



The Distribution of “Returns to Education” for People with Early-Onset Disabilities

Andrew J. Houtenville, Ph.D.
Associate Professor of Economics
University of New Hampshire

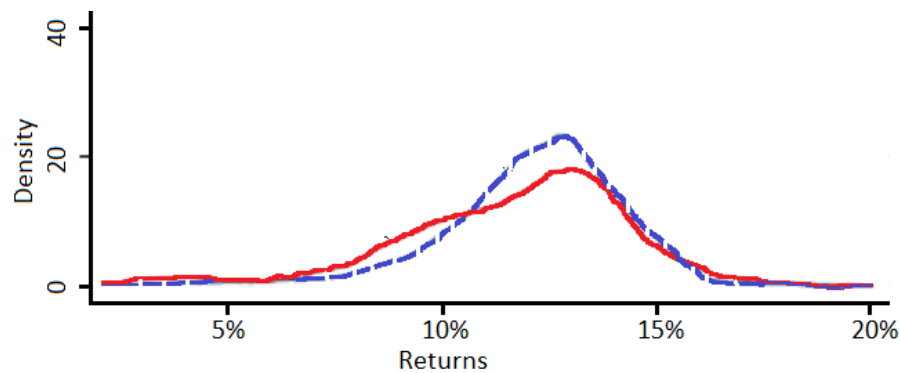
Le Wang, Ph.D.
Assistant Professor of Economics
University of Alabama





Overview

- Returns to Education = the change in salary resulting from an additional year of education.
- Research Question: are the returns to education of people with disabilities similar to the returns to education of people without disabilities?
 - Not just at the “mean” but the shape of the distribution.
- Results: Suggest that the distributions are quite similar.





Source of Positive Returns to Education

- Human Capital Theory: Education is an investment (hence “returns”).
- Screening Theory: Educational processes don’t add skills, but rather sort individuals by pre-existing productivity.
- Job Search and Signaling Theory: Expands quality of network and “signal.”
- Spurious Correlation: Family network is positively related to educational achievement and wages/salary.





Why Returns Would Differ for PWD?

- Substitutes in Production: Disability and education may be substitutes in production—education mitigates the impact of a disability—thus an additional year of education is more valuable to people with disabilities:
- Greater Signal: The value of the “signal” provided by additional education may be more valuable, perhaps overcoming stereotyping or signaling perseverance.





Why Investigate the “Distribution” of Returns?

- Conditional means (regression coefficients) carry very little information.
- Variation in returns exist in other subpopulations.
- For policy:
 - Individuals in the “left-hand tail” (with low returns) reflect challenges to the efficacy of education.
 - Individuals in the “right-hand tail” represent evidence of success that could potentially be replicated with interventions.



Methods

- Survey of Income Program Participation (SIPP):
 - 2008 Wave 6: May 2010 - August 2010.
- Regression coefficients are “conditional means”
- Our Approach (Henderson, Polachek, & Wang, 2011).
 - Calculate the returns for every individual in the sample with early onset-disabilities.
 - Draw the distributions of these individuals.
 - Do the same for the sample without disabilities.
 - Test if the distributions are different.



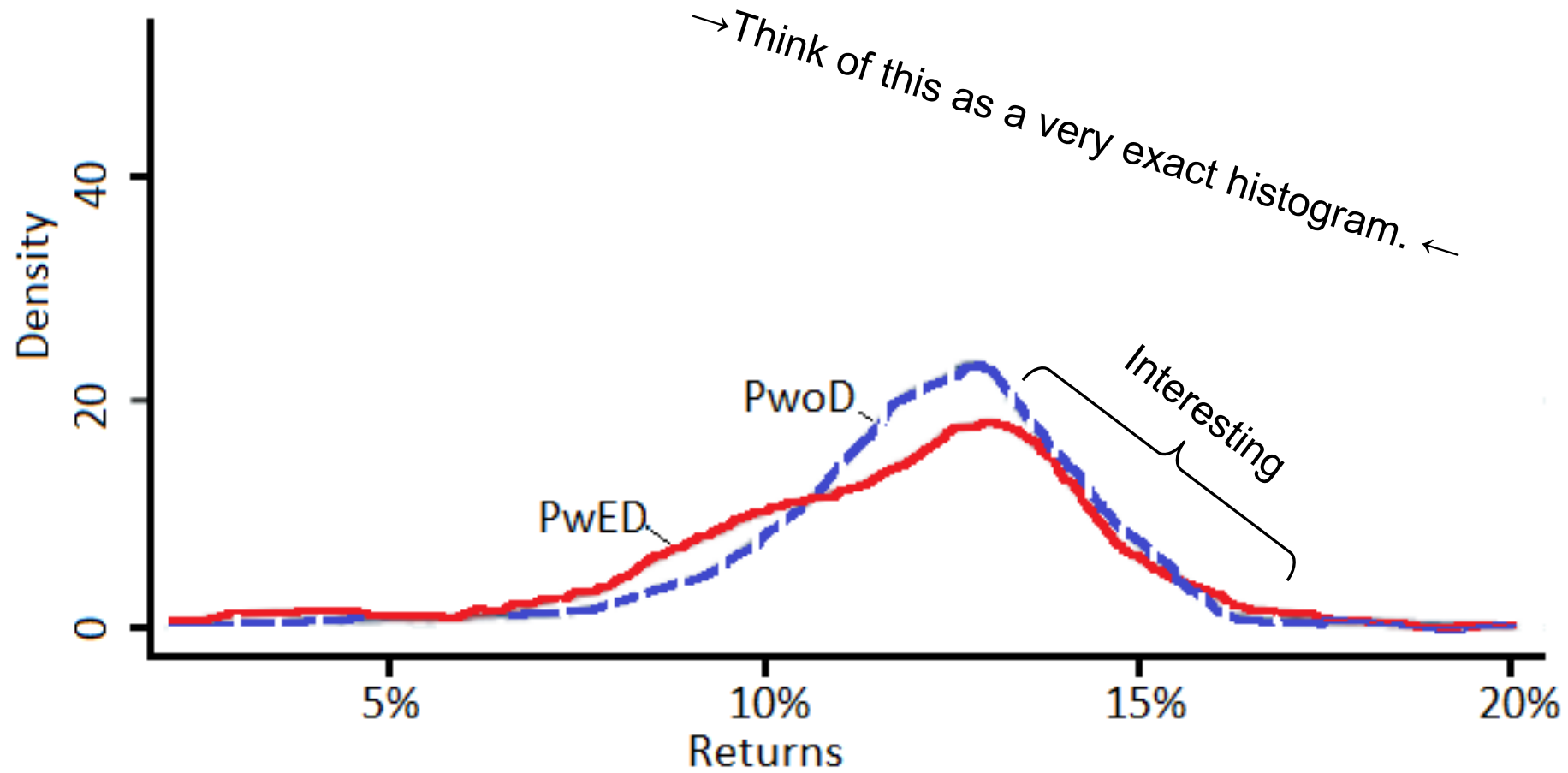


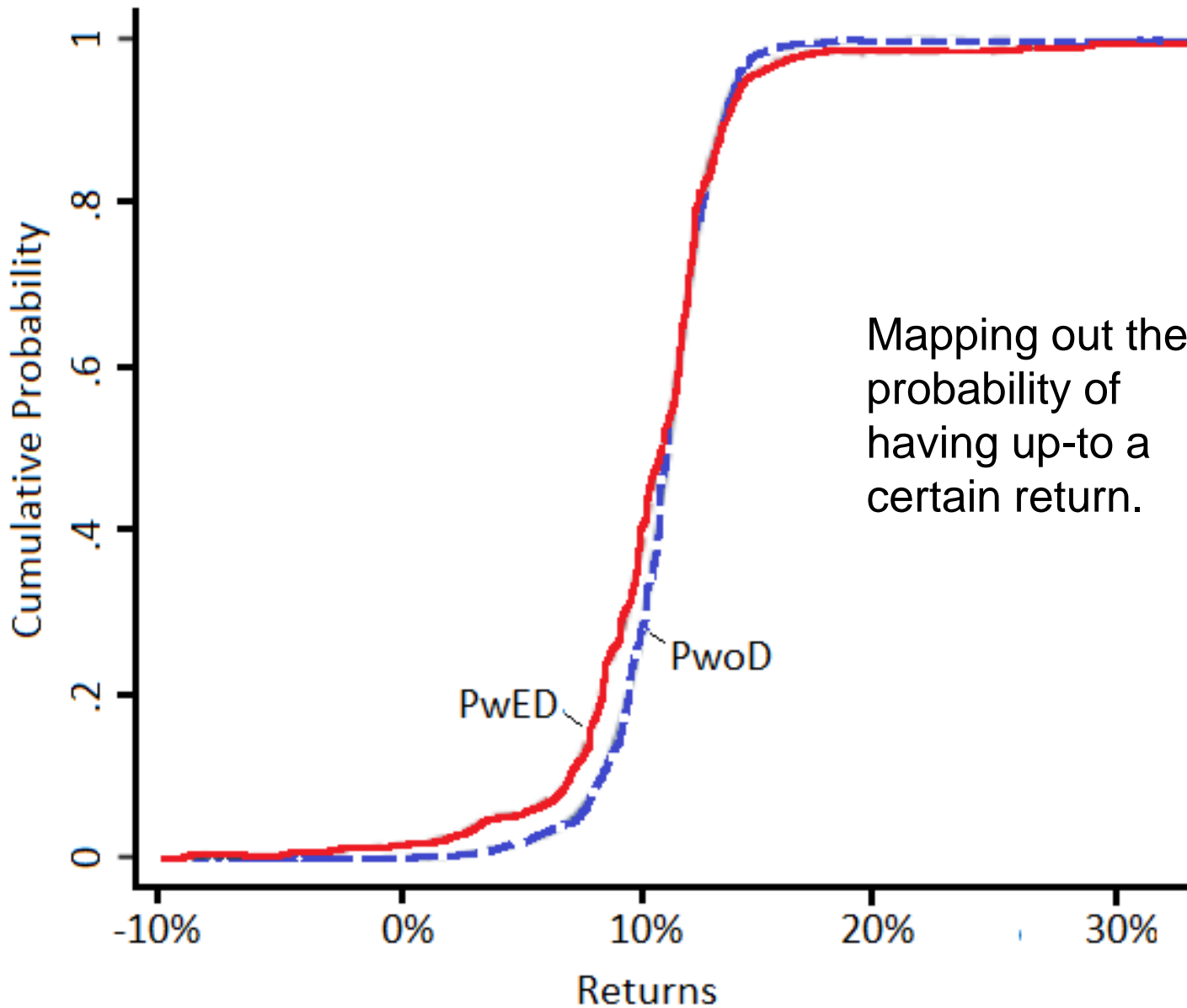
Standard Log-Wages/Salary Regression

Time Period	Returns	
	No Disability	Early-onset disability
May 10 - Aug 10	0.099***	0.083***
Std. Errors.	(0.001)	(0.010)
Observations	19,973	322

- For people without disabilities, an additional year of education is associated with a 9.9% increase in annual wage/salary (consistent with the general literature).
- For people with early-onset disabilities, an additional year of education is associated with a 8.3% increase in annual wage/salary





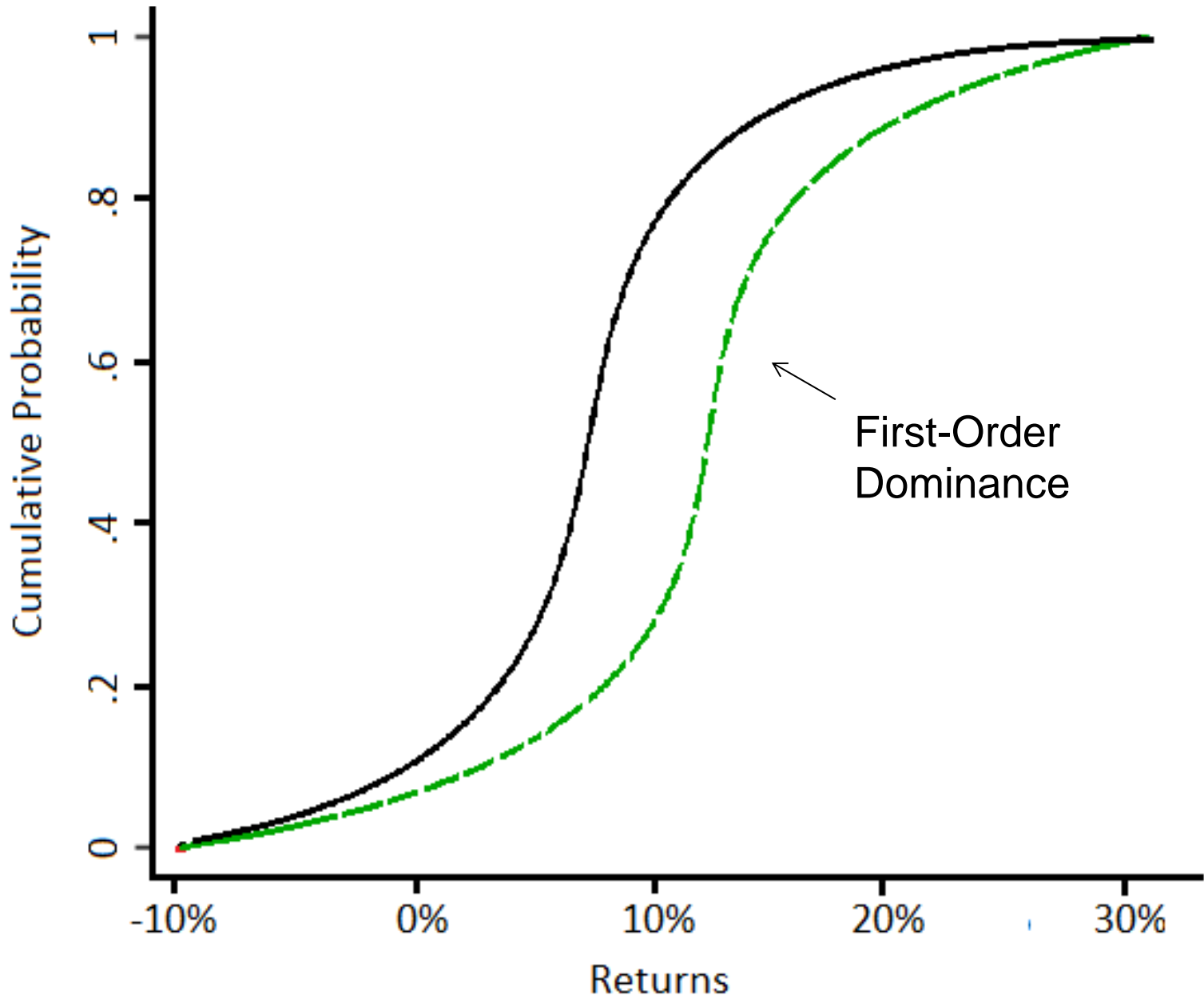


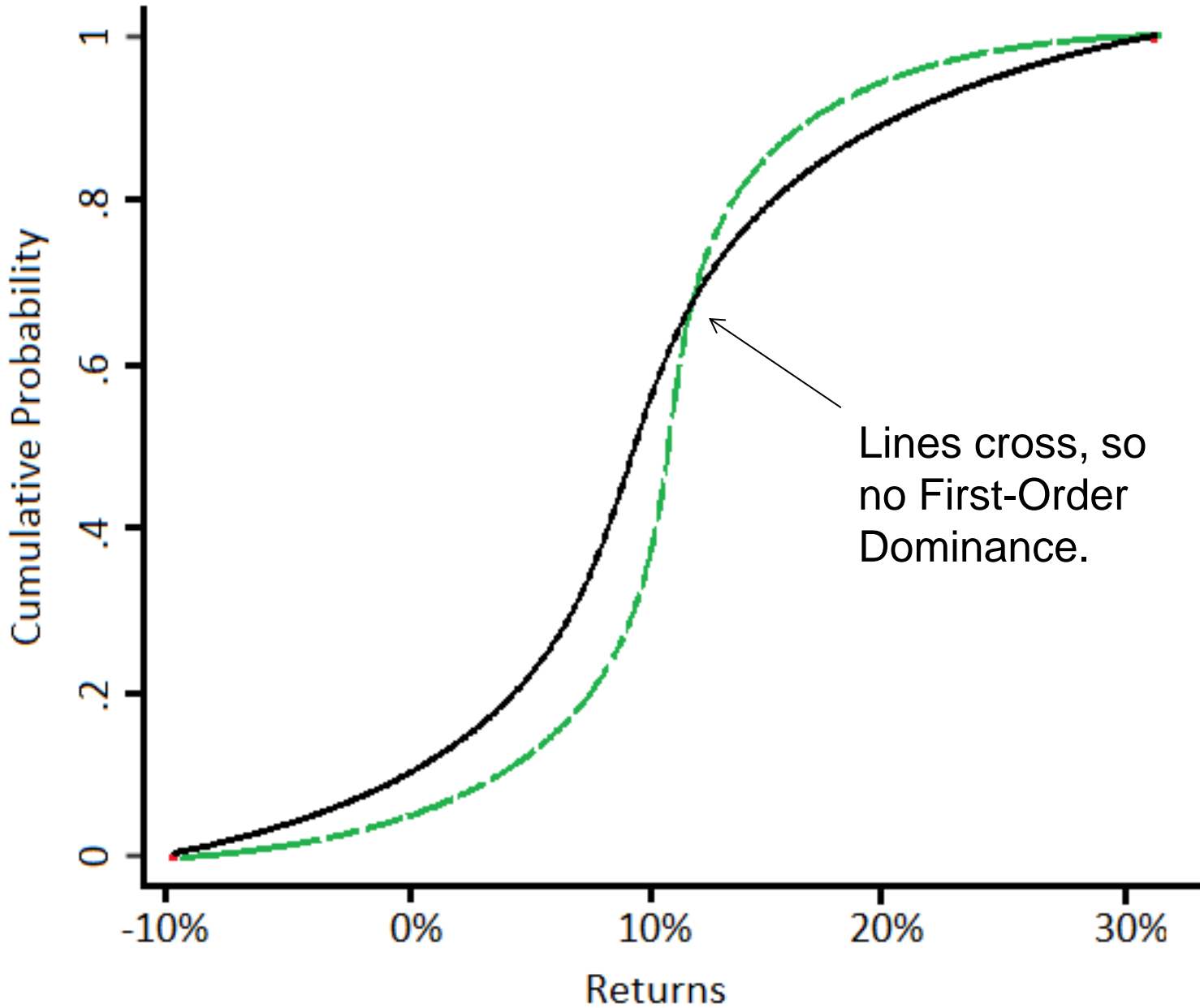


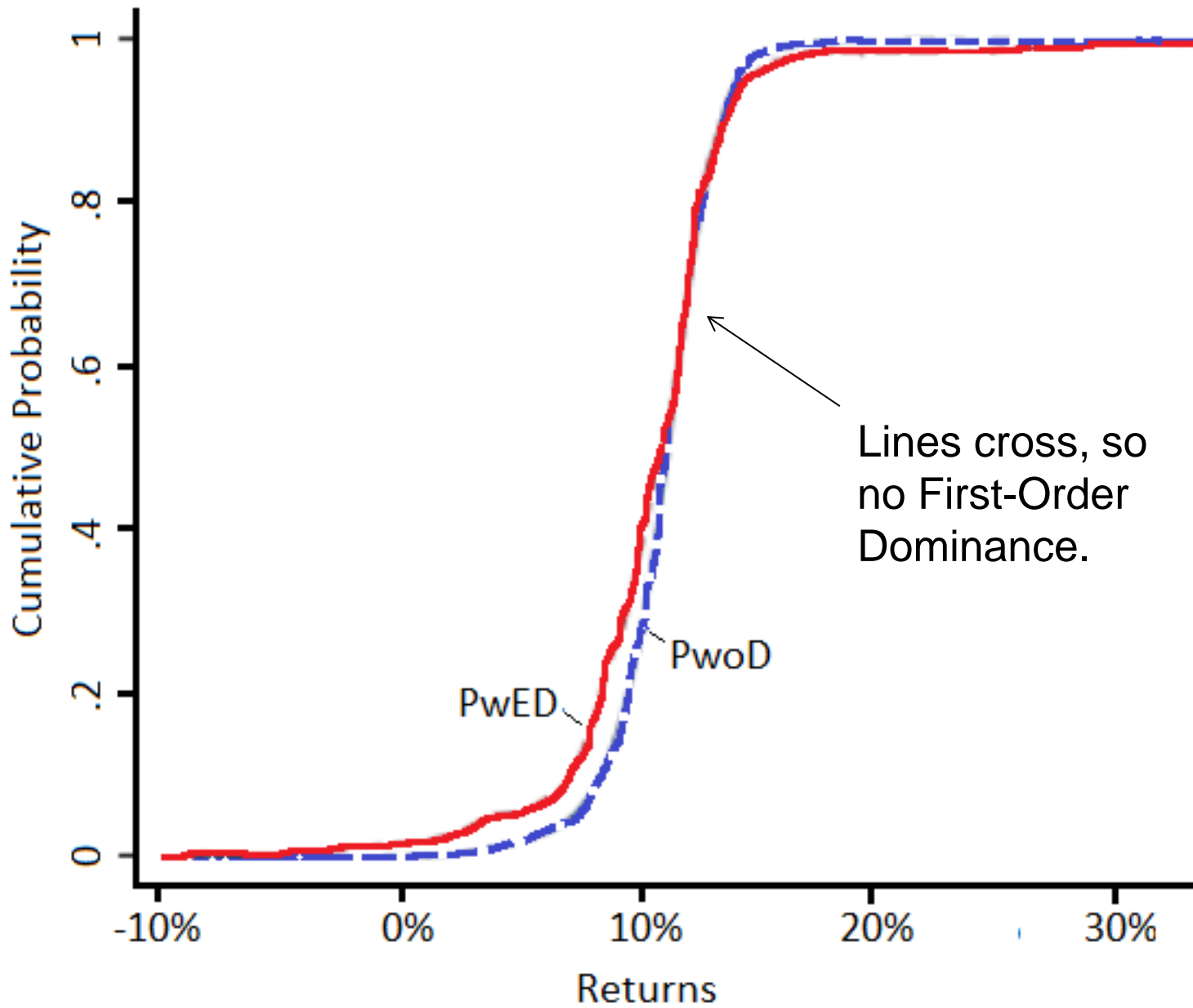
First-Order Stochastic Dominance

- Definition: The distribution of people without disabilities would be first-order dominant, if for any given return, people without disabilities have a lower (or equivalent) probability of having up to that return.
- The cumulative probability is always lower (i.e., to the right).







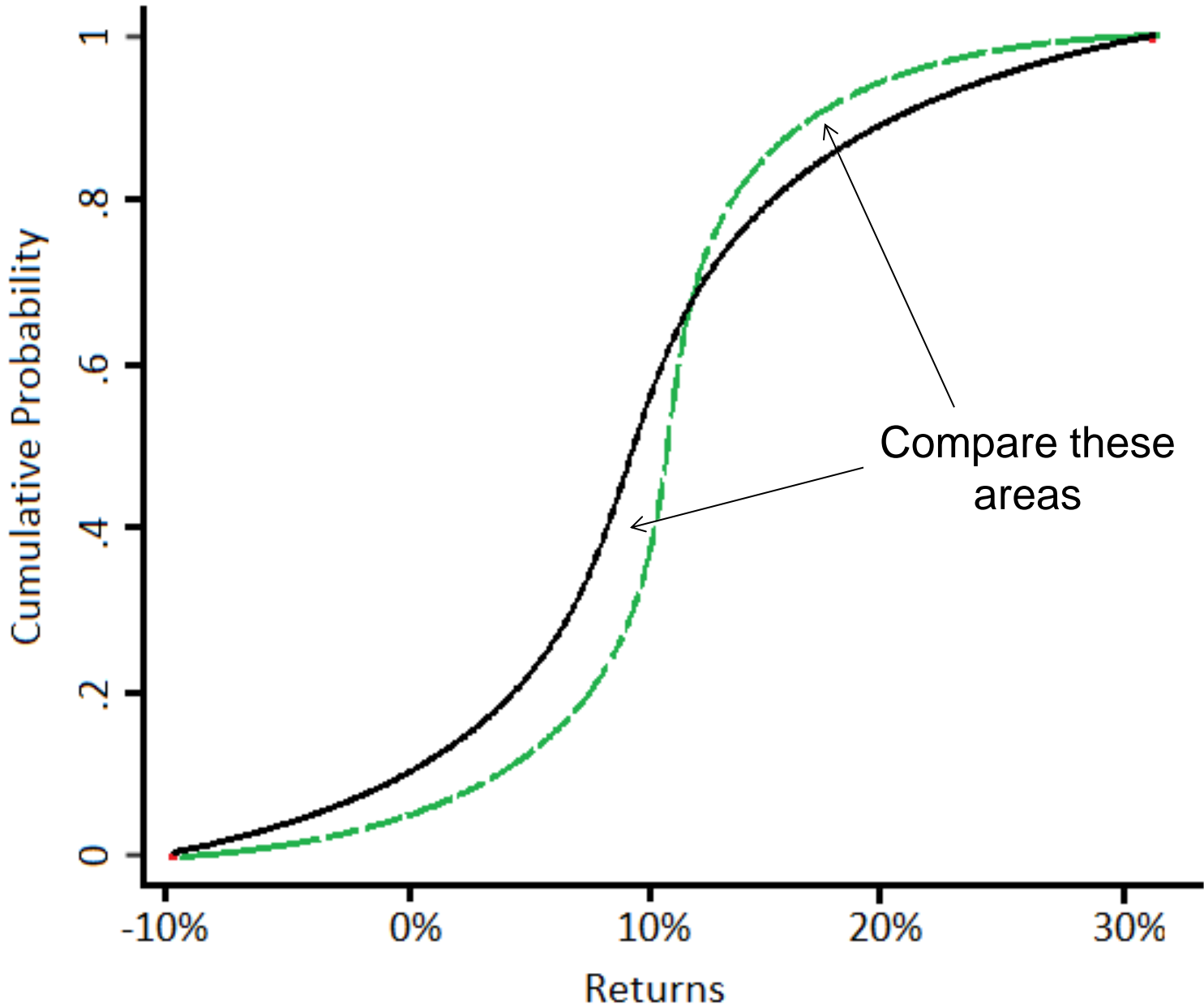


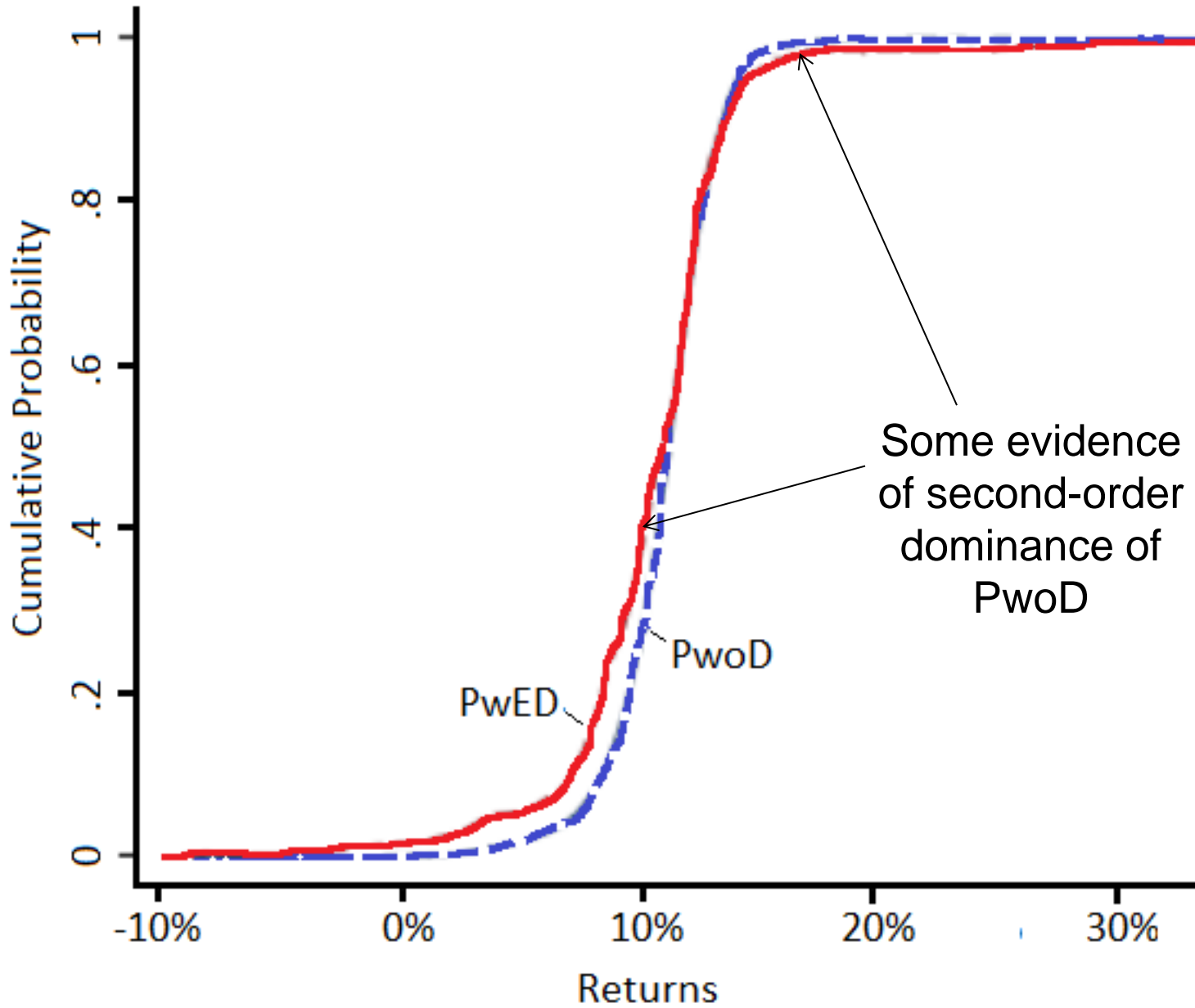


Second-Order Dominance

- Definition: The sum of cumulative probabilities (the area under curve) is less for the dominant distribution.
 - Curves cross at least once.
 - Compare the areas underneath the CDFs.
 - It is like a horse race to see who is likely to have higher returns over all possible returns.









Quick Comments

- Distributions: quite similar.
- Looking at the whole distribution and dominance: is a more powerful measure than difference in conditional mean.
- Policy Levers: Identifying who is in the lower and upper tails help identify policy levers (challenges and opportunities).

