Examining Wage Trajectories of Community College Students Using Growth Curve Modeling Approach

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Research Questions

- What are the wage trajectories of community college students before, during, and after college enrollment?

- How do the wage trajectories vary across different award groups?

Existing Literature

- Centered on the bachelor's degree
- Limited evidence on sub-baccalaureate credentials
- Limitations with Mincerian and Individual Fixed Effects Approaches

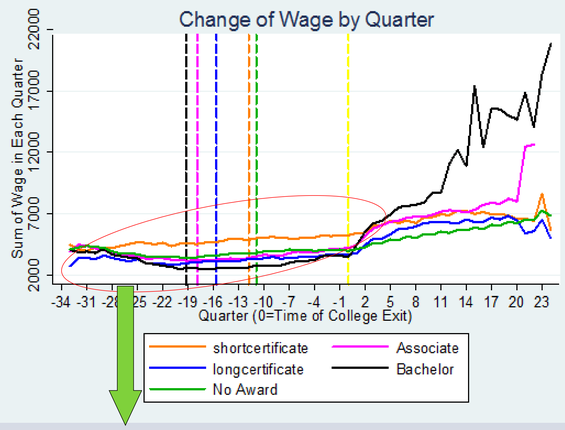
Data

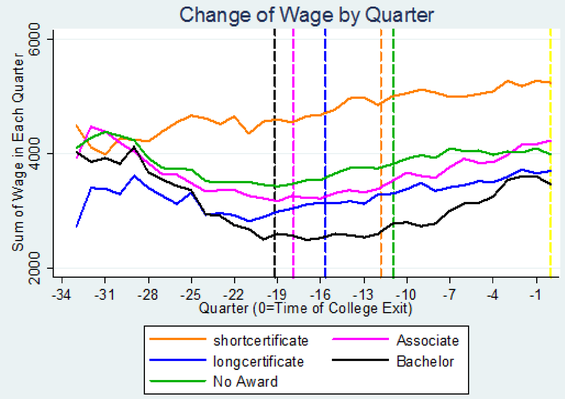
- 2006-2008 cohorts across the 23 community colleges in Virginia
- Student award data matched with enrollment and graduation data from the National Student Clearinghouse (NSC)
- Student unit-record administrative data matched with Unemployment Insurance (UI) record data
- Followed from the first quarter of 2005 to the first quarter of 2013
- Quarterly wage data adjusted to 2012 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

Descriptive: Wage Earnings Over Time

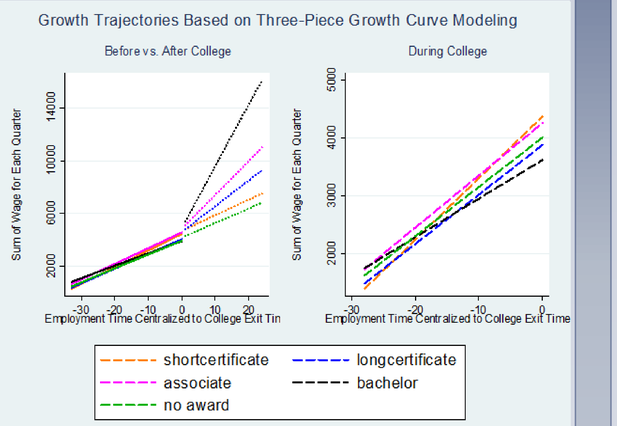




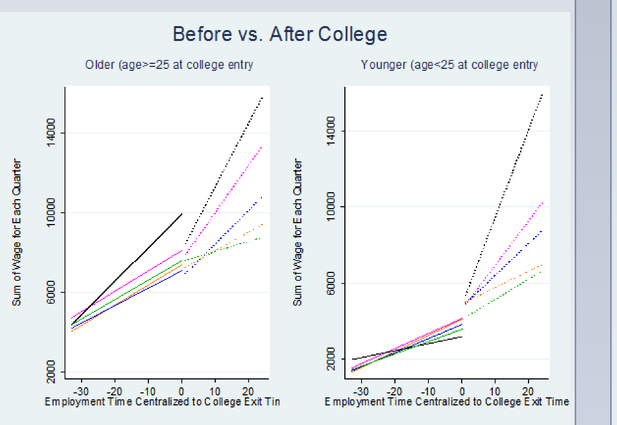
Descriptive: Earning by Award

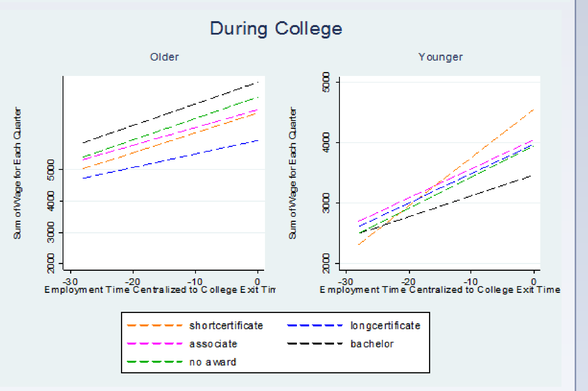
	Prior to College	During College	After College	Overall
No Award	4101.60 (N=940,90)	3771.24 (N=245,217)	5179.55 (N=229,852)	4394.59 (N=569,159)
Bachelor	2957.42 (N=5,676)	2913.09 (N=47,765)	6260.99 (N=11,330)	3502.6 (N=64,771)
Associate	3844.08 (N=16,543)	3579.81 (N=93,517)	6138.92 (N=24,303)	4075.23 (N=134,363)
Longcert	3594.11 (N=3,364)	3259.81 (N=13,928)	5448.70 (N=5,662)	3848.73 (N=22,954)
Shortcert	5304.28 (N=4,616)	4754.17 (N=9,510)	6397.50 (N=7,497)	5441.37 (N=21,623)
Overall	4046.00 (N=124,289)	3633.01 (N=409,937)	5345.44 (N=278,644)	4283.16 (N= 812,870)

Results: Overall



Results: by Age Group





Conclusions

- Stronger returns to longer-term degrees
- Credential does not always result in immediate wage jump, but bends wage growth curve upward
- Noticeable variations among different award groups in wage trajectoriesduring college
- Non-trivial variations across different award groups even before college enrollment
- Violation of strict exogeneity assumption underlying fixed-effects approach

Methodological Implications

- Necessary to control for variation in the "lock in" effect across different award groups
- Necessary to control for the length of time after college
- The key assumptions underlying individual fixed effects model may not hold
- Bias may be larger when the sample is younger in age

Acknowledgement

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