



Is College Worth It? For Whom?

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Bachelor's Degrees Are Worth It

Study	PV Earnings over HS Graduate (*Net of college costs)	Source
Agan (2013)*	\$243,700	NLSY79
Tamborini et al. (2015)	\$266,100	SIPP, IRS
Kim et al. (2015)	\$321,100	SIPP, IRS
Mitchell (2014)	\$354,300	SIPP 2008
Barrow & Malamud (2015)*	\$434,900	CPS 2013
Avery and Turner (2010)*	\$462,000	CPS2009
Webber (2014)*	\$492,400	NLSY79, ACS
Herschbein & Kearney (2014)	\$610,000	ACS 2009-12
Barrow & Rouse (2005)*	\$629,400	CPS 2004
Average (N=9)	\$423,800	

CAPSEE Agenda

- ① **What are the employment/earnings benefits of educational pathways and awards?**
 - For sub-BA awards, certificates, non-completers, by field of study, at for-profits, after remediation

- ② **What institutional programs and public policies improve completion rates and employment/earnings?**
 - Aid, Work Study, SAP incentives, One-Stop Centers

CAPSEE Data

- Transcripts across state-wide community college and four-year college systems for FTIC cohorts in 2000s
- Transfer data from National Student Clearinghouse
- Earnings data from UI systems pre- and post-college
- Many states: AR, CA, MI, NC, NY, OH, VA, WA

Returns to Community College

By Award

If Transfer

On Entry Status

Per Pathway

Returns to Community College

By Award

- Associate degree, certificate/diploma, different non-award

If Transfer

- For-profit college, four-year college, with award

On Entry Status

- HS quality, college-ready, age

Per Pathway

- College, subject, sequence, aid, while working

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Per Pathway

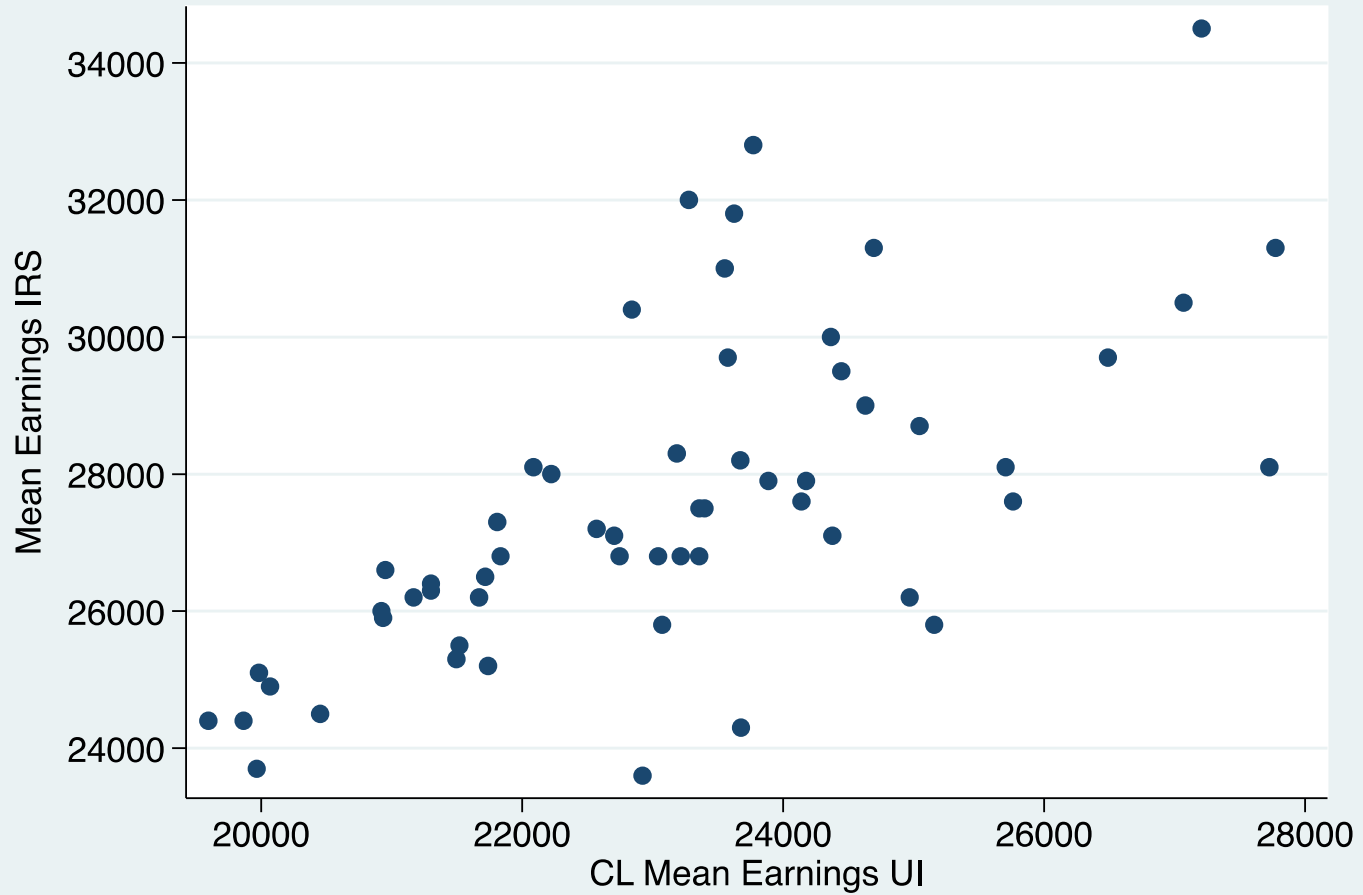
- College, subject, sequence, aid, while working

Data quality, methodology

Data

- Missing data:
 - Migration out of state; uncovered by UI; reverse transfers
- Window for follow-up is too short:
 - AAs earnings overtake non-completers only after 15Q
 - Over 35Q, earnings gradient for non-completers is flat, for AAs is linear (for BAs is growing)
- Need individual-level data

College-level Earnings: NC Community Colleges





Split by Gender: Female Students

Different characteristics:

- More prepared (HSGPA +0.15)
- Older and richer (Age > 24 +8%p; EFC +\$1950)

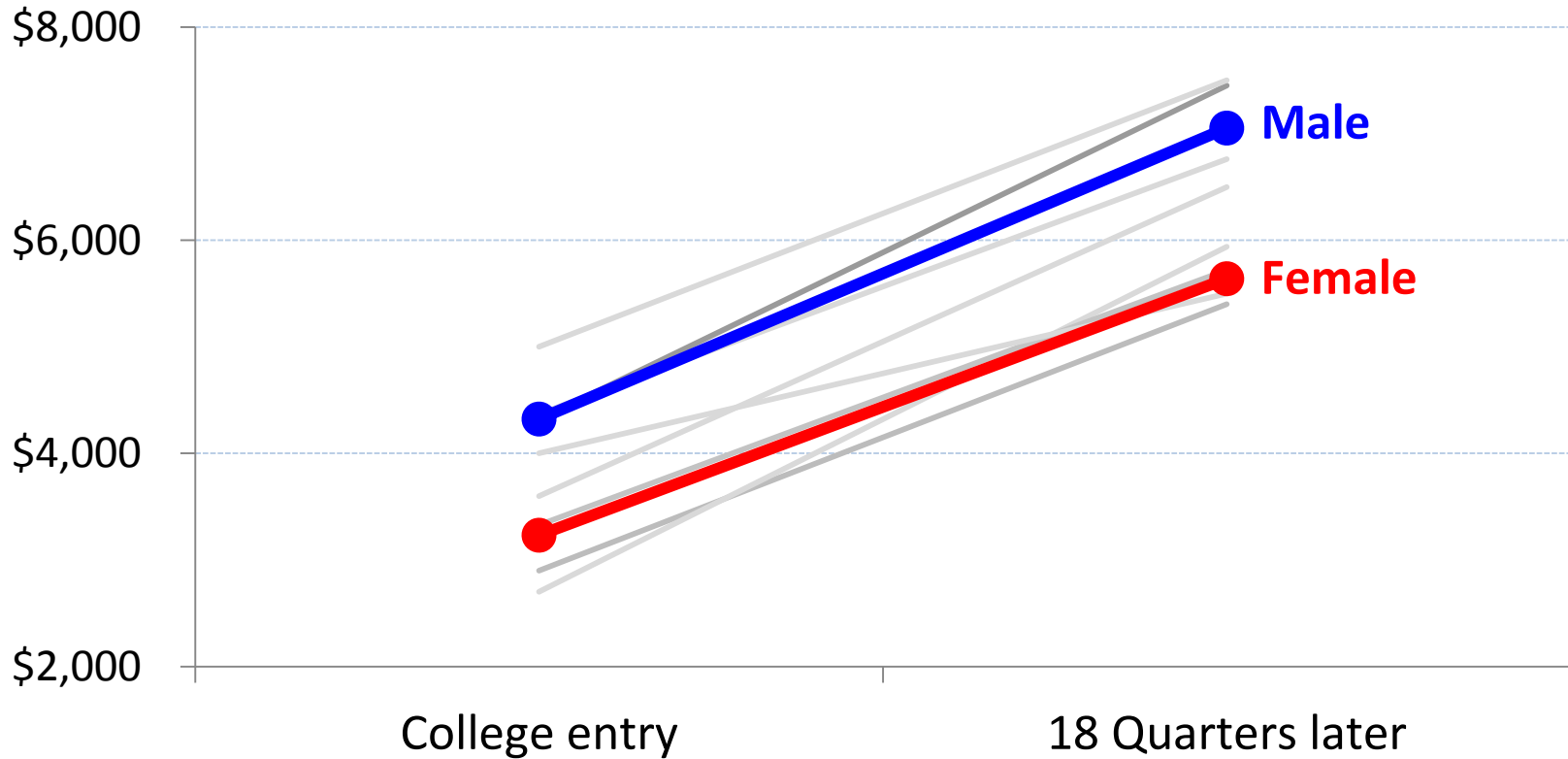
Choose differently:

- More intent on AA (+11%p)
- Study health/nursing (++++)

Do better:

- Do better in first semester (CGPA +0.24)
- More credits (+6)
- More awards (+5%p)

Quarterly Earnings by Gender Degree Completers (AR, KY, MI, OH)



Methodology

Fixed Effects or OLS estimations?

- OLS:
 - Sensitive to omitted variable bias
 - But easy to interpret and robust
- Fixed Effects:
 - Control for unobservable, unchanging individual heterogeneity
 - But not easy to interpret although robust

Fixed Effects: AA over No Award

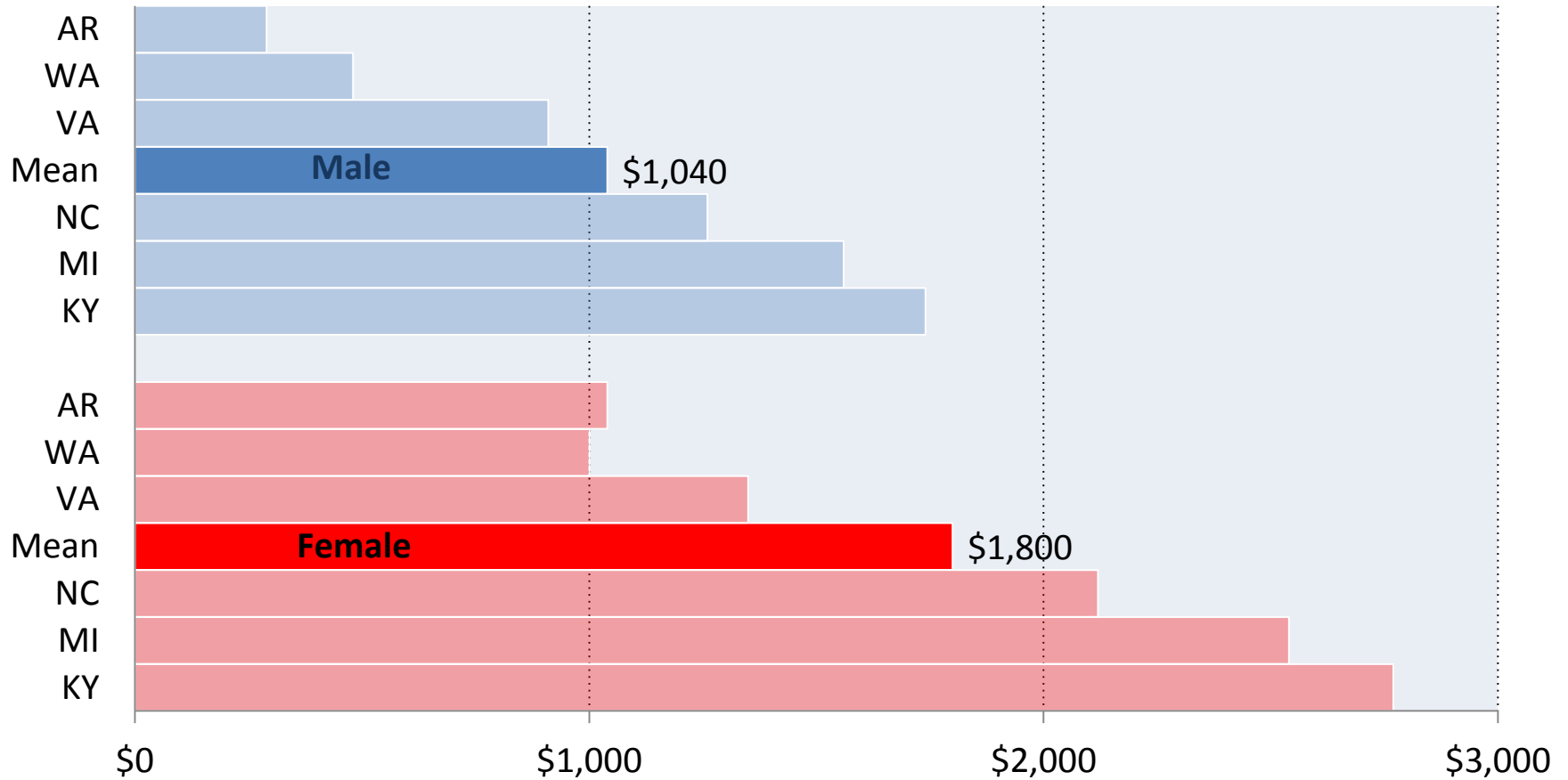
- Sampling issues:
 - Missing versus zero earnings
 - Transfer students
 - (Not important: age, follow-up, excl. BAs, young, low-wage)
- Specification issues:
 - Award definition (toggle on/off for highest award)
 - (Not important: time trends, Ashenfelter dip, award*enroll interaction)
- OLS and FE results consistent/similar, vary together

By Award

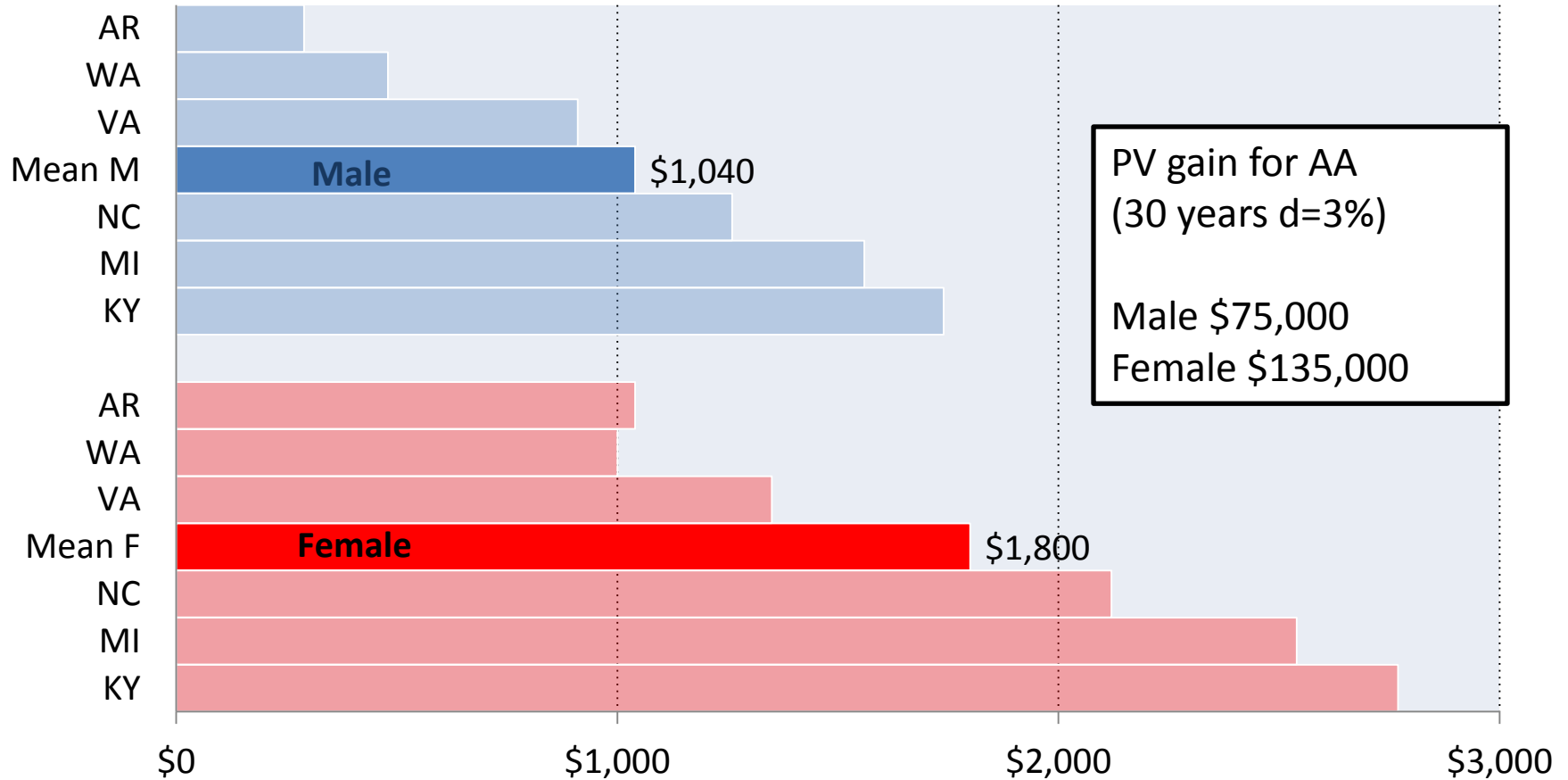
Earnings gains for:

- (1) AA degrees
- (2) Certificates
- (3) Credits
- (4) Different no awards

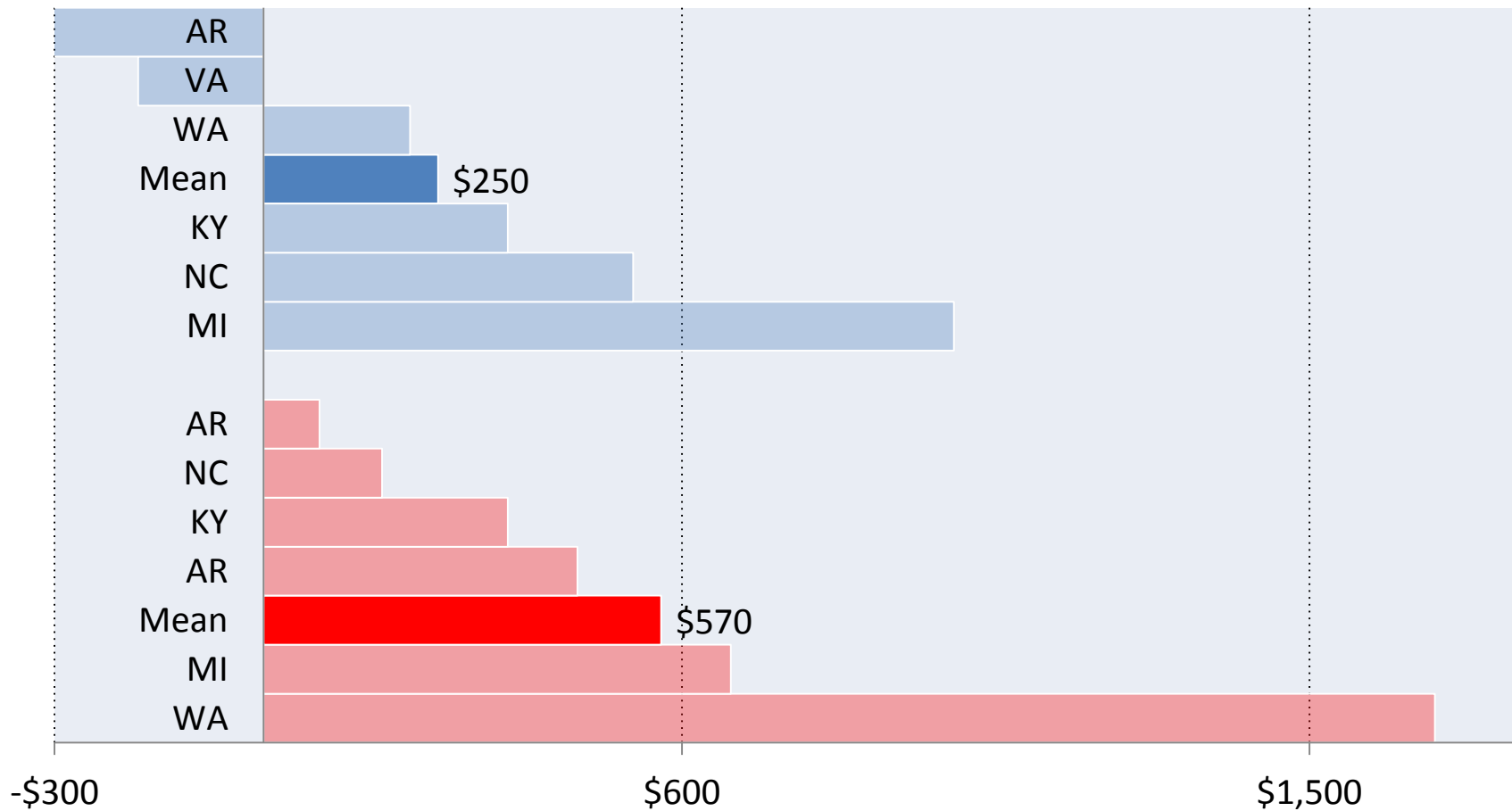
Quarterly Earnings Gains: AA over No Award 8 Years Post-FTIC (Fixed Effects)



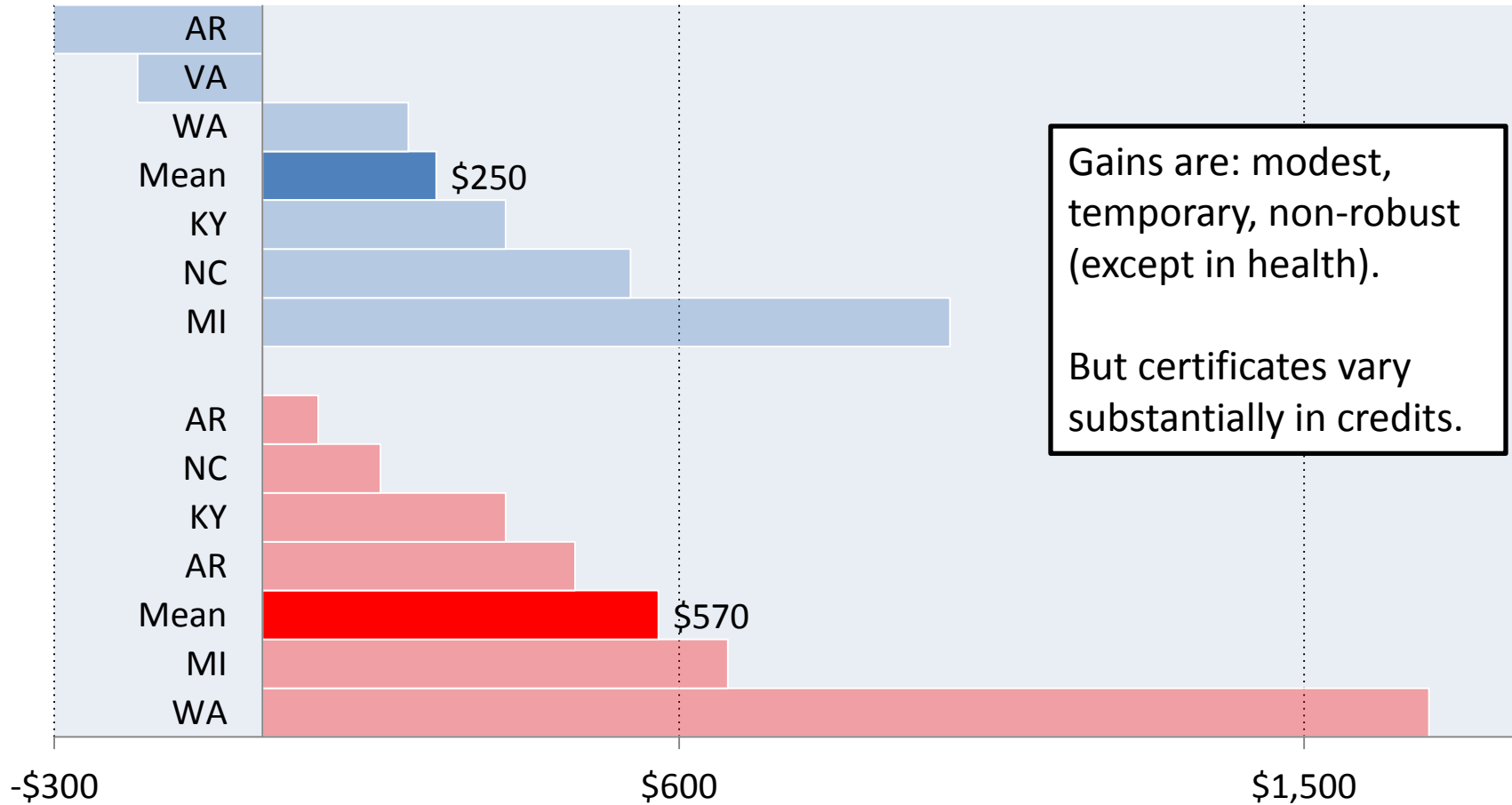
Quarterly Earnings Gains: AA over No Award 8 Years Post-FTIC (Fixed Effects)



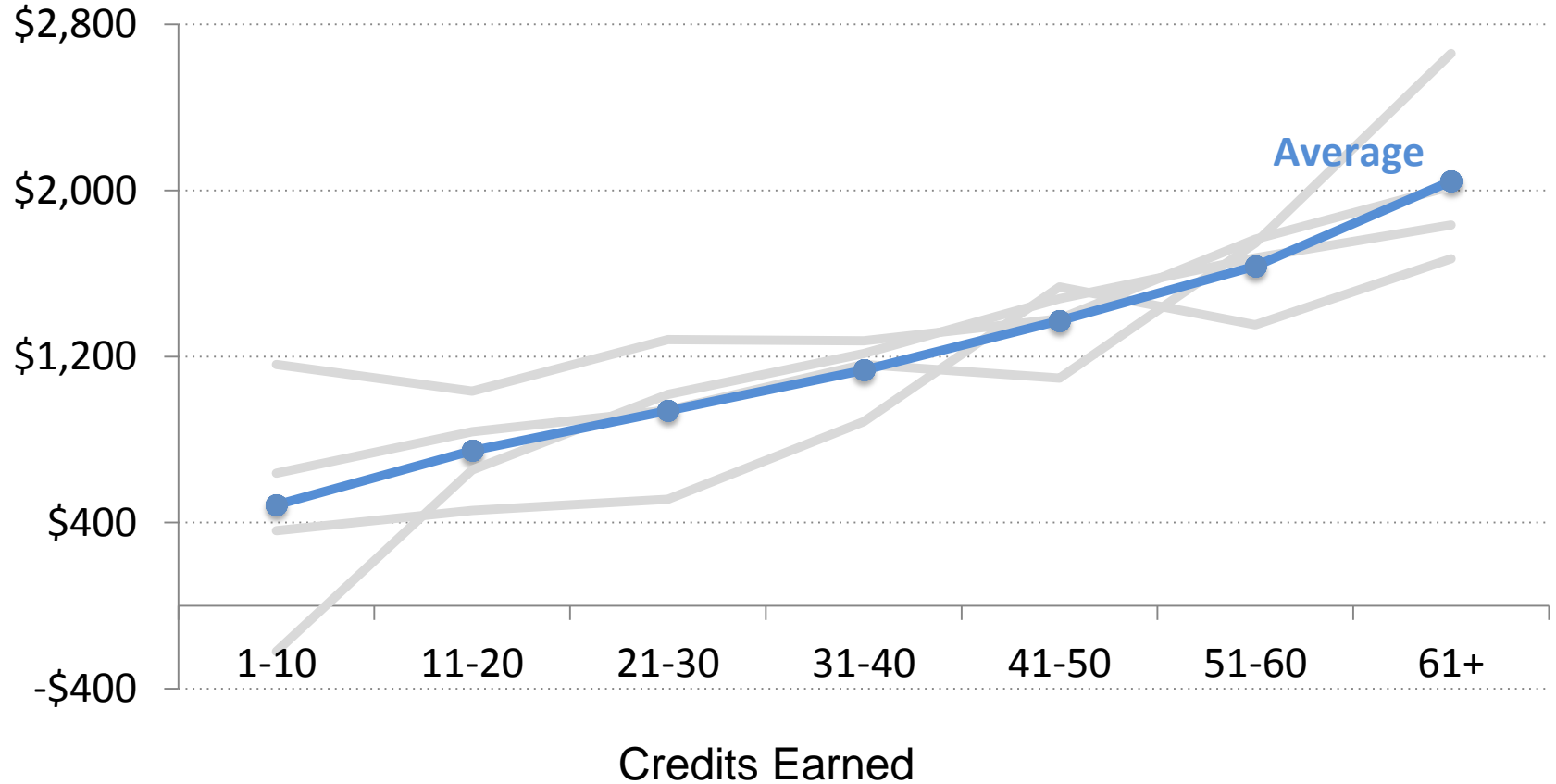
Quarterly Earnings Gains: Certificate over No Award 8 Years Post-FTIC (Fixed Effects)



Quarterly Earnings Gains: Certificate over No Award 8 Years Post-FTIC (Fixed Effects)



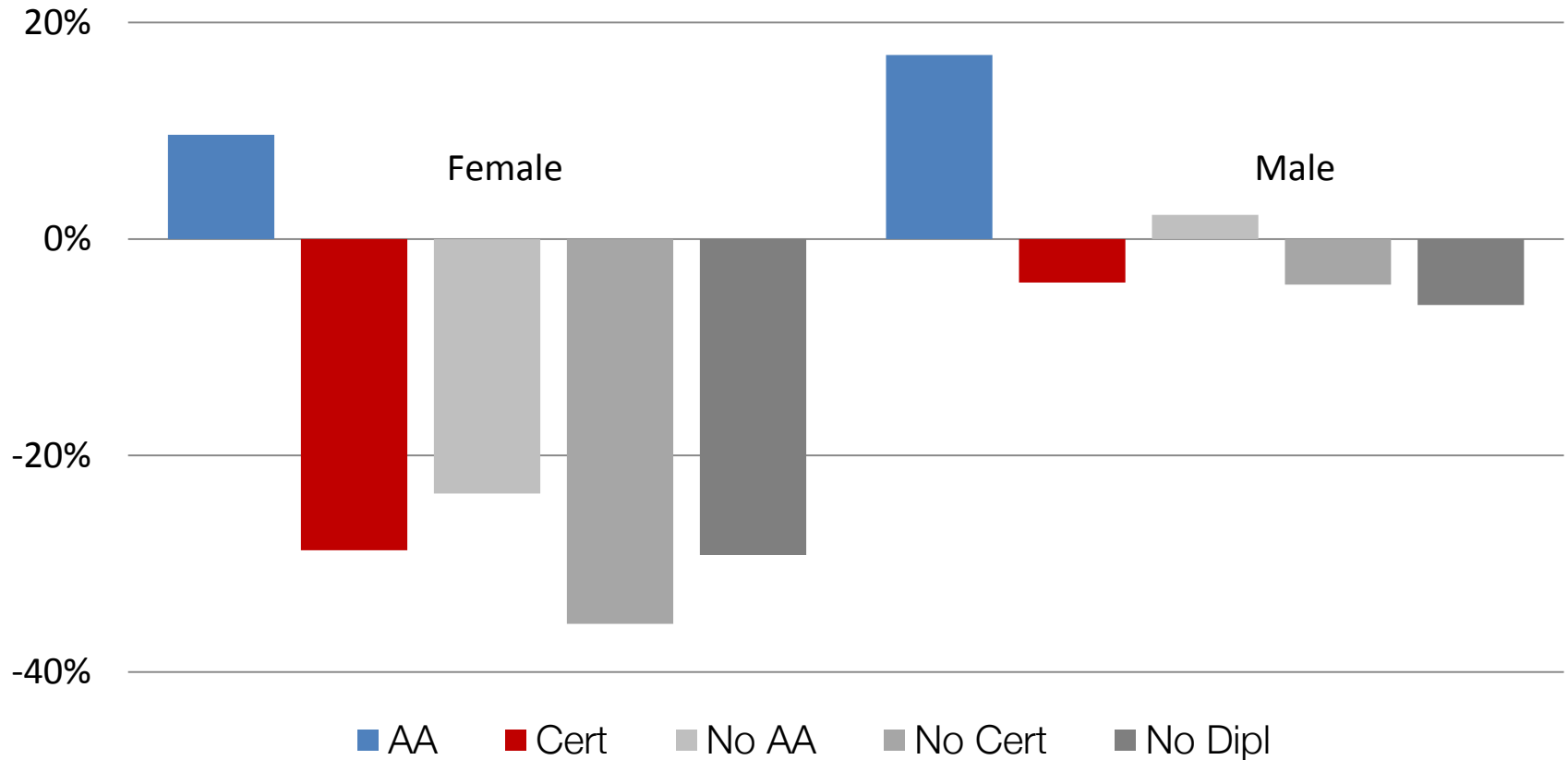
Quarterly Earnings Gain over Zero Credits (8 Years After FTIC in VA/NC)



Award (4): No Award

- Returns to awards *ex ante* reflect:
 - R_C Returns to completion of award (*ex post*)
 - $P(C)$ Probability of completion
 - R_{NC} Returns to non-completion
- *Ex ante* returns differ from *ex post* returns because of differences in completion probabilities and returns to non-completion

Returns over Diploma-Holder



By Award: Questions

- ① What are the returns to different types of degrees? AA
- ② Are returns to certificates actually subject effects?
- ③ What are the returns to awards that interact/stack?

By Transfer

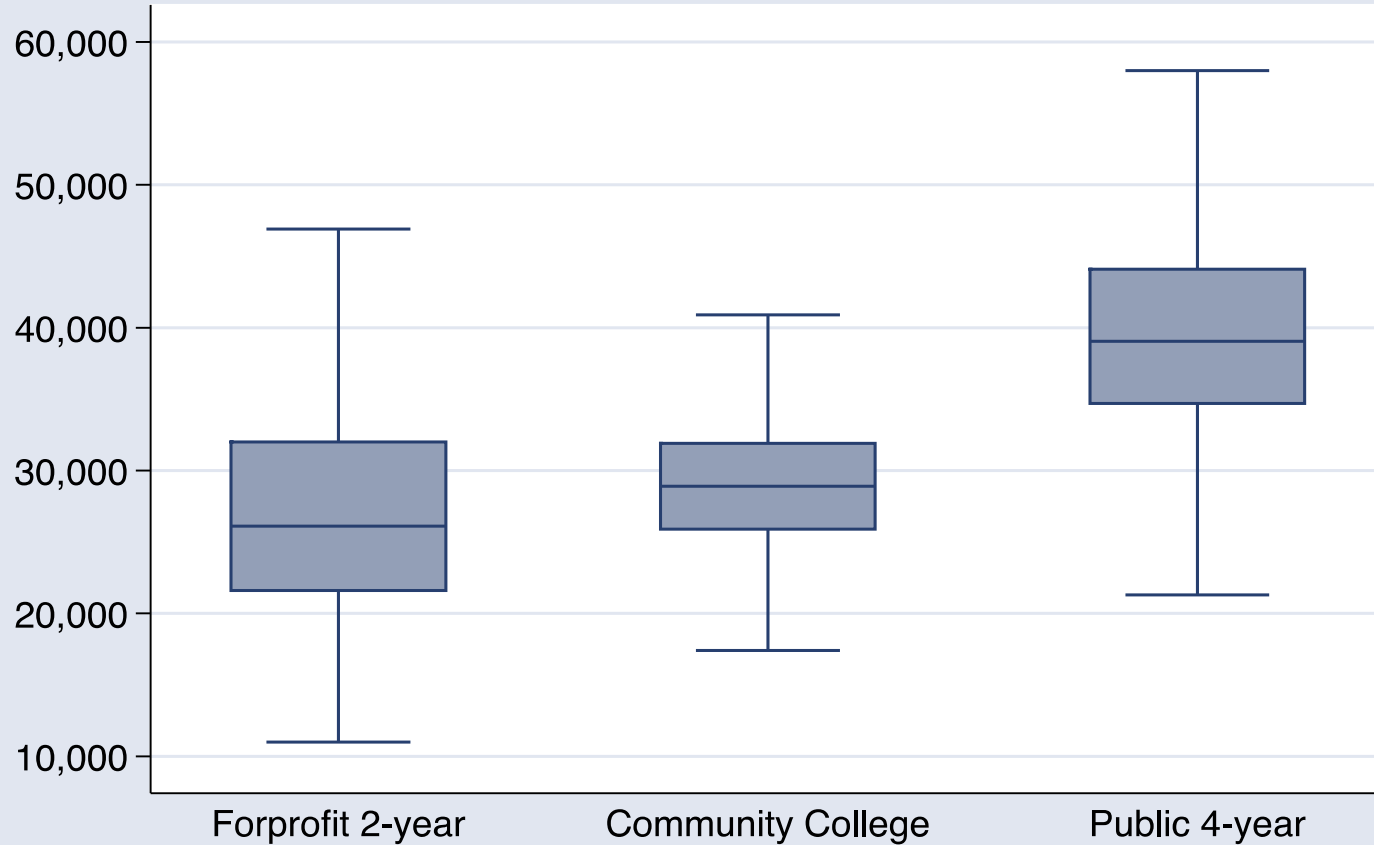
(1) To for-profit colleges

(2) Upward to four-year colleges

Transfer (1): To For-Profit Colleges

- Evidence (but weak) of earnings penalty from attending FP
- No clear gains in earnings from *even attending* FP after community college
- Big tuition / loan balance penalty to FP
- Resume studies: “the bachelor's degrees granted by [FPs] are associated with the worst callback outcomes for jobs requiring a bachelor's degree”

Figure 3. Earnings of College Enrollees Ten Years Later
[Aggregated by College]



Source: U.S.DOE (2015). Median earnings.

Transfer (2): Upward

Students who transfer to a four-year public college have:

- Higher earnings than students who do not transfer (Reynolds, 2012)
- Lower earnings than those who started at a four-year college (Andrews et al., 2013)

Earnings gains are sensitive to pathways:

- Which type of college a student transfers to
- Whether student completes an award before transfer

By Transfer: Questions

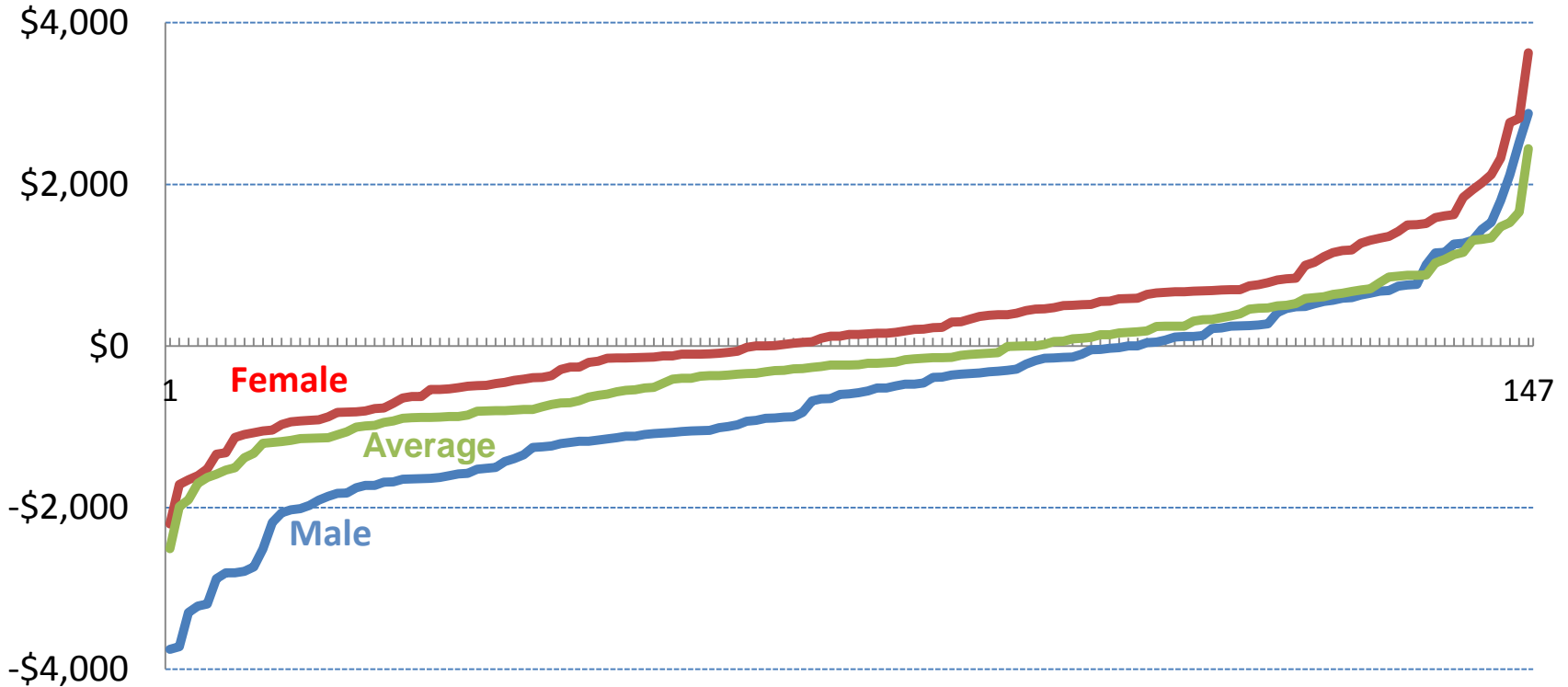
- ① What are the adverse features of for-profit colleges?
- ② What are the returns to reverse transfer?
- ③ What is the value of transfer with AA degree versus without?

By Entry Status

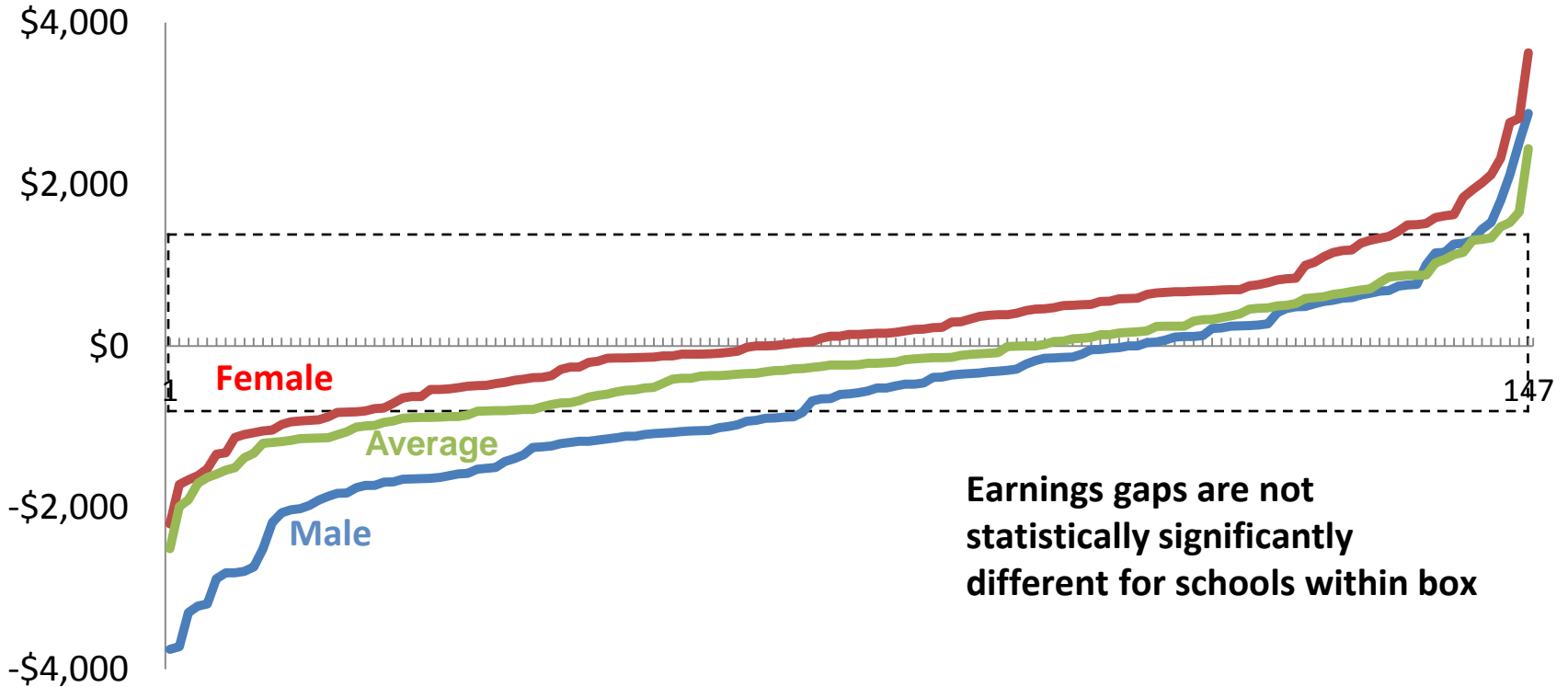
Returns by:

- (1) High school quality
- (2) Preparedness
- (3) Age

Quarterly Earnings Gaps of Arkansas Community College Students Across 147 High Schools



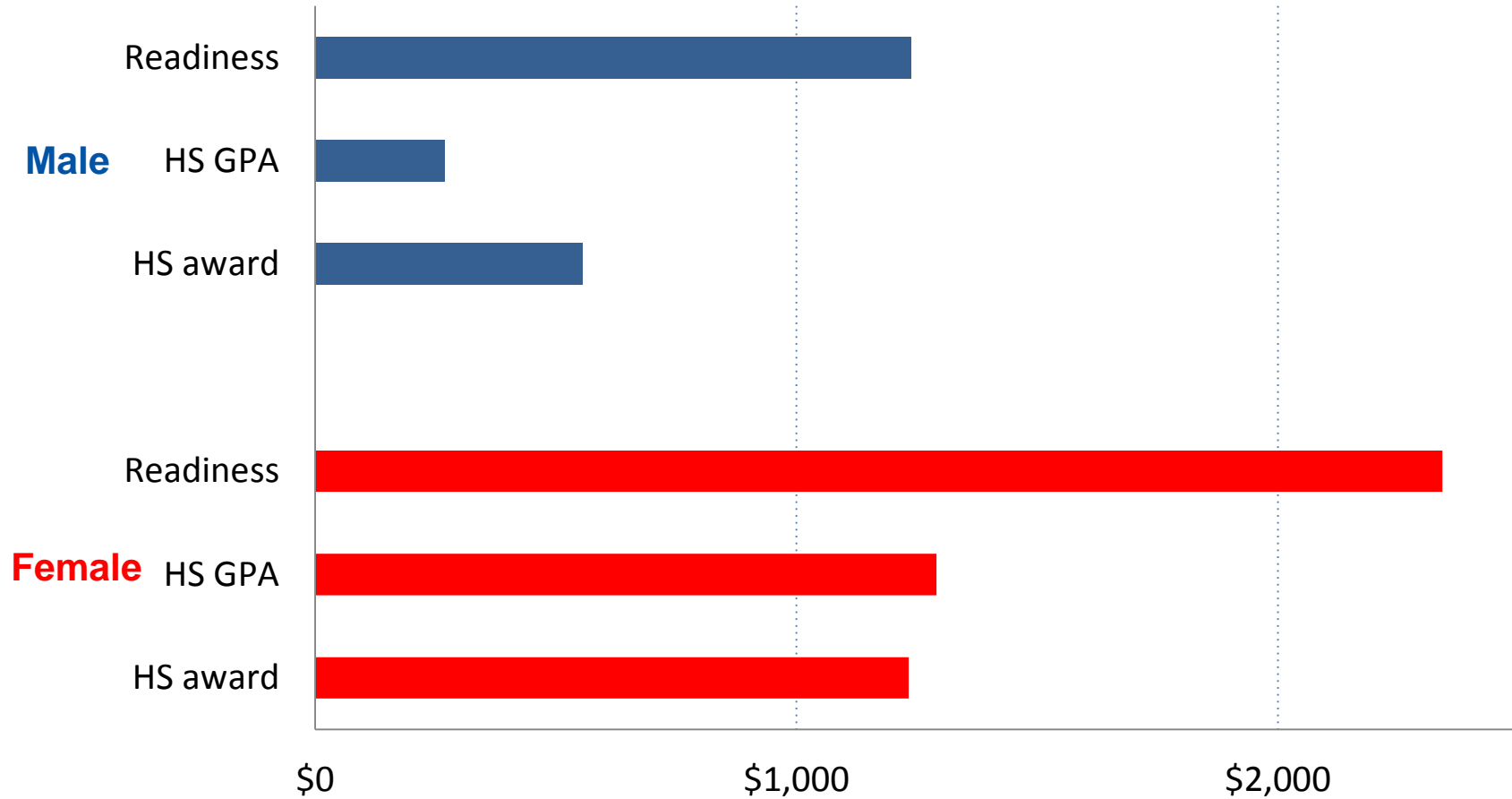
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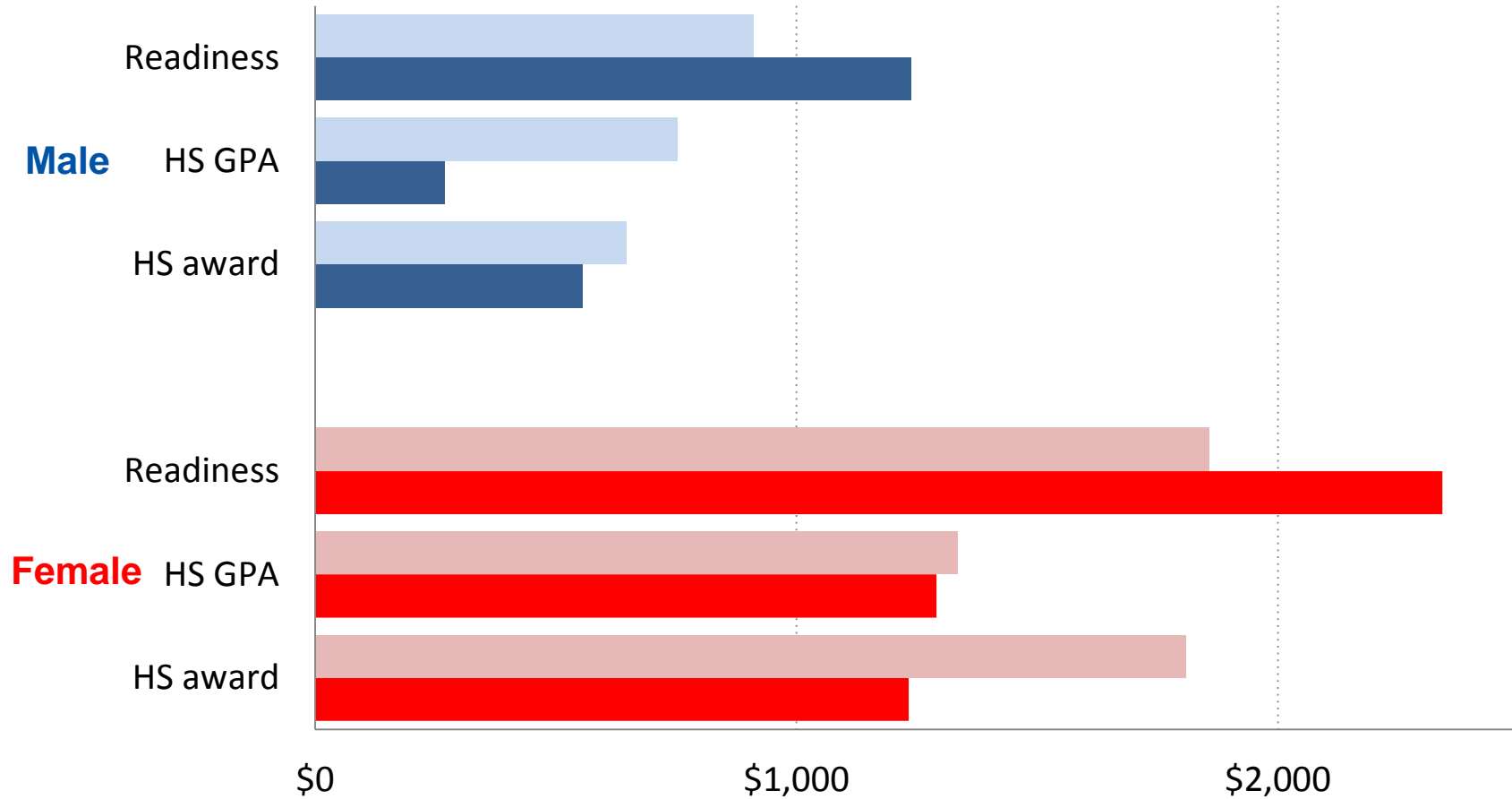
Entry Status (2): Preparedness

- More prepared students earn more
- Controls for preparedness do not much influence returns to college
- Estimation split by preparedness shows similar returns

Earnings Gains: AA over No Award, Well-Prepared Students

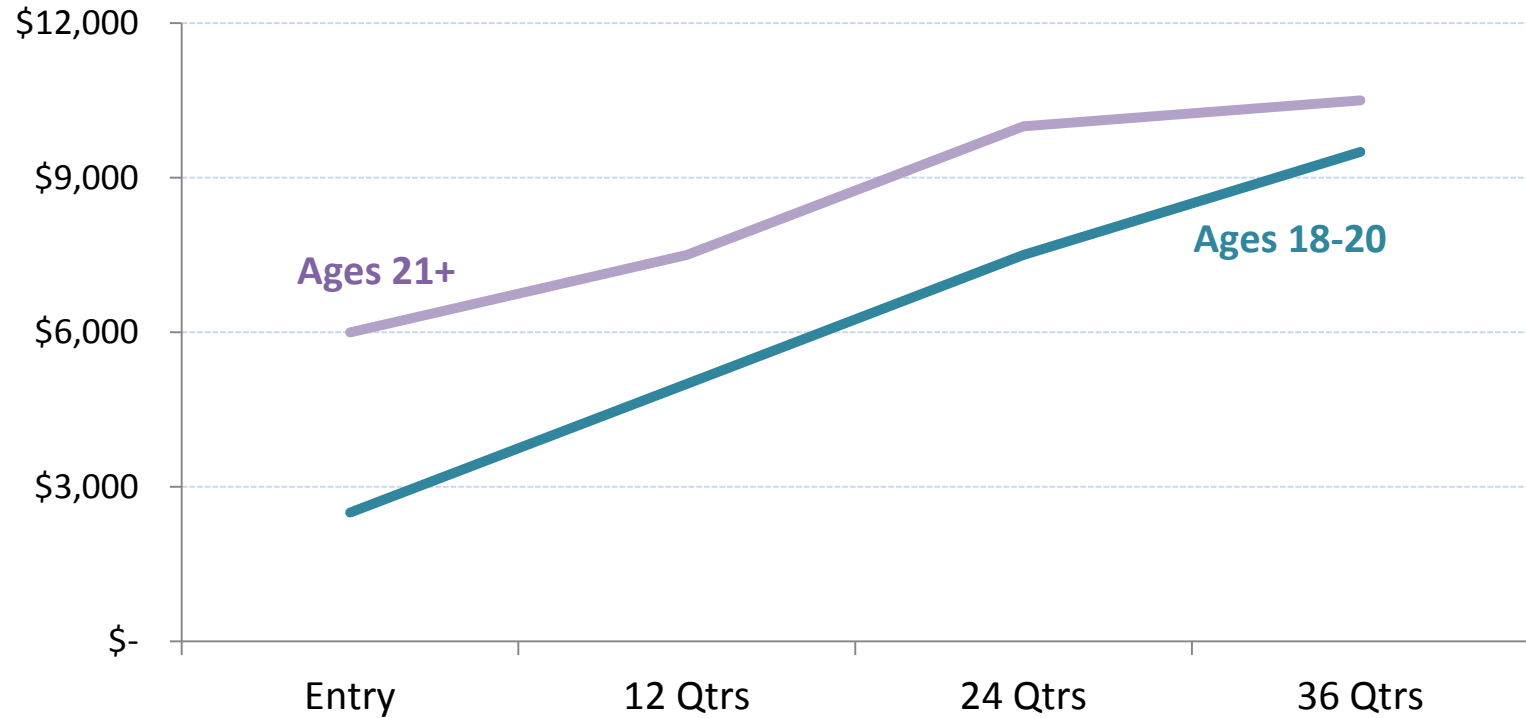


Earnings Gains: AA over No Award, Ill-Prepared (Light Bars) and Well-Prepared Students



Entry Status (3): Age

Earnings Growth: AA Completers by Age on Entry



Entry Status: Questions

① Is this a puzzle?

- More prepared students have higher earnings
- All students *gain* about the same in earnings

② If entry status does not influence returns per year of attainment, what selection decisions are students making?

Per Pathway

Pathways:

- (1) Subject / field
- (2) College choice
- (3) Aid allocation
- (4) Working while enrolled
- (5) Course sequences

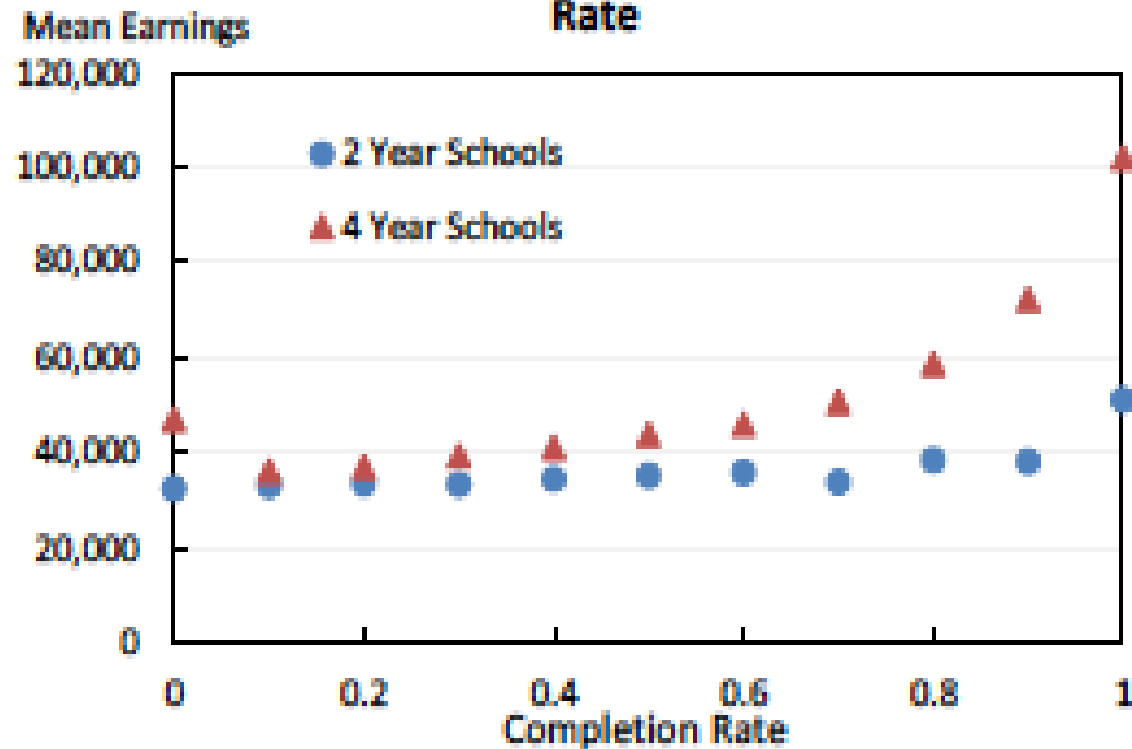
Per Pathway (1): Subject/Field

- Heterogeneous returns per:
 - Subject / field (vocational/CTE)
 - Subject-award combination
- Health awards:
 - Returns are big, persistent, and robust to modeling / sub-sampling
 - Approx. double returns to other AAs

Per Pathway (2): Choosing a College

- College attended does not seem to matter much
- US DOE data:
 - Community college completion rate
 - College-level average earnings 10 years later
 - Correlation between these variables: approximately zero

Figure 5-9a: Relationship Between Earnings and Completion Rate



Note: Chart uses 10 year mean earnings and the 150% completion rate from IPEDS.
Source: Department of Education, College Scorecard Data

Per Pathway (3): Aid

Aid effects are extremely complicated:

- Type of aid
- Take-up of aid
- Incentives
- Targeting accuracy
- Changes in aid systems

Per Pathway (4): Job

- FE models estimate that penalty to being in college is \$200-\$300 per quarter
- Very low earnings penalty for studying
- Preliminary evidence shows that work-study is an effective form of student aid because it offers better jobs

Per Pathway: Questions

- ① Why do health programs not expand?
 - College-level barriers to enrollment in high-return fields?
 - Restrictive practices in labor market?
 - Selectivity into low returns areas?

- ② Which college characteristics matter: Class size?
Faculty quality?

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Per Pathway

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Data quality, methodology

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