

**Return-on-Investment (ROI) Estimates for
Workforce Services in Texas, State Fiscal Year 2000-2001:**

Composite Workforce Development Board

Prepared for

WORKFORCE LEADERSHIP OF TEXAS

April 2003

Prepared by

Christopher T. King
Dan O'Shea
Sarah E. Looney
C. Andrew Redman
W. Lee Holcombe

Ray Marshall Center for the Study of Human Resources

Lyndon B. Johnson School of Public Affairs

The University of Texas at Austin

3001 Lake Austin Blvd., Suite 3.200

Austin, Texas 78703

512.471.7891

This report was prepared with funding provided by the Workforce Leadership of Texas under contract #200200834-001. The views expressed are those of the authors and do not represent those of the University of Texas at Austin or the Workforce Leadership of Texas.

EXECUTIVE SUMMARY

This report outlines the approach used to estimate returns on investment (ROI) for workforce services delivered in 18 of the 28 local workforce areas in Texas. It also presents ROI estimates for the Composite Workforce Development Board, one that demonstrates the “average” experience of participating boards. The Workforce Leadership of Texas, the statewide association of board chairs and directors, initiated this ROI effort—the first to attempt estimation of ROI across many of the important workforce funding streams—contracting with researchers at the University of Texas at Austin’s Ray Marshall Center to develop these estimates.

Our approach produces *reasonable first-approximations* of the returns to taxpayers on an array of workforce investments at the board level. Reasonable first-approximations of the net returns to taxpayers for major workforce investments in the Composite Workforce Development Board are presented for both 5- and 10-year periods. The 5-year net ROI for workforce investments is estimated to be *600 percent*. Another way of stating this is that every public dollar invested in these workforce services in 2000-2001 resulted in \$6.00 returned to taxpayers over five years. Over 10 years, the net ROI from workforce investments is estimated to be *800 percent*. Thus, every public dollar invested in workforce services in 2000-2001 resulted in \$8.00 returned to taxpayers over ten years.

A number of benefits and costs associated with workforce investments in the community have not been factored into our ROI estimates. Excluded benefits include returns associated with additional years of schooling for youth, the value of program output, and savings from reduced criminal involvement as well as teen pregnancy. Among the costs excluded are those associated with program transition costs and childcare costs not directly associated with the delivery of employment and training services. These exclusions lend our estimates a conservative bias.

This report outlines the approach used to estimate returns on investment (ROI) for workforce services delivered in 18 of the 28 local workforce areas in Texas. It also presents ROI estimates for the Composite Workforce Development Board, one that illustrates the “average” experience of the participating boards. The Workforce Leadership of Texas, the statewide association of workforce board chairs and directors, initiated this ROI effort—the first to attempt estimation of ROI across many of the important workforce funding streams—contracting with researchers at the University of Texas at Austin’s Ray Marshall Center to develop these estimates. This ROI project builds upon an earlier phase of the project that developed and recommended systemic outcome measures for Texas workforce services (Workforce Leadership of Texas, 2001).

APPROACH & KEY ASSUMPTIONS

Our approach produces *reasonable first-approximations* of the net returns to taxpayers from an array of workforce investments at the board level. ROI estimates presented here address the question: what is the taxpayers’ net rate of return on key workforce investments? Key steps and assumptions in this approach are as follows: ¹

- ❑ Defining the *workforce program array*. We focus primarily on federal/state funding streams that are *directly controlled* by local workforce boards, namely Workforce Investment Act (WIA) Title I serving adults, dislocated workers, and older youth; TANF Choices; Food Stamp Employment and Training (Food Stamp E&T); Welfare-to-Work (WtW); and Child Care. Our estimates also encompass funding streams administered by the Texas Workforce Commission that are only *indirectly controlled* by boards, namely the Employment Service (ES) and Veterans Employment and Training (VET) programs. In some areas, other funding streams are under board control as well, such as Trade Adjustment Assistance (TAA)-NAFTA and Skills Development grants.
- ❑ Selecting the *cohort* and *time periods*. We focus on individuals served in the key funding streams during State Fiscal Year 2001, i.e., September 2000 to August

2001. We project returns for 5- and 10-year periods following the period of investment. Projections over longer periods would be inappropriate for two reasons. First, most public workforce investments, with the exception of some postsecondary education and training, are of limited scope and scale and are unlikely to yield longer-lasting benefits. Second, labor markets have become far more dynamic in recent years with skill sets becoming obsolete much sooner.

- ❑ Estimating by *service strategy* and *target group*. We classify services across the various funding streams into two basic types: core/intensive and training and estimate impacts accordingly. We also estimate costs and impacts by major target populations, where appropriate and feasible, (e.g., adults, dislocated workers, youth, welfare), before aggregating them.²
- ❑ Documenting *workforce investment expenditures*. We use detailed expenditure reports secured from local workforce Boards and TWC to ensure that we fully capture the costs of all of the relevant workforce investments. Board-specific program expenditure data are shown in Appendix A.
- ❑ Documenting initial *workforce investment outcomes* and projecting them into the future. We accessed The Workforce Information System of Texas (TWIST) outcomes data maintained by TWC. In addition to the effects on participants' employment and earnings, we factor in related employer productivity increases *over and above* the portion that individuals have secured in the form of compensation increases.
- ❑ Adjusting program outcomes for *attribution* and *decay rates*. Only a portion of observed labor market outcomes constitute true impacts resulting from program participation due to the fact that many participants would have become employed and posted earnings without any intervention. We base our impact estimates on both observed labor market outcomes data and impact results from the evaluation literature (see References). Moreover, impacts resulting from participation in

¹ Detailed assumptions used in estimating ROI are available on the Ray Marshall Center's website: www.utexas.edu/research/cshr/pubs/.

workforce services may decay or diminish over time. Recent evaluations comparing labor force attachment (LFA) and human capital development (HCD) approaches to workforce services suggest that earnings impacts of LFA diminish over time while those from HCD persist over the longer term. For example, earnings impacts for welfare women in various training programs remained undiminished fully 7-8 years later (e.g., Couch, 1992 and Hotz et al. 2000). We thus apply *decay rates* that vary from zero to 100 percent, depending on the particular service and target group.

- ❑ Applying *spending multipliers* to program impacts on earnings and employer productivity. Participant and employer impacts are the first-round effects of workforce investments. As these dollar impacts make their way through the economy, they lead to further effects in subsequent rounds. These spending ‘multiplier’ effects are computed only on *increments*, not gross outcomes. OMB guidelines for benefit-cost analysis state that multipliers greater than one can be justified when resources are not fully employed. We apply a spending multiplier of 2.0 to our estimated impacts on earnings and employer productivity, given that unemployment rates in all Texas labor markets are above full-employment levels.
- ❑ Selecting an appropriate *discount rate*. Discounting is necessary to render future benefits into present values. Discount rates used in ROI and cost-effectiveness analyses can vary widely. We utilize a 3 percent real (inflation-adjusted) discount rate as prescribed by the Office of Management and Budget (2002).
- ❑ Conducting *sensitivity analysis* for our ROI estimates. The final step in the estimation process entails varying key assumptions to demonstrate how sensitive ROI results are to changes in their values. For example, as indicated above, we compute changes in our ROI estimates over 5- and 10-year periods.

Below-the-Line Benefits and Costs. A number of important benefits and costs are not factored into our ROI estimates. We refer to these as “below-the-line” benefits and costs. Including such benefits would lead to increased returns, while including additional costs

² David Baggerly of the Gulf Coast Workforce Board provided Management Summary Reports and Extract Files from TWIST that gave us access to workforce program participant characteristics, services, and

would lower them. We cannot precisely estimate the degree to which excluding these benefits and costs might bias our ROI estimates, but the direction of the bias is likely to be downward. Thus, our ROI estimates should be viewed as *conservative*.

Among the benefits not factored into our analysis are economic impacts of workforce spending, returns associated with related educational investments, the value of program output and reduced criminal activity, and savings from declining teen pregnancy. Spending for service provision would lead to multiplier effects on earnings as providers spend these dollars. Including such effects would be appropriate for an economic impact analysis. Substantial returns also would result from postsecondary education not financed by WIA or TANF (e.g., tuition and fees, Pell grants), as well as private training investments. Younger WIA youth who complete additional years of schooling due to participation also would enjoy enhanced lifetime earnings. And, as the recent Job Corps evaluation showed (Burghardt et al. 2001), participation leads to substantial long-term reductions in the costs associated with involvement in the criminal justice system, as well as increased program output. Measuring such effects is difficult and costly and has not been attempted. Among the excluded expenditures are those associated with program transition costs and childcare costs not directly associated with the delivery of employment and training services, as well as costs associated with community and technical college enrollment in the form of tuition and fees, and various publicly funded grants and loans.

RETURN-ON-INVESTMENT ESTIMATES

We have developed net ROI estimates for both 5- and 10-year periods that serve as reasonable first approximations of the returns to taxpayers for major workforce funding streams in this area. The 5-year net ROI estimate for the Composite Workforce Development Board is 600 percent, with a range from 450 to 775 percent (see Table 1). Another way of stating this is that every public dollar invested in these workforce services in 2000-2001 resulted in \$6.00 returned to taxpayers over five years. The higher figure results from applying the most favorable set of assumptions, while the lower figure

outcomes. UI wage records data in TWIST enabled us to estimate earnings outcomes for the Boards.

stems from applying the least generous ones. The 10-year net ROI estimate for the Composite Workforce Development Board is 800 percent, with a range from 650 to 1,000 percent (see Table 2). Thus, every public dollar invested in workforce services in 2000-2001 resulted in \$8.00 returned to taxpayers over ten years.

**TABLE 1: FIVE-YEAR NET RETURN ON INVESTMENT, STATE FY 2000-2001,
COMPOSITE WORKFORCE DEVELOPMENT BOARD**
Taxpayer Perspective, Per-Participant Basis

	SFY 01	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Expenditures/Participant							
Administration	\$60	-	-	-	-	-	\$60
E & T Services	\$235	-	-	-	-	-	\$235
Child Care Services	\$165	-	-	-	-	-	\$165
Tax Credits	\$60	-	-	-	-	-	\$60
<i>Total Expenditures</i>	\$520	-	-	-	-	-	\$520
Returns/Participant							
Increased Earnings	-	\$425	\$225	\$140	\$55	\$50	\$895
Increased Employer Output	-	\$215	\$110	\$70	\$25	\$25	\$445
Welfare Savings	-	\$5	\$5	\$5	\$0	\$0	\$15
UI Savings	-	\$5	\$0	\$0	\$0	\$0	\$5
Increased Taxes	-	\$140	\$110	\$100	\$90	\$90	\$530
Multiplier Effects	-	\$635	\$335	\$210	\$80	\$80	\$1,340
<i>Total Returns</i>	-	\$1,425	\$780	\$515	\$250	\$245	\$3,215
PV Total Returns	-	\$1,383	\$757	\$500	\$243	\$238	\$3,121
					Net PV of Returns		\$2,601
					5-yr ROI		600%
					Range	450%	775%

TABLE 2: TEN-YEAR NET RETURN ON INVESTMENT, STATE FY 2000-2001,
COMPOSITE WORKFORCE DEVELOPMENT BOARD
Taxpayer Perspective, Per-Participant Basis

	Years 1-5	Year 6	Year 7	Year 8	Year 9	Year 10	Total
Expenditures/Participant							
Administration	\$60	-	-	-	-	-	\$60
E & T Services	\$235	-	-	-	-	-	\$235
Child Care Services	\$165	-	-	-	-	-	\$165
Tax Credits	\$60	-	-	-	-	-	\$60
<i>Total Expenditures</i>	\$520	-	-	-	-	-	\$520
Returns/Participant							
Increased Earnings	\$895	\$50	\$50	\$50	\$50	\$50	\$1,145
Increased Employer Output	\$445	\$25	\$25	\$25	\$25	\$25	\$570
Welfare Savings	\$15	\$0	\$0	\$0	\$0	\$0	\$15
UI Savings	\$5	\$0	\$0	\$0	\$0	\$0	\$5
Increased Taxes	\$530	\$65	\$55	\$55	\$55	\$55	\$815
Multiplier Effects	\$1,335	\$80	\$80	\$80	\$80	\$80	\$1,735
<i>Total Returns</i>	\$3,215	\$220	\$210	\$210	\$210	\$210	\$4,285
Net Returns/Participant	\$3,121	\$214	\$204	\$204	\$204	\$204	\$4,160
					Net PV of Returns		\$3,640
					10-yr ROI		800%
					Range	650%	1000%

APPENDIX A
WORKFORCE EXPENDITURES FOR THE COMPOSITE WORKFORCE
DEVELOPMENT BOARD, STATE FY 2000-2001

	South Texas		Expenditures		
	Code	Program/Stream	Admin	Program	Total
WIA ADULT	95	WIA Title I Adult	\$615,557	\$6,088,218	\$6,703,774
WIA DISLOCATED	96	WIA Title I Dislocated	\$315,705	\$3,481,143	\$3,796,847
		WIA Rapid Response	\$4,960	\$241,696	\$245,002
		WIA Dislocated – Additional		\$308,450	\$308,450
		National Reserve Account	\$40,810	\$219,881	\$247,088
		National Emergency Grant			\$0
WIA YOUTH	97	WIA Youth (Adj. 30%)	\$204,640	\$2,224,979	\$2,429,619
		WIA Summer Youth (Adj. 30%)	\$13,687	\$60,090	\$73,777
	102	Youth Opportunity Grants			\$0
WIA OTHER		WIA Admin			
	98	WIA Incentive	\$0	\$21,659	\$21,659
	103	APEX	\$163,807	\$728,032	\$891,839
		WIA Worker Profiling	\$9,775	\$105,089	\$114,864
		WIA Add'l Assistance			
		WIA Provider Certification	\$0	\$0	\$0
		WIA Transitional	\$166,720	\$753,659	\$837,019
		One-Stop Formula			\$0
		JTPA Transition			\$0
		Migrant	\$0	\$53,522	\$53,522
	105	H1B DOL	\$0	\$319,224	\$319,224
TANF	89, 90	TANF/Choices	\$587,307	\$4,918,410	\$5,505,717
		Local Innovation (Rider 24)		\$70,638	\$70,638
	109	Adult Literacy (Rider 25)	\$14,855	\$144,993	\$159,848
		TANF Rural Expansion			\$0
WELFARE TO WORK	80,82	WtW	\$344,874	\$2,919,510	\$3,264,384
	84,86	WtW Competitive			
FSE&T	87, 88	FSE&T	\$85,500	\$756,246	\$841,747
STATE PROGRAMS		Wagner-Peyser ES	\$538,165	\$2,269,357	\$2,807,522
		Veterans E&T	\$27,045	\$432,375	\$450,405
		Project RIO	\$55,155	\$224,420	\$279,575
		TAA/NAFTA	\$8,106	\$64,476	\$69,880
OTHER GRANTS/STREAMS		School-to-Careers	\$46,274	\$342,525	\$129,600
CHILD CARE		BAPA/CC Total	\$3,466,295	\$36,441,283	\$39,907,578
		Child care (adjusted)	\$1,416,608		\$163,029
OTHER COSTS		WOTC Certifications (est.)			\$4,156,050
		EITC			\$0

Board Total	\$44,288,888
Total Administration	\$4,367,300
Total Program	\$25,186,834
Total Childcare (Adj.)	\$14,734,755

Sources & Notes: Board and TWC expenditure data. Expenditures for “start-up” and other programs were excluded, including: WIA or One-Stop Transition and Provider Certification, TANF Rural Expansion, TAA (largely in El Paso), , and 70 percent of WIA youth (note: outcomes are only computed for Older Youth). Zeros are inserted in cells with excluded expenditures. Childcare budget and fund codes that are not exclusively associated with workforce programs are excluded or adjusted. See www.utexas.edu/research/cshr/ for details on expenditure adjustments.

REFERENCES

- 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.
- Bloom, Howard S. (1990). *Back to Work: Reemployment Services for Displaced Workers*, Kalamazoo, Michigan: W. E. Upjohn Institute for Employment Research.
- Burghardt, John et al. (2001). *National Job Corps Study: The Impacts of Job Corps on Participants' Employment and Related Outcomes*, Princeton, N.J.: Mathematica Policy Research, June.
- Castro, Eva DeLuna and Dick Lavine (2002). *The Texas Budget & Tax Primer: Where the State's Money Comes From & How It Is Spent*, Austin, TX: Center for Public Policy Priorities, August. Unpublished figures provided by the authors.
- Corson, Walter and Joshua Haimson (1994). *The New Jersey Unemployment Insurance Reemployment Demonstration Project: Six-Year Followup and Summary Report*, Washington, D.C.: USDOL, ETA, December.
- 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.
- Emsellem, Maurice, Katherine Allen and Lois Shaw (1999). *The Texas Unemployment Insurance System: Barriers to Access for Low-Wage, Part-Time & Women Workers*, New York, NY: National Employment Law Project, February.
- Emsellem, Maurice et al. (2002). *Failing the Unemployed: A state by state examination of unemployment insurance systems*, Washington, DC: Economic Policy Institute, Center on Budget and Policy Priorities and National Employment Law Project, March.
- Friedlander, Daniel, David H. Greenberg, and Phillip K. Robins (1997). "Evaluating Government Training Programs for the Economically Disadvantaged," *Journal of Economic Literature* 35(4), December, pp. 1809-1855.
- Glover, Robert W. et al. (1999). *Return-on-Investment (ROI) Analysis of Education and Training in the Construction Industry, Report No. 6*, Austin: Center for Construction Industry Studies, The University of Texas at Austin.
- Hamilton, Gayle et al. (2001). *National Evaluation of Welfare-to-Work Strategies: How Effective Are Different Welfare-to-Work Approaches? Five-Year Adult and Child Impacts for Eleven Programs*, New York: Manpower Demonstration Research Corporation.
- Hollenbeck, Kevin et al. (2003 forthcoming). *Net Impact and Cost-Benefit Evaluation of Washington State's Workforce Training System: Final Report*, Kalamazoo, Michigan: W. E. Upjohn Institute for Employment Research.
- Hotz, V. Joseph et al. (2000). *The Long-Term Gains from GAIN: A Re-Analysis of the Impacts of the California GAIN Program*, Cambridge, MA: National Bureau of Economic Research, Working Paper 8007.

- Johnson, Terry R., Katherine P. Dickinson, and Richard W. West (1985). "An Evaluation of the Impact of ES Referrals on Applicant Earnings," *Journal of Human Resources* 20(1), Winter, pp. 117-187.
- King, Christopher T. (2002). *Employment and Training Program Evaluations: Lessons for WIA*. Paper presented at the 24th Annual Research Conference of the Association for Public Policy Analysis and Management, November.
- LaLonde, Robert J. (1995). "The Promise of Public Sector-Sponsored Training Programs," *Journal of Economic Perspectives* 9(2), pp. 149-168.
- Meyers, Marcia K. et al. (2002). *The Dynamics of Child Care Subsidy Use: A Collaborative Study of Five States*, New York: National Center for Children in Poverty, July.
- Norris, Davy N. and Christopher T. King (1997). *Return on Investment: A Cost-Effectiveness Measure for the Texas Workforce System*, Austin: Lyndon B. Johnson School of Public Affairs, Center for the Study of Human Resources, University of Texas at Austin, June.
- Nudelman, Jodi (2000). "The Impact of Job Training Partnership Act Programs for Adult Welfare Recipients," In Burt S. Barnow and Christopher T. King, eds. *Improving the Odds: Increasing the Effectiveness of Publicly Funded Training*, Washington, D.C.: The Urban Institute Press.
- Orr, Larry L. et al. (1995). *Does Training for the Disadvantaged Work? Evidence from the National JTPA Study*, Washington, D.C.: The Urban Institute Press.
- SB/SE Research (2002). *Participation in the Earned Income Tax Credit Program for Tax Year 1996*, Ft. Lauderdale/Greensboro: Fiscal Year 2001 Research Project #12.26 of the Internal Revenue Service.
- Schexnayder, Deanna T. et al. (2002). *Texas Families in Transition - Surviving without TANF: An Analysis of Families Diverted from or Leaving TANF*, Austin, TX: Texas Department of Human Services, January.
- Texas Department of Human Services (2000). *Reference Guide, 2000*, Austin: TDHS.
- Texas Health and Human Services Commission (2002). *Texas Medicaid in Perspective*, Fourth Edition, Austin, TX: THHSC, May.
- U.S. Executive Office of the President (2002). *OMB Circular No. A-94, Guidelines and Discount Rate for Benefit-Cost Analysis of Federal Programs*, especially Appendix C: Discount Rates for Cost-Effectiveness. *Lease Purchase and Related Analyses*, Washington, D.C.: OMB, Revised February.
- U.S. Internal Revenue Service (2002). *Tax Guide 2002 for Individuals*, Washington, D.C.: Department of the Treasury, IRS Publication 17.
- Workforce Leadership of Texas (2001). *Improving Performance Measurement for Texas Workforce Development Boards: Final Report-Phase One*, Austin, TX: WLT, December. Prepared by Christopher King, Robert McPherson, Daniel O'Shea and Ying Tang.

ACKNOWLEDGEMENTS

This report was prepared by researchers at the Ray Marshall Center for the Study of Human Resources at the University of Texas at Austin's Lyndon B. Johnson School of Public Affairs with funding provided by the Workforce Leadership of Texas under contract #200200834-001. Center staff assembled the data, conducted the analysis, and produced ROI estimates relying on expenditures and outcomes data provided by local board staff.

We owe a special debt of gratitude to a number of individuals. David Baggerly of the Composite Workforce Board for conducting special TWIST data runs to provide us with labor market outcomes data for all 28 Texas boards. Anna Valdez of the Workforce Leadership ensured that we secured readily available data on state-administered programs from the Texas Workforce Commission. Many administrators and staff at TWC helped us with understanding these data including Reagan Faulkner. Greg Ferland, Assistant to TWC Employer Commissioner Ron Lehman, provided us with employer tax credit data. At different stages of the project Janie Bates, Rodney Bradshaw, Mary Ross, and Mike Temple provided their guidance and support. In addition, Mike McLauchlan at Composite provided his input. We appreciate the support that all of the local boards provided us to produce these ROI estimates. Finally, Shirley Clowers Knox, the executive director of WorkSource, Capital Area Workforce Development Board, generously consented for her board to serve as our 'laboratory' for the ROI estimation process. Sandy Dochen, then the WorkSource Capital Area Board chair, and key members of the staff, including Annette Gula, Francisco Almaraz, and Yael Trevino, assisted us in this effort.

A number of staff at the Ray Marshall Center also helped us in conducting this research by providing assistance with data or measurement approaches, including Bob Glover, Daniel Schroeder, Deanna Schexnayder, and Bob McPherson. Karen White and Vivian Richards provided administrative support.