



Estimating the Impact of Reserve Activation on Earnings: Survey vs. Administrative Data

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Plan for the Talk



- Policy Background
- Measuring the Right Outcome
- Asking the Right Policy Question
- Policy Background, Revisited

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Policy Background I

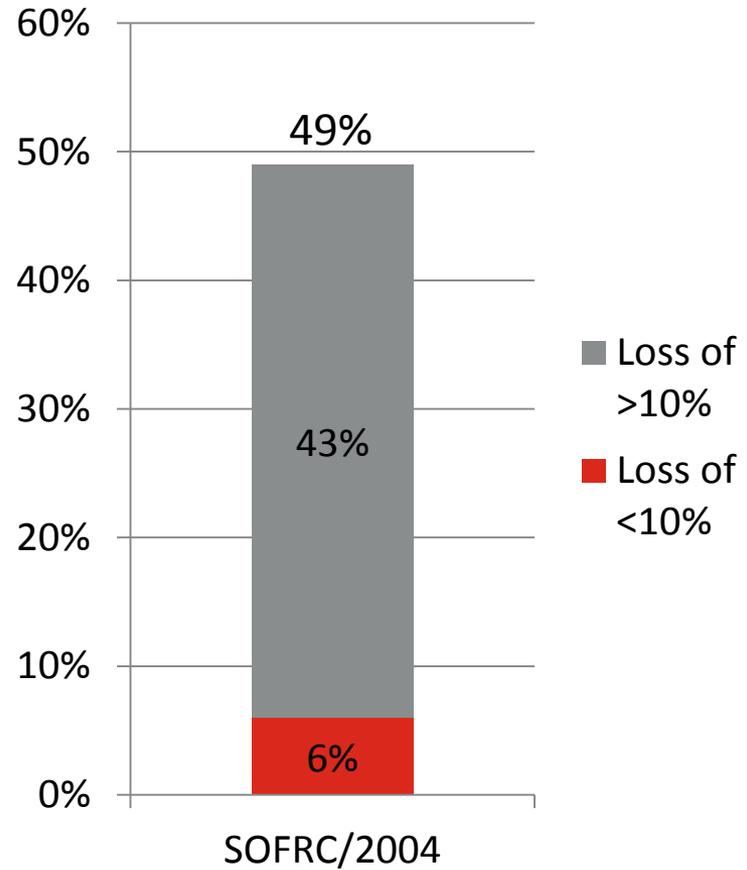


- Following the events of 9/11, the United States began a three front war:
 - In the homeland, in Afghanistan, and in Iraq
- *And ran out of troops*
- In response, the military made unprecedented use of the reserves
 - Who had—and were forced to take leave from—civilian jobs

Policy Background II



- Congress got complaints about lost income
 - And, DoD's Status of Forces Survey (SOFS-RC) confirmed those complaints
- Legislation was introduced to compensate reservists for their losses
 - DoD was skeptical, requested a study



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Earnings have Many Components



Component of Earnings	Before Activation	During Activation	Taxable?
Civilian Wages	✓		Yes
Drill Pay	✓		Yes
Basic Pay		✓	Maybe
Basic Allowances (BAS and BAH)		✓	No
Special Pays (e.g., Combat Pay, Family Separation Allowance)		✓	No

Only Some Components are Taxable



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Policy Relevant Concept Includes



- All components of income
- And value of “tax advantage” of some military earnings

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Survey Wording is Problematic



- In an ad hoc topic module, SOFS-RC asked:
How much was your average monthly <military/civilian> compensation <prior to/during> your most recent activation, before taxes and other deductions

Survey Wording is Problematic



- In an ad hoc topic module, SOFS-RC asked:
How much was your average monthly <military/civilian> compensation <prior to/during> your most recent activation, before taxes and other deductions
- Only a single question
 - Pre-activation earnings report is retrospective; with potential for recall bias
 - Unclear which pays and allowances should be included
 - Good reporting of multiple sources of income/earnings requires asking about each component (Bound, Brown, and Mathiowetz, 2001; Roemer, 2000; Nelson et al., 1998)
 - Likely to lead to under-reporting of pay while activated, and thus to over-reporting of losses

Survey Wording is Problematic



- In an ad hoc topic module, SOFS-RC asked:
How much was your average monthly <military/civilian> compensation <prior to/during> your most recent activation, before taxes and other deductions
- Explicitly instructs not to include tax advantage
 - Again, leading to under-reporting of pay while activated, and thus to over-reporting of losses

Administrative Data is Detailed



	Component of Earnings	Before Activation	During Activation	Taxable?
SSA (annual) earnings data	Civilian Wages	✓		Yes
	Drill Pay	✓		Yes
	Basic Pay		✓	Maybe
Military pay files	Basic Allowances (BAS and BAH)		✓	No
	Special Pays (e.g., Combat Pay, Family Separation Allowance)		✓	No

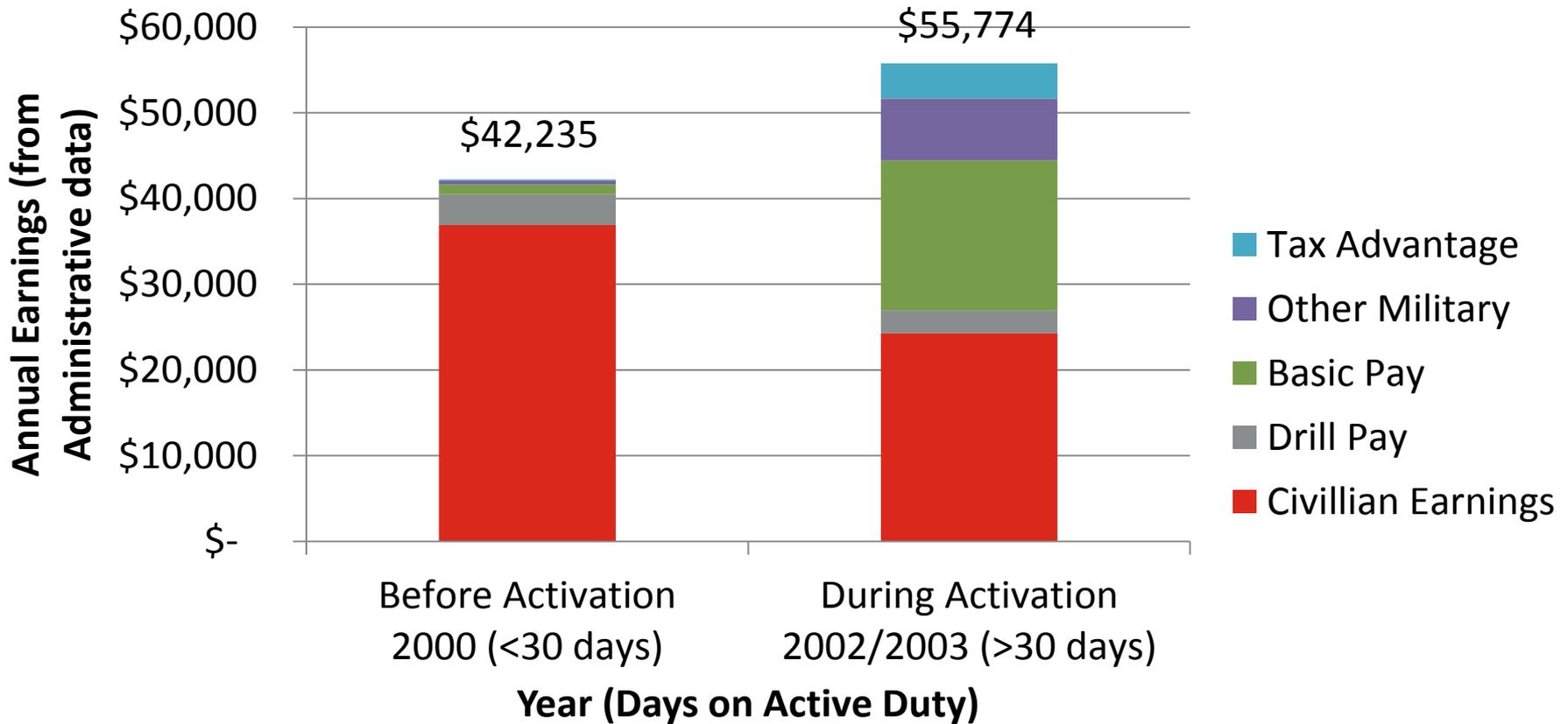
And Tax Advantage Can be Imputed



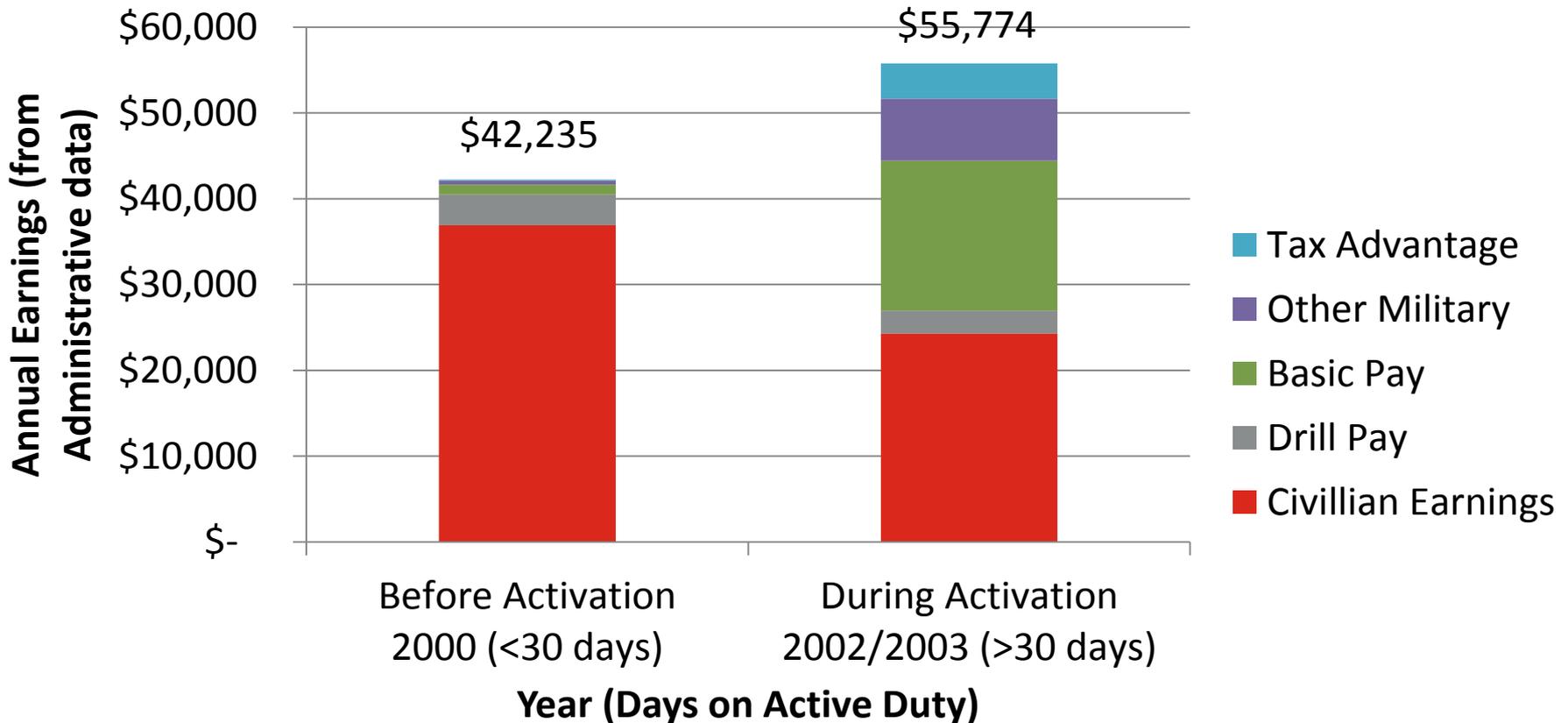
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- Have annual earnings
 - Make reasonable assumptions (single, standard deduction)
 - This is a standard DoD computation

Earnings Components Matter

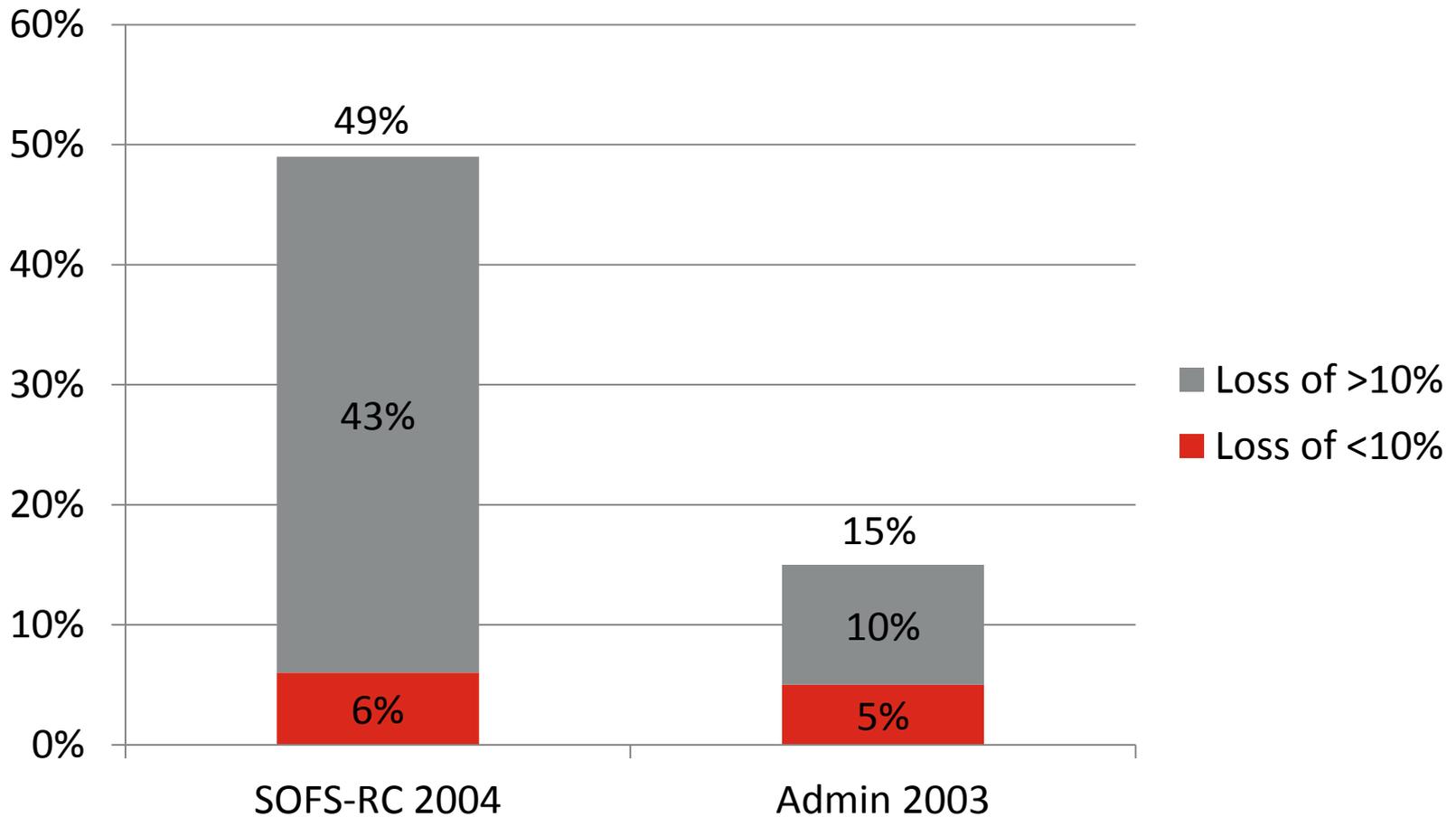


Earnings Components Matter



This is mean earnings; what about losses?

Earnings Loss Due to Activation



Measuring the Right Outcome



With Survey Data

- It's often unclear what responses mean
 - Probably varies across respondents
 - Contributing, in part, to response errors
- Plus, conventional survey response bias (important here)
 - Including recall bias for pre-activation earnings
 - And, non-response bias (not important here)

Measuring the Right Outcome



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With Admin Data

- You know what you know; arguably here, it's what you want to know
 - In this case, that's (mostly) what you want to know
- But probably some bias due to missing informal sector earnings before activation
 - Activation is “formal sector”
 - Irregular and informal earnings induce some reserve enlistment
 - Similar issues for job training programs (see Barnow and Greenberg, 2015)

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Think Like an Evaluator



- Previous analysis is pre/post
 - Presumably there were (at least some) losses among those not activated
- Administrative data includes those not activated
- ... allowing difference-in-differences
 - Survey questions only asked of those activated
- Administrative data includes detailed covariates (e.g., gender, component, rank)
- ... allowing stratifying on observables
 - Losses among those not activated might (and do) vary with observables

Difference-in-Difference Estimate



- Losses are common among those not activated

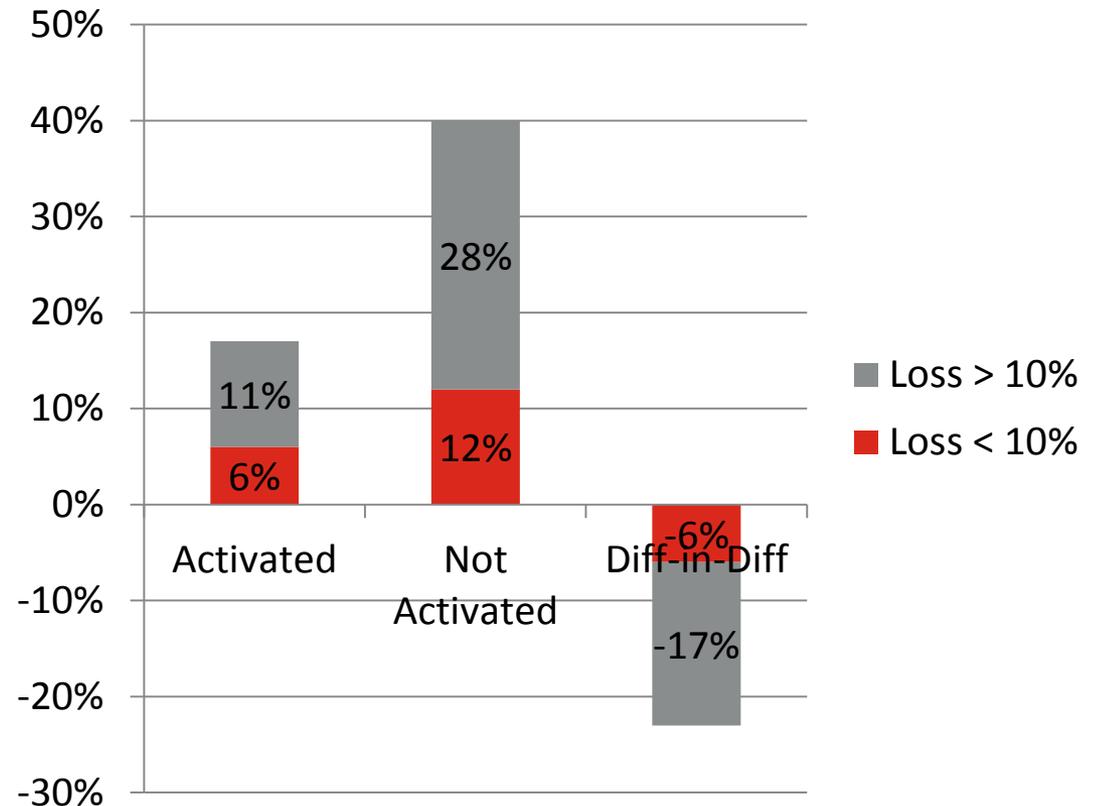
- Mostly young males, recently separated from active duty
- Unstable income
- Perhaps why they joined the reserves



Difference-in-Difference Estimate



- Losses are common among those not activated
 - Mostly young males, recently separated from active duty
 - Unstable income
 - Perhaps why they joined the reserves
- So losses are actually less common among those activated



Asking the Right Policy Question



- These administrative data measure outcomes
 - Treatment Group (i.e., those activated) and Comparison Group (i.e., those not activated)
 - Before and during treatment (i.e., activation)
 - With detailed covariates from military personnel records (opposite of usual case)
 - On very large samples
- Allowing
 - Not just pre/post, but also diff-in-diff
 - Careful adjustments for heterogeneity of trends and impact
 - Highly disaggregated estimates

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Policy Background, Revisited



- These results were very popular with DoD
 - Briefed all the way up to #3 in Pentagon (Under Secretary of Defense Personnel and Readiness)
 - Cleared for public release in record time
- Briefed to HASC/House Armed Forces Committee and SASC/Senate Armed Forces Committee staff
 - Apparently as a result, legislative proposals stalled

References: On this Application



- Loughran, D. and J.A. Klerman. 2012. “The Effect of Activation on the Post-Activation Earnings of Reservists.” *Labour Economics*. 19:1(18-26)
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 - IOM (2010) *Returning Home from Iraq and Afghanistan: Preliminary Assessment of Readjustment Needs of Veterans, Service Members, and Their Families* (Committee on the Initial Assessment of Readjustment Needs of Military Personnel, Veterans, and Their Families; Board on the Health of Selected Populations).

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 - *Effect of Activation on Reservist Earnings*. RAND Research Brief, RB-9183-OSD.
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 - Selected Press Coverage: *Wall Street Journal* (“Combat Pay” Editorial, 1/30/06), *AP* (including *Washington Post*, “Study Most Reservists Earn More in Combat,” 1/25/06), *USA Today* (Reserve Members on Active Duty Earn More, Pay Study Says,” 1/25/06), *UPI* (“Most Reservists Said Benefit in War,” 1/26/06).
 - GAO. *Personnel: Reserve Component Servicemembers on Average Earn More Income while Activated*. GAO-09-688R, June 23, 2009.

References: On Job Training



- Barnow, Burt S., and David Greenberg. "Do Estimated Impacts on Earnings Depend on the Source of the Data Used to Measure Them? Evidence From Previous Social Experiments." *Evaluation review* (2015): 0193841X14564154.
- And a Special Issue of *Evaluation Review* which is "in process"



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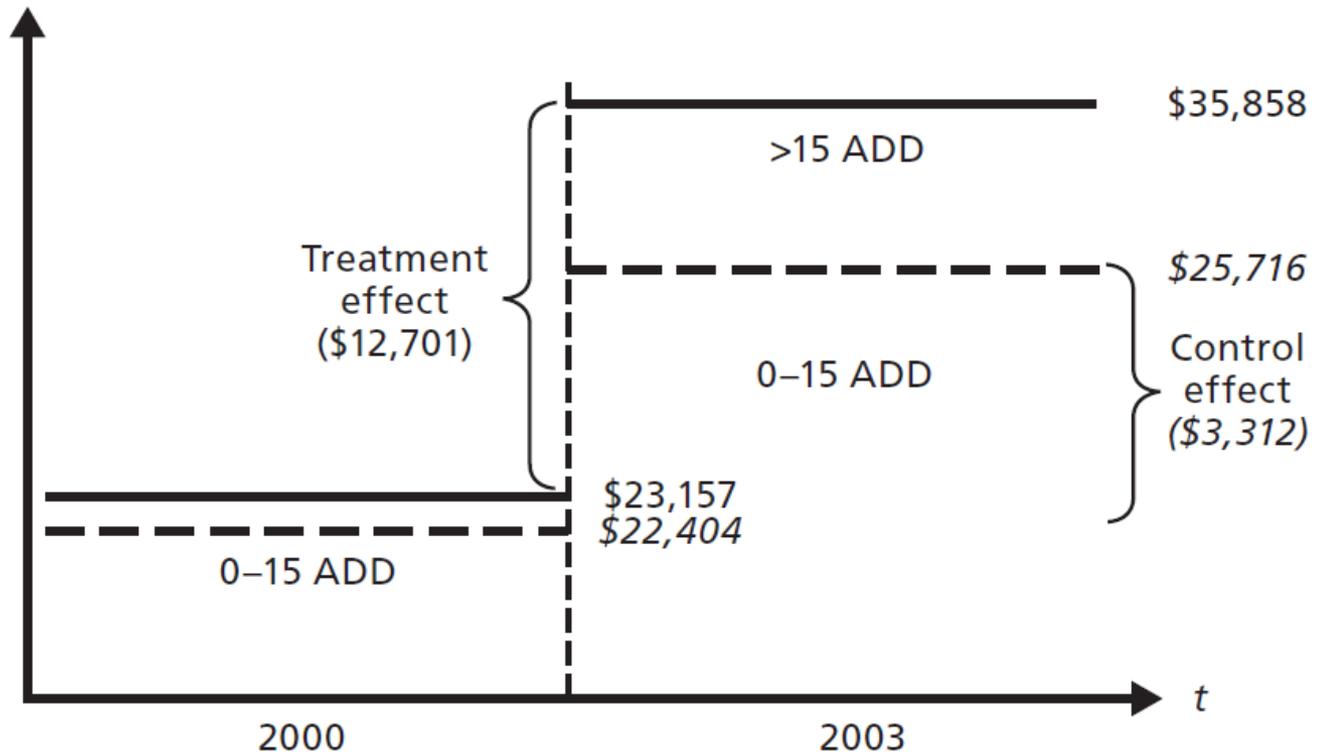
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Not Pre/Post, but Diff-in-Diff



Taxable-Equivalent Earnings



Net effect = Treatment group effect – Control group effect
 (\$9,389) (\$12,701) (\$3,312)

Other Cases are Less Clear: Job Training and Earnings



- Earnings are very hard and very expensive to collect well in a survey
 - (to a first order) for impact analysis, that's balanced T vs. C
- Admin data on earnings
 - Much cheaper, higher quality, and “you know what you know”
 - But (by definition) misses “unreported income”
<some evidence of that here; not discussed>
 - Which appears to be important for the disadvantaged populations to which we provide job training
- And it may be worse than that
 - Plausibly, job training/activation moves people from the informal/unreported sector to the formal/reported sector
 - Suggesting admin-based impact estimates are biased up