



ROI Estimates for Virginia DARS Using 5 and 10 Years of Earnings Data

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Session Objectives

- To describe the VR ROI project's approach to examining the impact of VR on long-term employment outcomes and estimating the ROI of state VR programs
- To present results of recent ROI analyses of data from Virginia DARS using 5 as well as 10 years of post-application employment and earnings data
- To address the question of what more is learned from longer employment and earnings time series
- To present estimates of agency-wide ROI for Virginia DARS

Overview of VR ROI Project

- **Funded by NIDILRR**
- **2010 FIP involved 4 state VR agencies: both VA agencies, MD, and OK**
 - **Objective: develop and test a valid, rigorous model for assessing ROI at state agency level**
- **2014 DRRP expanded to 8 state agencies across 6 states: VA, MD, DE, KY, NC, TX**
 - **Refine and test the ROI model with more heterogeneous set of state agencies**
 - **Using data on 3 cohorts: VR applicants in SFY 2000, 2007, 2012**

Overview of Our Approach to Estimating ROI for State VR agencies

Brief Overview of Our Approach

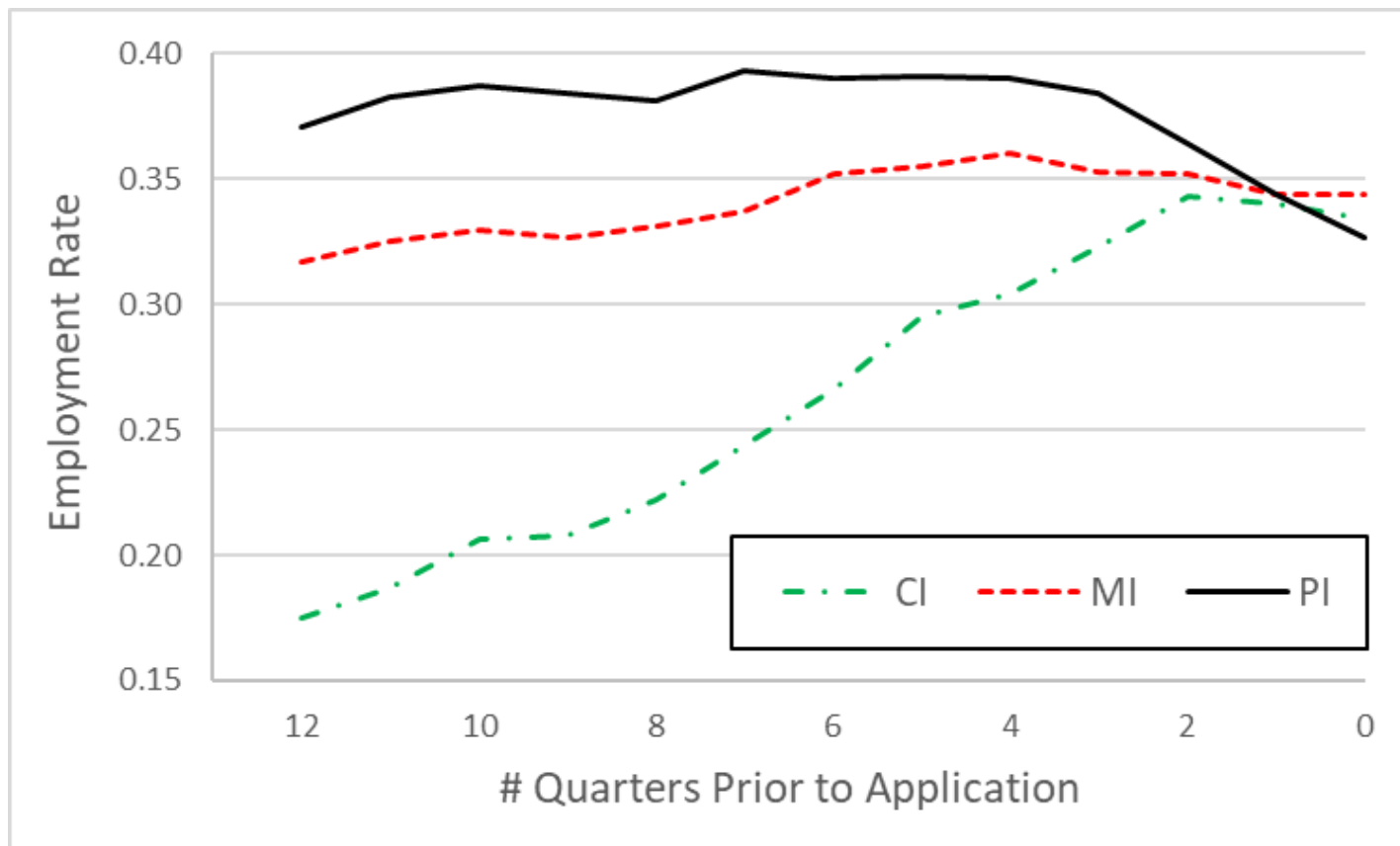
- VR ROI Project has developed a set of tools that describes the economic value of VR services while providing information for program improvement
- We want to be as accurate as possible and at the same time as meaningful to you all as possible.
- Key VR staff at Virginia DARS have been essential to the project development and continual refinements
- Results are intended to be helpful in consideration of service delivery and policy development but are not 'the one answer' or to be used without context.

Key Features of Our Approach (1 of 6)

- Uses longitudinal wage data from quarterly employment records.
 - Spans several years of pre-VR earnings as well as five or more years following receipt of VR services.
- Estimates VR's impact from when services begin, not when they end (i.e., using applicant cohorts rather than closure cohorts).
- Separately examines the impact of VR for individuals with different kinds of disabling conditions.
 - These results focus on 2007 estimates for individuals with a Mental Illness (MI), Physical Impairment (PI), or Cognitive Impairment (CI, including both intellectual disability and learning disabilities)

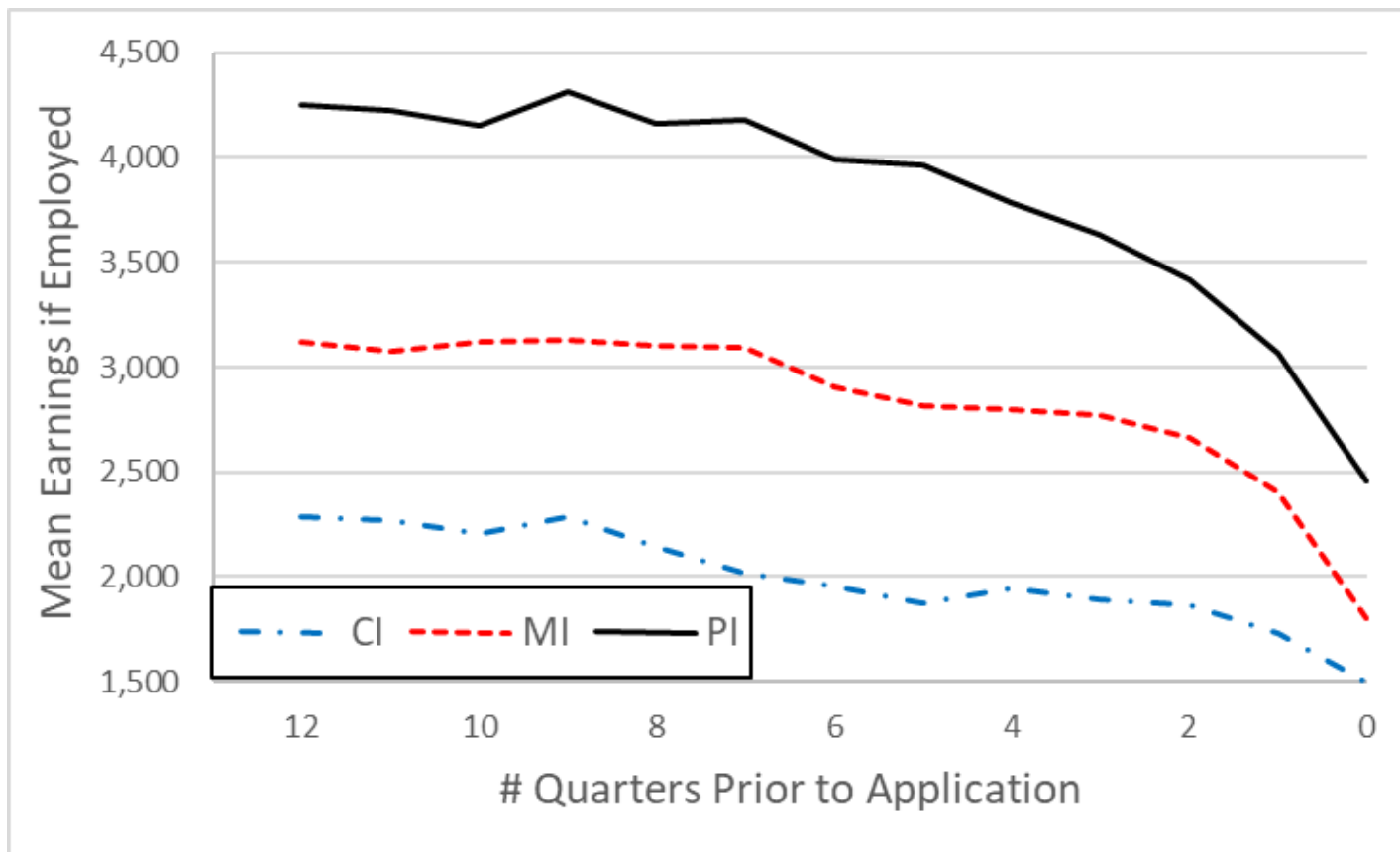
Key Features (2 of 6): Pre-VR Employment

Pre-VR Employment Rates by Disability Type: 2007 Applicants to Virginia General



Key Features (3 of 6): Pre-VR Earnings if Employed

Mean Pre-VR Earnings (if Employed) by Disability Type: 2007 Virginia General Applicants



Key Features of Our Approach (4 of 6)

- **Estimates the impacts of specific types of VR services rather than a “generic” VR service.**
 - Thus, explicitly recognizes that VR is an individualized program and that different VR participants receive different kinds of services.
- **Estimates employment and earnings impacts, service costs, and ROI at the individual level.**
 - Thus, can ask “what if” questions

Key Features (5 of 6): Service Providers

- **Services might also have differential impacts depending upon their source**
 - By agency counselors – client-specific information is limited in AWARE for this cohort
 - Purchased from external vendors – available through AWARE by case and service category
 - Provided by state-operated rehabilitation facility (WWRC in Virginia)
- **We capture the following impacts relative to someone who did not receive the service from either source. For each DTERMPS category, estimate the impacts on employment and earnings when provided by:**
 - an outside vendor but not WWRC,
 - WWRC but not an outside vendor, or
 - both sources.

Key Features (6 of 6):

Ensure that VR Impacts are Due to VR Rather than Other Factors

- **Model includes about 25 control variables**
 - Demographics
 - Disability-related
 - Economic conditions, both local and national
 - Local proportion of employment in (a) federal government and (b) a different state
- **Model includes several state-of-the-science statistical features**
 - Two of these take advantage of the individualized collaboration between participant and counselor. The model makes use of resulting variation in the mix of services across counselors and across field offices

Overview of Cohorts and Context for Results

Overview of Cohorts: Applicants for DARS Services in SFY 2007

- **Separate analyses, by agency, for individuals with:**
 - **MI: Mental Illness:**
 - 27% of DARS cohort
 - **PI: Physical Disabilities**
 - 32% of DARS cohort
 - **CI: Cognitive Impairment (ID and LD)**
 - 24% of DARS cohort
- **2007 analyses include 59% of the 10,849 applicants to Virginia DARS**
 - **Does not examine results for individuals with low prevalence disabilities (e.g., those who are deaf/hearing impaired, those with autism) – numbers are too low for analysis**

Some Context for the Results (1 of 2)

- **The Great Recession of 2008 and beyond. Two sets of estimates:**
 - **Using employment & earnings through 2012, or 5 years of post-application data**
 - **... through 2017, or 10 years of post-application data**
- **Transition-age youths (under 24 years old) comprise a substantial portion of each cohort, 61% of the CI sample. Many were trying to get their first job in the depths of the Great Recession.**
- **The results on the next several slides focus on purchased services, while the overall results and rate of return estimates also include “in house” services provided through the field program and WWRC.**

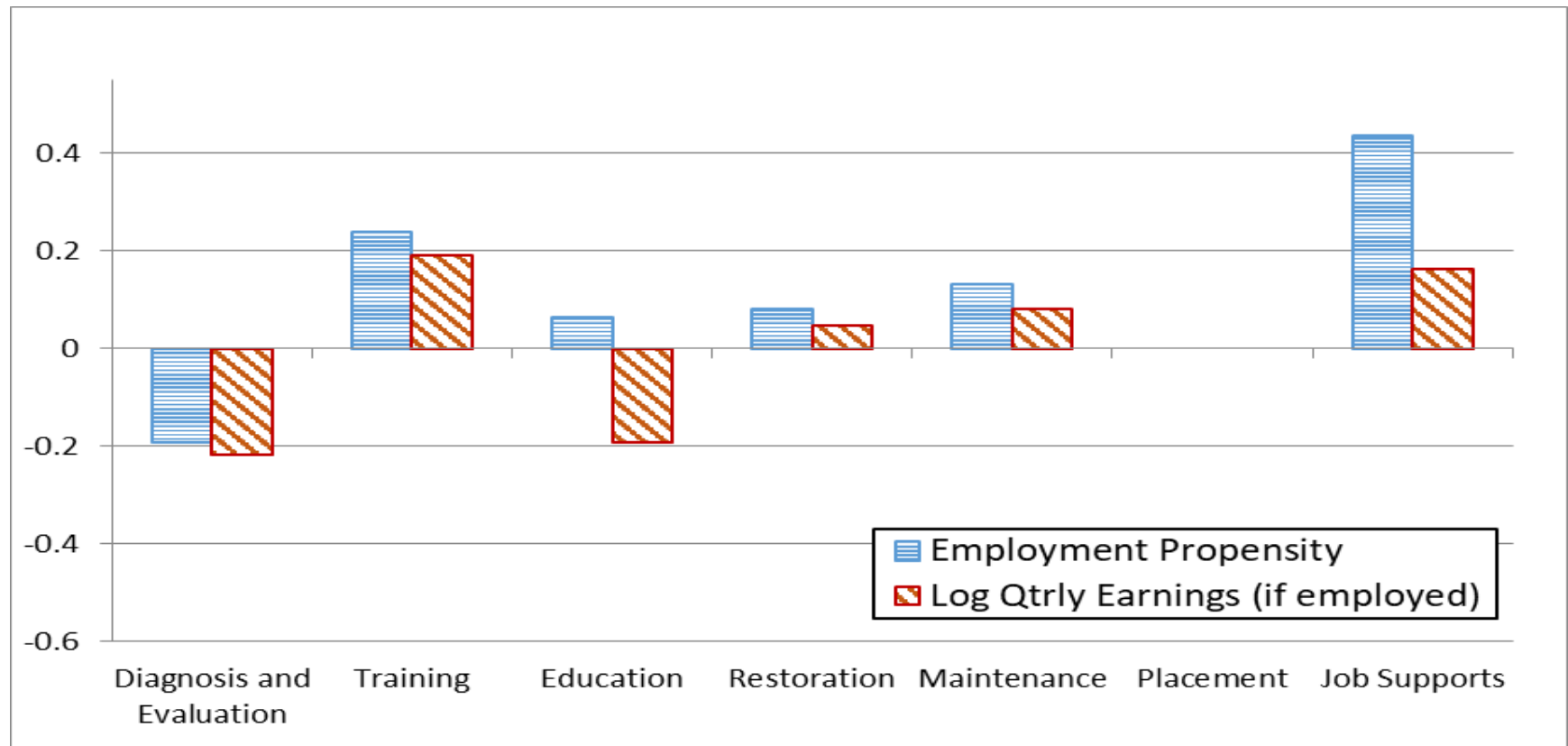
Some Context for the Results (2 of 2)

- The slides present changes in employment and earnings from pre- to post-VR (more than 2 years after application) for individuals who received specific services, and are relative to similar individuals who didn't receive that type of service.
- Research team wanted to include estimates of other VR impacts (levels of independent living, community integration, self-efficacy, etc.), but data on those kinds of outcomes aren't readily available.
- Results use service categories that were developed in consultation with VR staff, to reflect how DARS does business, and to be generally consistent with how services data are reported to RSA.
- Preliminary results were reviewed with DARS administrators to ensure they made sense/passed the "smell test."

Effects of Service Receipt on Employment and Earnings by Disability and Service Type

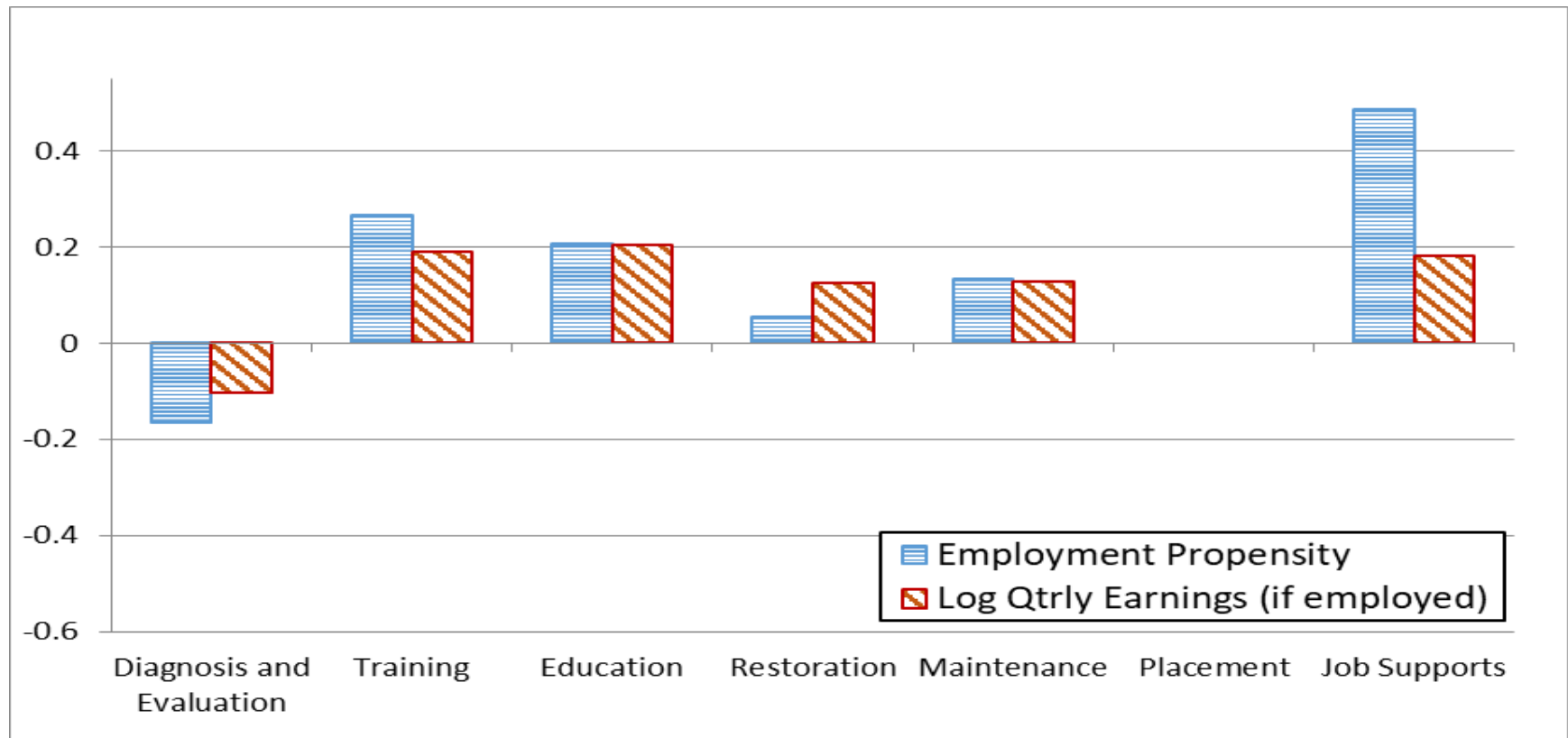
Individuals Diagnosed with a Mental Illness (MI): Employment & Earnings Impacts 2+ Years After Application Using 10 years of Post-Application Empl. & Earnings

Virginia DARS: Received Purchased Services Only



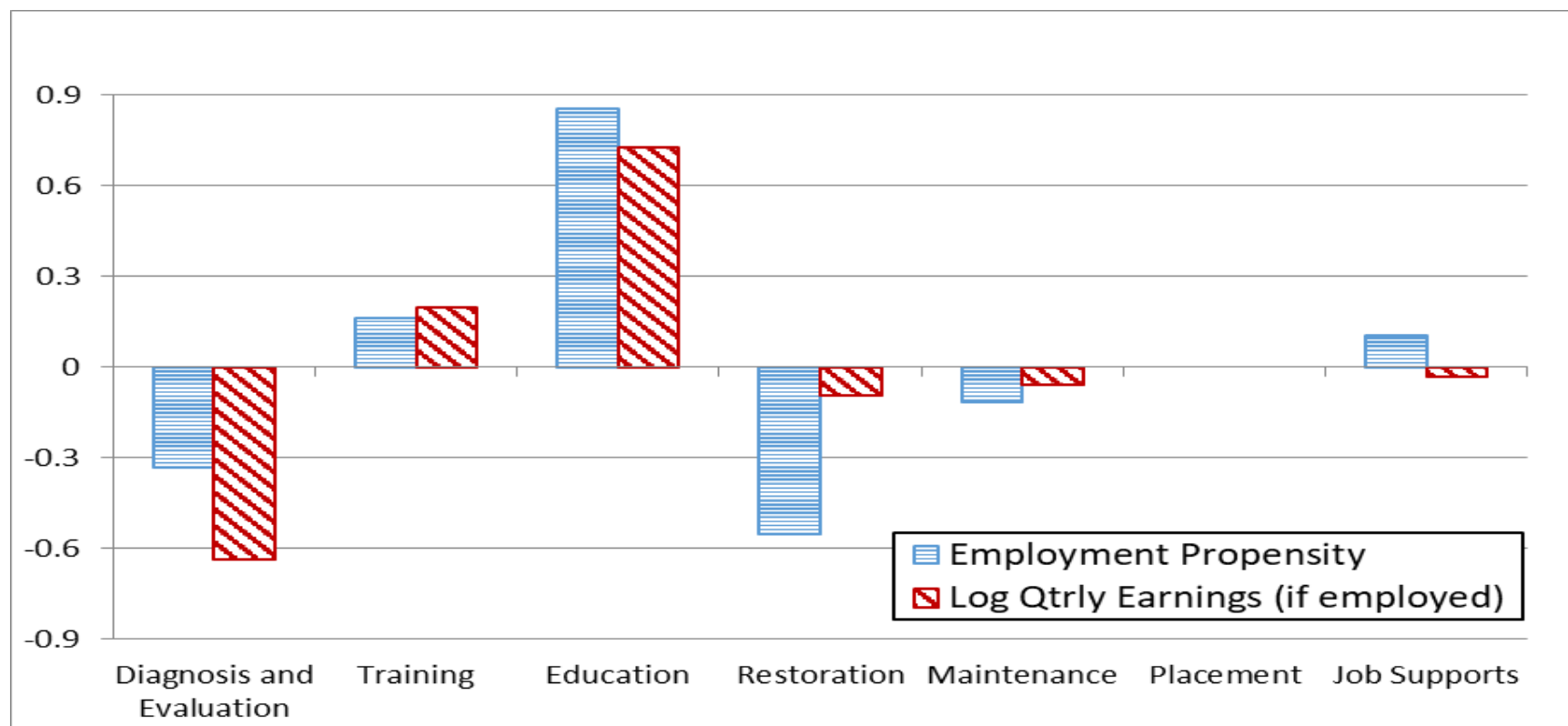
Individuals Diagnosed with a Physical Impairment (PI): Employment & Earnings Impacts 2+ Years After Application Using 10 years of Post-Application Empl. & Earnings

Virginia DARS: Received Purchased Services Only



Individuals Diagnosed with a Cognitive Impairment (CI): Employment & Earning Impacts 2+ Years After Application Using 10 years of Post-Application Empl. & Earnings

Virginia DARS: Received Purchased Services Only



Comparison of Results Using 10 vs. 5 Years of Post-App Data (1 of 2)

- The results on the previous slides estimated “long-run” service impacts by calculating changes from a pre-application period to a period 2+ through 10 years after application (8 years total).
- A comparable set of results were estimated by restricting the “long run” period to 2+ through 5 years after application (3 years total).
- MI and PI disability groups: in general, service impacts are little different between the two sets of estimates.

Comparison of Results Using 10 vs. 5 Years of Post-App Data (1 of 2)

- **CI disability type: more differences but most are small. By far the largest change in impacts is for Education services.**
 - **Using 5 years of data, employment rates changes are 29 percentage points higher than for those who did not receive education services but earnings for those with a job are about the same.**
 - **Using 10 years of data, employment rates changes are 86 percentage points higher than for those who did not receive education services and earnings are 73% higher.**
 - **Two asides**
 - **Only 1.3% of this cohort received education services so should not make too much of this result.**
 - **77% of this cohort are transition-age youths (under 24 years old) who were trying to get their first job during the Great Recession.**

Annualized Rates of Return (ROR) for VA DARS

By Disability Group

ROR: Combining Benefits (Labor Market Impacts) with VR Cost Estimates

- “A rate of return is the gain or loss on an investment over a specified time period, expressed as a percentage of the investment's cost” (*Investopedia*)
 - We measure the “gain” as the dollar value of the labor market impact results across all DTERMPS service categories, both purchased and from WWRC
 - We attempt to estimate the full “cost” of VR, including
 - Purchased services
 - WWRC charges for services
 - ACP costs (administrative, counseling, and placement services)
- A positive ROR indicates that employment and earnings “gains” more than covered VR “costs.”
 - A zero ROR indicates that “gains” just offset “costs.”
- The long-run annual return is about 1% in money market accounts and 10% in the U.S. stock market.

Annualized Rates-of-Return by Disability Group for VA DARS Using 5 vs. 10 Years of Empl & Earnings

20-year ROR for VA DARS 2007 Applicants				
		MI	PI	CI
% with Positive ROR:	5 years	67%	58%	25%
	10 years*	-2%	-4%	-3%
ROR at Median:	5 years	17.5%	15.5%	0.0%
	10 years*	-2.3%	-3.6%	<i>same</i>
75 th Percentile:	5 years	42.8%	43.1%	0.0%
	10 years*	+4.5%	+5.0%	<i>same</i>
90 th Percentile:	5 years	77.0%	77.0%	16.1%
	10 years*	+12.1%	-0.1%	+10.5%

* Values on the 10-Years row represent changes from RORs calculated with 5 years of data

Agency-wide ROI: The Elevator Speech

Rate of Return (ROR) vs. Return on Investment (ROI)

- In our context, ROR & ROI use the same two pieces, labor market gains from service provision vs. total VR costs.
 - ROR is expressed as a % return on those costs.
 - ROI is expressed as the \$ value of labor market gains per \$ of VR costs
 - In VR, commonly presented for the entire agency and per \$1,000 of VR costs
- The next slide presents agency-wide ROI results
 - This is possible because we estimate both ROR & ROI at the individual level.
 - Allows us to aggregate by any criterion (e.g., disability) up through the entire agency.

ROI Estimates for Virginia DARS Applicants in SFY 2007: the “Elevator Speech”

For those VR applicants in 2007 who received VR services, 55% enjoyed earnings gains that exceeded the cost of their VR. For every \$1,000 spent by DARS, the average (median) consumer earned \$5,000 more over 10 years than they would have earned without VR services... And the top 10% earned \$76,000 (or more) over the same period.

Comparing the “Elevator Speech” Over Time and with 10 vs. 5 Years of Empl. & Earnings

- There are 3 statistics in the elevator speech.
 - How do they differ from those for applicants in 2000?
 - How do they differ when using 10 or 5 years of employment and earnings data?

	2000: 5 Years	2007: 10 Years	2007: 5 Years
% with Positive ROI	80%	55%	55%
ROI at Median	\$7,100	\$5,000	\$7,300
90 th Percentile	\$45,100	\$76,000	\$58,300

Comments, Questions, Discussion

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