Examining the Wage Trajectories of Community College Students in Virginia

Shanna Jaggars & Di Xu
Community College Research Center
Teachers College, Columbia University

September 2014 | CAPSEE Conference | Washington, DC

General Approach

- Rather than compare between types of degrees in terms of <u>returns at a given point in time</u>…

- We compare between types of degrees in terms of <u>how wages change across time</u>

Conceptual example for one student

- Wages rising slightly prior to college entry

- Wages rose more steeply while enrolled

- A year after college exit, wages suddenly drop

➤ Estimated "return to degree" depends on which slices of time you compare

capsee
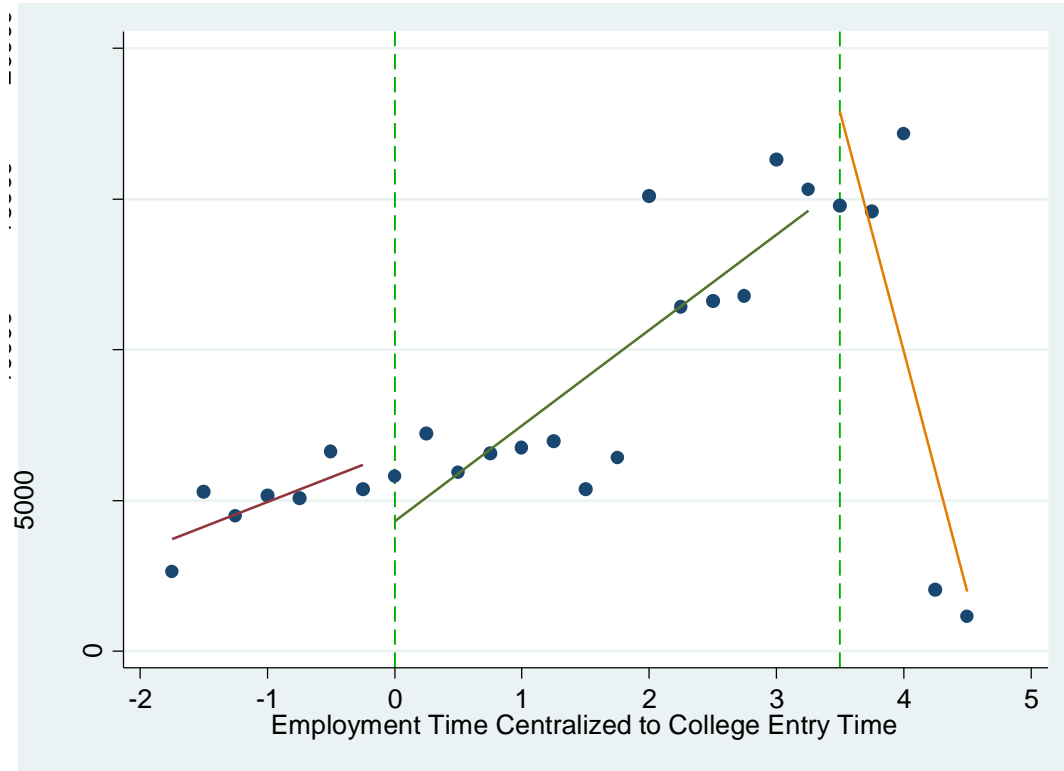
Comparing pre/during enrollment to post-exit trajectory
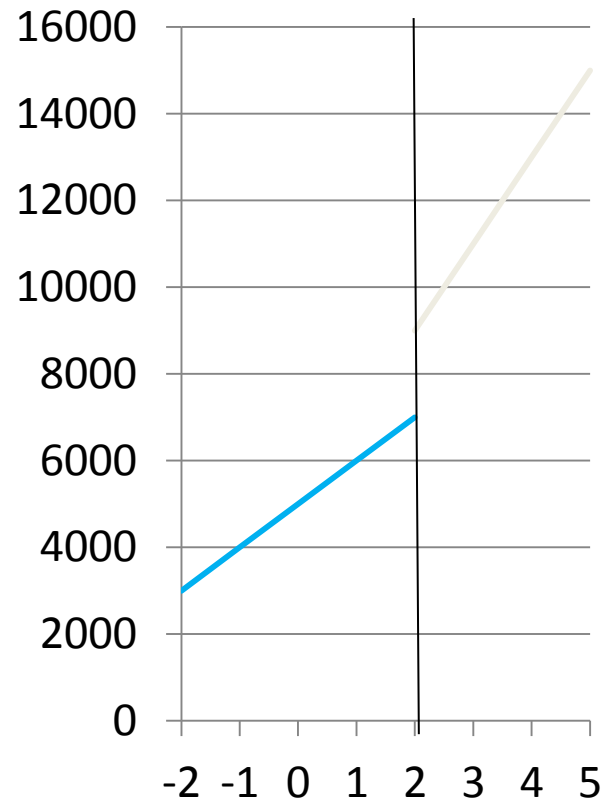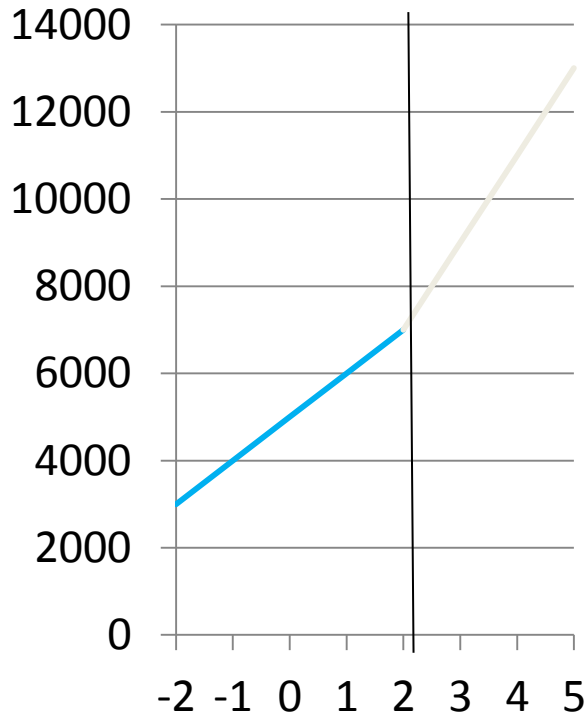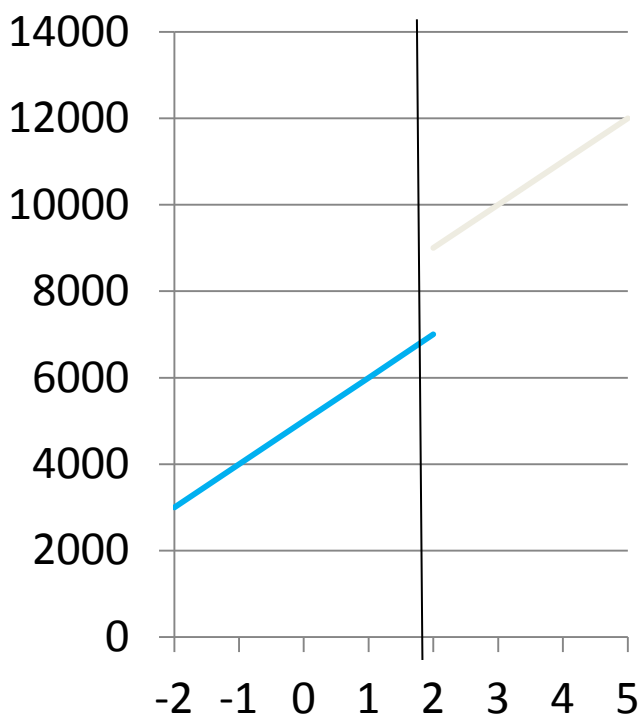
➤ Same slope, jump in level ➤ Steeper slope, no jump ➤ Steeper *and* jump

capsee

Key Questions

- What are the wage trajectories before, during, and after college enrollment for different degree groups?

- To what extent does post-college trajectory differ from the pre- and during-college trajectory?
  - ➢ What are the returns to each type of degree – compared to "some college" degree non-completers?

- Does the general pattern of results differ by demographic group or field of study?

Data

- 2006-2008 cohorts across the 23 community colleges in Virginia

- Student award data matched with enrollment and graduation data from the National Student Clearinghouse (NSC)

- Student unit-record administrative data matched with UI data (from VA, MD, NJ, OH, PA, WV, & DC)

- Followed from 1st quarter 2005 to 1st quarter 2013

- Quarterly wage data adjusted to 2010 dollars

Method

- Multilevel growth curve modeling approach (MGCM)

- Individual students' repeated measures of wage are modeled as a function of time

- Combine MGCM with piecewise modeling to allow growth trajectories to vary across pre-enrollment, during-enrollment, and post-credential periods

The Ugly Details:
Coefficients for 3-piece MGCM

Intercept	3695.68(56.22)***	Time (T)	96.87(3.36)***
Bachelor (BA)	-82.61(165.54)	T * BA	-12.93(7.76)*
Associate (AA)	694.54(81.98)***	T * AA	17.86(4.14)***
Longcert (LC)	436.25(158.41)***	T * LC	22.43(8.56)***
Shortcert (SC)	547.52(123.84)***	T * SC	24.24(7.58)***
During College	64.08(20.74)***	During * T	-18.59(1.18)***
During * BA	-260.51(159.33)	During*T*BA	-2.44(7.28)
During * AA	-426.17(75.29)***	During*T*AA	-11.26(3.62)***
During * LC	-516.91(143.67)***	During*T*LC	-17.18(7.38)**
During * SC	-181.22(100.85)*	During*T*SC	-1.93(6.12)
After College	245.62(20.81)***	After * T	9.19(1.89)***
After * BA	921.39(163.56)***	After*T*BA	348.26(11.73)***
After * AA	57.73(79.11)	After*T* AA	116.34(6.32)***
After * LC	70.58(150.8)	After*T* LC	57.41(12.6)***
After * SC	-13.88(104.39)	After*T* SC	-19.45(9.97)*

Before vs. After College
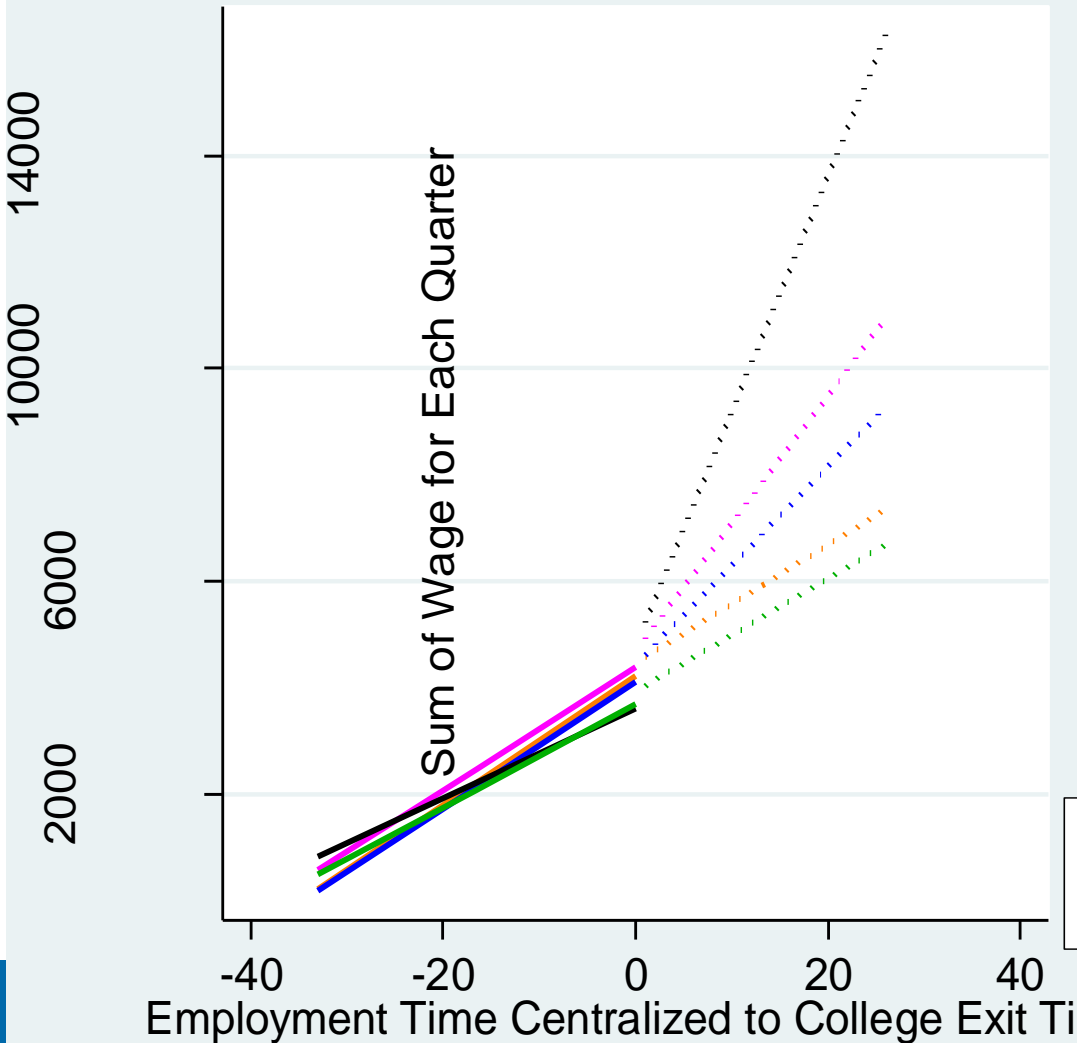
Changes in each trajectory based on
3-piece MGCM
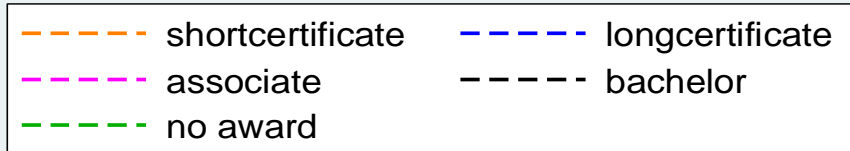
Overall Returns

- Compared to some-college no-degree students…

Degree Type	Sig. Stronger Jump?	Sig. Stonger Boost in Growth?
Bachelors	Yes ($ 921)	Yes ($ 348/qtr)
Associate	No	Yes ($ 116/qtr)
Long Cert	No	Yes ($ 57/qtr)
Short Cert	No	No

capsee

Other Interesting Findings: During-College Wages

- Students increase wages across time during college

- But…
  - Immediate post-enrollment drop
  - Slope of increase depressed compared to pre-college

- Drop & depression stronger:
  - Among eventual degree earners (esp. long cert & assoc)
  - Among older (25+) students

Other Interesting Findings: Older vs. Younger Students

	Older	**Younger**
Pre-Enrollment	Higher salaries Strong increases	Lower salaries Milder increases
During Enrollment	Immediate drop; Depressed increase	No drop (some even jump); No/mild depression in increase
Post-Exit	<u>Further</u> drop at exit; Strong upward acceleration quickly overcomes this	Jump at exit; Strong upward acceleration
Short certificates	No bump, but accelerated increase	Immediate bump, but no acceleration

Other Interesting Findings:
Degree Area (compared to some college)

	Strongest Post-Exit Bumps		Strongest Post-Exit Acceleration	
Bachelor's	Public Admin	($1873)	Public Admin	($410/qtr)
	Business	($1425)	Math/Science	($405/qtr)
Assoc	Mech/Construct	($1330)	Hum/Soc Sci	($126/qtr)
	Health	($ 996)	Health	($206/qtr)
Long Cert	Mech/Construct	($ 960)	Mech/Construct	($114/qtr)
			Health	($52/qtr)
Short Cert	Mech/Construct	($ 615)	Hum/Soc Sci	($278/qtr)
			Health	($47/qtr)

capsee

Implications

- Pre-enrollment wages don't accurately reflect wage potential for younger students
  - Comparing pre-enrollment to post-exit for these students likely overestimates value of degree

- Different timeframes of post-college wage measurement = different conclusions about which degrees are more valuable
  - For accountability, raises question of when to measure wage benefits

- Value of short certificate varies strongly by age & field

capsee

Visit us on the web at capseecenter.org

We're also on Facebook and Twitter.

Center for Analysis of Postsecondary Education and Employment
Teachers College, Columbia University
525 West 120th Street, Box 174, New York, NY 10027
capsee@columbia.edu
212.678.3091