' successes can be *attributed* to participation in the program or if other factors coincidental to the program played a role.

A net impact analysis addresses the attribution question. It attempts to answer the question of how outcomes compare to what would have happened if there were no program and individuals were left to their next best alternatives. To find the answer, we construct a comparison group of individuals who are very similar to the participants and would otherwise have qualified for the program but who chose not to receive training or enroll in education.² We observe both the participants and comparison group members over time. We then attribute to the program any differences in outcomes that we observe for program participants to those of comparison group members.

The net impacts of workforce development programs are likely to be positive for participants. (The programs are delivering valuable skills to individuals who will use those skills in the labor market.) However, accountability goes beyond positive net impacts. Of interest to the public is whether the net impacts (outcomes for program participants minus outcomes for similar individuals comprising a comparison group) aggregated over all participants will have exceeded the costs of the program. Therefore, to get a full picture of the return on investment, it is necessary to compare the programs' benefits to their costs.

Programs, Outcomes, and Time Periods

Of the 12 programs included in the analysis, 7 serve job-ready adults: Workforce Investment Act (WIA) Adult programs, Dislocated Worker programs,

Table 1 Short-Term^a Net Impacts of Washington's Workforce Development System, by Program

Program	Net employment impact (in percentage points)	Net quarterly earnings impacts (2014 \$)
WIA Adults	11.9	1,625
WIA Dislocated Workers	11.5	1,667
WIA Youth	1.5 ^b	-395
Comm. and Tech. College Workforce Education	6.5	1,285
Comm. and Tech. College Worker Retraining	8.1	850
Comm. and Tech. College BEdA	-2.2	-291
Comm. and Tech. College I-BEST	4.7	586
Private Career Schools	4.5	446
Registered Apprenticeships	7.5	3,715
Aerospace Training	15.0	2,881
Secondary Career Technical Ed.	2.4	104
Vocational Rehabilitation (WIA Title IV)	21.0	120

NOTE: Specific estimation techniques are described in the full technical report.

^aDefined as three quarters after exit.

^bNot statistically significant.

SOURCE: Authors' calculations.

Community and Technical College Workforce Education, Community and Technical College Worker Retraining, Private Career Schools, Apprenticeships, and Aerospace Training. Three programs serve adults with employment barriers: Community and Technical College Basic Education for Adults (BEdA), Community and Technical College Integrated Basic Education and Skills Training (I-BEST), and Division of

Washington's workforce development system results in quite positive outcomes for participants and for the state as a whole.

Vocational Rehabilitation (DVR) programs. The other two programs serve youth: WIA Youth programs and Secondary Career and Technical Education.

For the participants in each of these programs, we estimate the net impacts of participation on the following five outcomes: 1) employment rates, 2) hourly wages, 3) hours worked per quarter, 4) quarterly earnings, and 5) receipt and quarterly amount of UI benefits.

Throughout the study we define employment as having at least \$100 (2014 \$) in earnings in a calendar quarter. Hourly wages are defined as total

quarterly wages divided by hours worked in the quarter. UI receipt in a quarter is defined as having nonzero benefits in the calendar quarter.

For 10 programs, we use propensity score matching to construct the comparison group.³ That group was composed of individuals who registered for Wagner-Peyser services but did not participate in any of the workforce programs being analysed. These individuals were statistically matched to program participants. Differences in outcomes were attributed to the programs.

We use two time periods to define the populations of study: the first is the fiscal year running from July 2010 to June 2011, and the second is July 2012 to June 2013. More specifically, an individual is considered to be a member of a "treatment" group if he or she exited from an education or training program during either of the two time periods. An individual is considered to be a member of the "comparison" group pool if they registered for Wagner-Peyser services at a Work Source office during either of those years.

Note that because administrative data were used, sometimes the concept of exiting from a program was ambiguous and arbitrary, especially for individuals who exited without completing the program or training. Some education or training programs result in a certificate or

Table 2 Longer-Term^a Net Impacts of Washington's Workforce Development System, by Program

Program	Net employment impact (in percentage points)	Net quarterly earnings impacts (2014 \$)
WIA Adults	4.1	1,319
WIA Dislocated Workers	7.4	1,455
WIA Youth	6.7	250 ^b
Comm. and Tech. College Pro./Tech.	1.1	1,372
Comm. and Tech. College Worker Retraining	8.0	1,132
Comm. and Tech. College BEdA	2.9	-85 ^b
Comm. and Tech. College I-BEST	12.3	976
Private Career Schools	-0.4 ^b	509
Registered Apprenticeships	-0.8 ^b	3,447
Aerospace Training	15.4	4,132
Secondary Career Technical Ed.	2.7	214
Vocational Rehabilitation	2.4	228

NOTE: Specific estimation techniques are described in the full technical report.

^aDefined as average over quarters 9–12 after exit.

^bNot statistically significant.

SOURCE: Authors' calculations.

credential for individuals who successfully complete all of the requirements. In these cases, an individual's exit date was set at the date when they received the credential. However, individuals who stop attending a program are unlikely to report their action to program administrators, and so there may be a lag in the data that reflects how long it takes for the program's administrative information system to record the exit. Some programs use the rule that no contact over a 12-month period means that the individual exited the program; some programs use a six-month or a 90-day rule. All in all, we note that the exit date may be subject to measurement error, which therefore implies that length of time receiving treatment and initial outcome periods after treatment are somewhat subject to error.

Summary of Results

Table 1 provides a summary of short-term net impacts of the 12 programs on employment and earnings. It shows the increase (or decrease) in employment, defined as having at least \$100 (2014 \$) in earnings in the third quarter after exiting from the program, and the increase (or decrease) in quarterly earnings, on average, for that quarter.⁴ Note that these results include all participants—those individuals who completed their education or training and those who left

without completing. Separate net impact estimates for subgroups of participants, including completers only, are reported in the full technical report.

The employment impacts are in percentage point terms. Eleven of the 12 are positive and all but one of them are statistically significant. One program has negative short-run employment impacts—Community and Technical College Basic Education for Adults programs. (For a complete description of these programs, see the full technical report.)

The study estimates that the economic benefits that accrue to participants in a workforce development program are usually many multiples of the costs.

The employment rates of the comparison groups for all of the programs are on the order of 60 to 70 percent, so the positive impacts range from about 7 to 20 percent.⁵ All but two of the short-term earnings impacts are positive, and they vary considerably in terms of magnitude. All of the impacts are statistically significant and range from a low of about \$100 per quarter to over \$3,700 per quarter. Note that Registered Apprenticeships, Aerospace Training, WIA Adults and Dislocated Workers, and Community and

Technical College Workforce Education have quite large impacts. The only programs with decreases in earnings are WIA Youth and Community and Technical College BEdA courses.

Table 2 provides estimates of the longer-term payoffs to education and training. All but two of the employment net impacts are positive, and the two that are negative are not statistically significant. As far as earnings are concerned, 10 of the 12 programs have positive and statistically significant net impacts; one has a positive but not significant net earnings impact; and one has a negative, but not significant net impact. Because of depreciation of the impacts and regression to the mean, one might expect the short-term employment net impacts to be larger than the longer-term net impacts. However, this is not the case. All but three of the longer-term earnings net impacts are larger (or less negative) than the short-term earnings net impacts. Note that in percentage terms, the earnings net impacts for the 12 programs are on the order of 20 percent.

Table 3 summarizes the benefit-cost estimates for the 12 programs. Due to data limitations, the benefit-cost estimates for private career schools are partial. The table presents the estimates of benefits and costs for the average participant, and it shows the benefits and costs (all of which are adjusted for inflation) to the public that are associated with the average participant. All of the benefits and costs are adjusted for inflation. For participants, the benefits include net earnings changes (earnings plus fringe benefits minus taxes) and UI benefits. These benefits are discounted at an annual rate of 3.0 percent. The benefits are usually positive, indicating that the additional earnings and UI benefits accrue to the participant, but in theory they may be negative if earnings and/or UI benefits were projected to decrease. For the public, benefits include tax receipts plus changes in UI benefits. Again, these may be positive (taxes are received and UI benefits are reduced) or, they may be negative. For participants, the costs are forgone compensation during the period of program participation and tuition/fees, if any. For the public, costs represent the budgetary expenditures necessary

Table 3 Discounted Benefits and Costs of Washington's Workforce Development System, by Program

Program	First 2.5 years				Lifetime			
	Participant		Public		Participant		Public	
	Benefit	Cost	Benefit	Cost	Benefit	Cost	Benefit	Cost
WIA Adults	19,567	-3,135	3,484	1,799	119,302	-3,135	22,432	1,799
WIA Dislocated Workers	16,139	6,798	7,537	4,368	78,478	6,798	22,132	4,368
WIA Youth	3,861	-288	545	2,973	29,167	-288	7,128	2,973
Comm. and Tech. College Workforce Educ.	15,374	2,192	3,960	8,412	139,781	2,192	31,568	8,412
Comm. and Tech. College Worker Retraining	8,278	8,621	3,597	5,919	79,609	8,621	24,973	5,919
Comm. and Tech. College BEDa	-24	-293	875	5,072	-477	-293	1,015	5,072
Comm. and Tech. College I-BEST	8,535	-77	3,515	5,101	99,421	-77	26,899	5,101
Private Career Schools ^a	6,953	1,045	2,199	n/a	61,704	1,045	14,359	n/a
Registered Apprenticeships	36,159	-51,039	12,746	-8,906	287,521	-51,039	117,117	-8,906
Aerospace Training	41,453	4,016	11,912	8,626	383,631	4,016	133,863	8,626
Secondary Career Technical Ed.	2,216	-149	315	1,724	46,048	-149	11,963	1,724
Vocational Rehabilitation	1,883	-4,634	384	5,988	20,017	-4,634	5,084	5,988

NOTE: Benefits for a participant include earnings and fringe benefits less taxes plus UI benefits discounted at 3.0 percent annually; for the public, benefits include undiscounted tax receipts minus UI benefit payments. Costs include direct program costs (public and participant, if tuition/fees) and foregone compensation (participant) and foregone taxes (public). Table entries in 2014 \$. n/a = not available; no data were available on the tuition and fees at private career schools.

^aPrivate costs only include foregone earnings; tuition rates unavailable.

SOURCE: Authors' calculations.

to provide the training/education services plus any forgone taxes because participants are in programs and have less earnings; thus paying less taxes. The public costs are positive in all programs, but participant costs are negative in over half the programs because forgone compensation is negative in those programs (participants actually earn more during their program participation than if they had not participated).

The first four columns show the average participant's benefits and costs that accrue over the first 10 quarters after exiting from the program, as well as the public's benefits (revenue) and costs that are derived from or borne for the average participant. From the participant's perspective, most of the programs have real (i.e., inflation-adjusted) benefits that exceed costs over the 10-quarter time frame; however, one program does not. Community and Technical College Worker Retraining participants have large forgone compensation that outweighs the net earnings impacts in the short-term.

The last four columns extrapolate the benefits to the average participant's working lifetime (assumed to end at age 65). In this calculation, the programs are, for the most part, quite beneficial for participants; their benefits significantly exceed costs in all cases, except for Community and Technical College BEDa. From the public's perspective,

nine of the programs have benefits that exceed costs in the long-run for the average participant; only Community and Technical College BEDa and Vocational Rehabilitation are estimated to have costs exceed benefits for the public over the lifetime of the average participant.

Conclusion

Washington's workforce development system results in quite positive outcomes for participants and for the state as a whole. With the exception of only a couple of the programs that were analyzed, participants gain large employment and earnings advantages over individuals with similar labor market and demographic characteristics who do not avail themselves of education or training opportunities. Over an individual's working lifetime, the study estimates that the economic benefits that accrue to participants in a workforce development program are usually many multiples of the costs. Furthermore, the government gains monetary benefits that exceed the costs.

Notes

1. The Workforce Innovation and Opportunity Act of 2014 (WIOA) legislation now mandates assessments and evaluations similar to what Washington has been doing for all states. See Section 116 (e), "Evaluation

of State Programs." The program data that were analyzed in this study preceded the implementation of WIOA in 2015, so we use the acronym WIA for the Workforce Investment Act.

2. Experimental evaluation uses a randomly assigned control group.

3. For two of the programs, we actually used administrative data on program applicants to construct the comparison groups. The programs were Secondary Career and Technical Education and Division of Vocational Rehabilitation programs. In these cases, there were administrative data on students (in the case of Career and Technical Education) and customers (in the case of DVR) who did not participate/receive services.

4. The earnings impacts are not conditional on individuals having earnings; that is, the means include observations with values of zero.

5. The Vocational Rehabilitation estimated employment impact of 21.0 percentage points is an outlier caused by the fact that employment helped to define the treatment group.

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