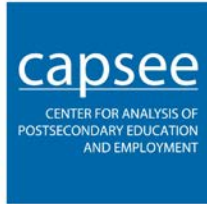
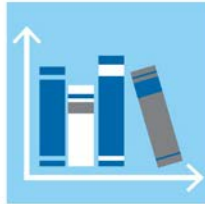


2017 CAPSEE CONFERENCE

MAKING THE RIGHT INVESTMENTS IN COLLEGE



Labor Market Effects of Community College Education

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Returns to Higher Education

- Disaggregating "some college" into some two, some four, certificate, and associate degree earners
 - 2012: 21.2% of individuals over 25 have some postsecondary experience only (U.S. Census Table S1501)
- Increase in undergraduate certificates and associate degrees
 - BLS projects much job growth between 2012 - 2022 to be in areas which require associate degree or less (retiree replacement + growth)
- Between 2000 and 2013:
 - Increase in associate degrees: White: 51%, African American: 126%, Hispanic: 206% (NCES Table 321.20)
 - Increase in undergraduate certificates: White: 55%, African American: 82%, Hispanic: 129% (NCES Table 320.20)

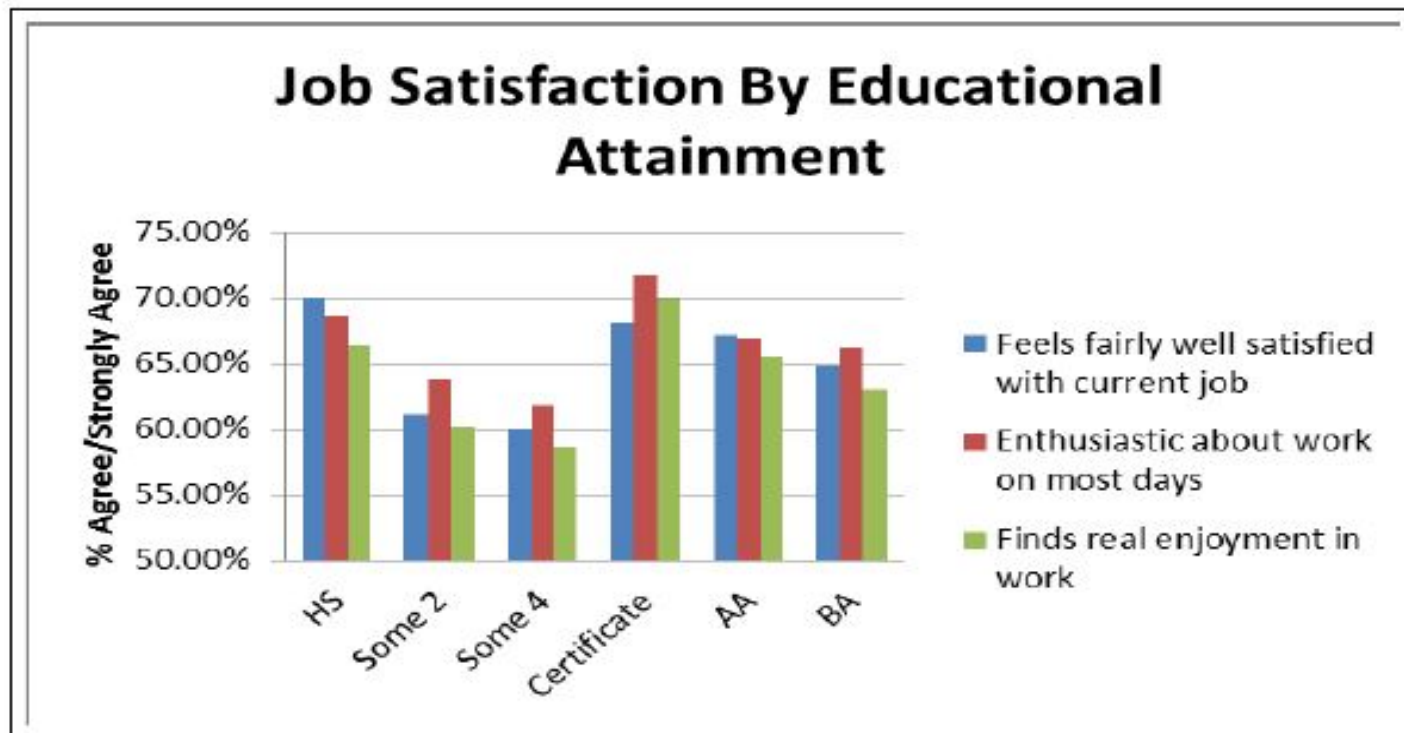
Data Set: National Center for Education Statistics (NCES)

- Education Longitudinal Study of 2002 (ELS: 2002)
 - Nationally representative longitudinal study of 16,200 high school sophomores in 2002 (2004, 2006, 2012)
 - Complex survey design; 30 students chosen from approximately 750 randomly selected high schools
- Data Sample: 8930 respondents
 - High school graduates in 2004, have complete wage/income data
 - Earned at most bachelor's degree
 - Did not attend for profit school

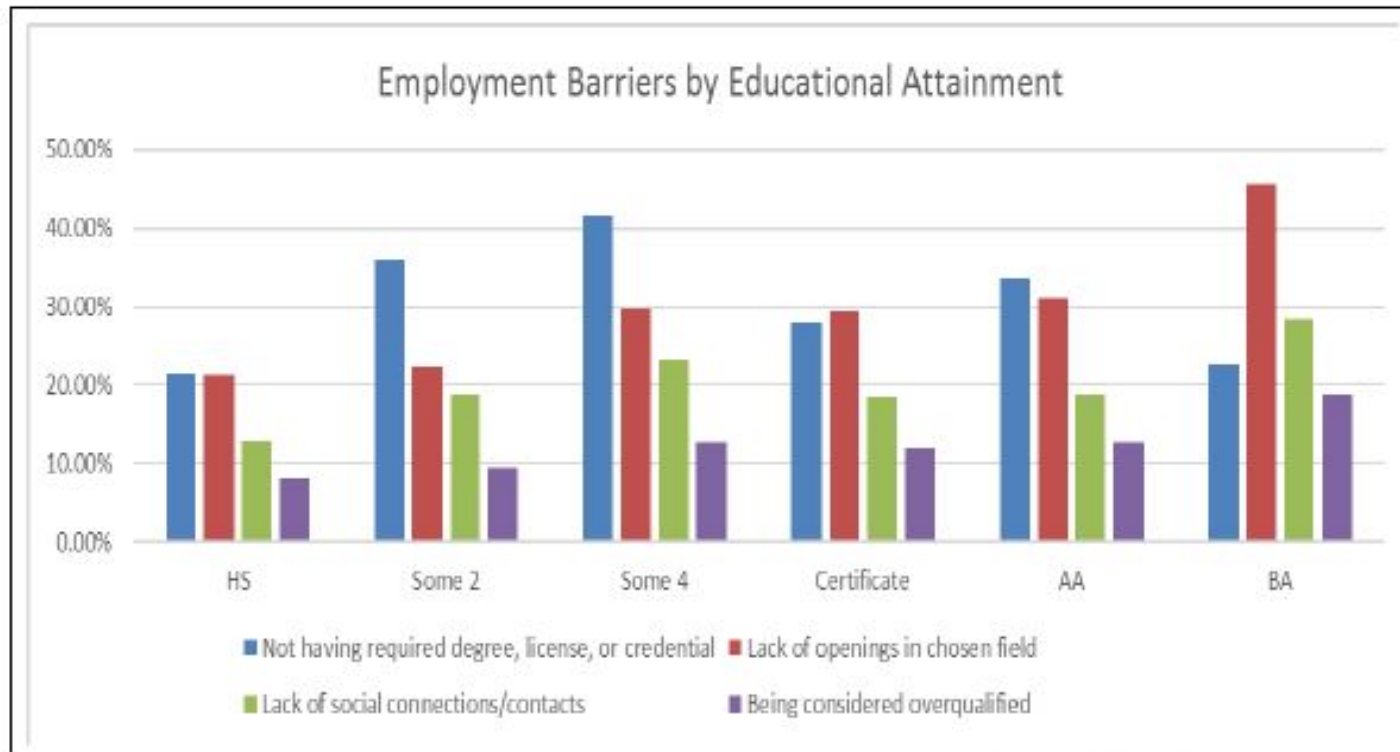
Degree Attainment

- Of college attenders, almost half have at some point attended a community college (AACC 2014)
 - Variations in cost, quality, and peer make up
- Previous Research:
 - Of students who start at CC, 33% of those who desire a BA earn one compared to 74% of those who start at a four year college
 - Community college attenders less likely to earn a BA
 - Impacts low SES students, and students with HS GPA over 3.0 to greater extent
 - Racial impacts inconclusive

"Please indicate the extent to which you agree or disagree with each of the following statements:"



”Since January 2009, have any of the following interfered with your career plans?”



Income Variables by Gender

	HS	Some 2	Some 4	Certificate	AA	BA
Wages (Female)	11.32 (0.48)	12.21 (0.24)	13.65 (0.36)	13.60 (0.31)	15.26 (0.38)	18.20 (0.26)
Wages (Male)	15.24 (0.48)	15.39 (0.32)	15.52 (0.53)	18.24 (1.16)	17.30 (0.62)	20.58 (0.38)
Income (Female)	18,189 (903.14)	20,568 (890.03)	24,240 (859.54)	21,053 (704.13)	24,060 (890.19)	32,038 (550.41)
Income (Male)	29,054 (974.80)	28,703 (919.08)	28,791 (1131.52)	31,789 (1357.92)	33,503 (1538.32)	39,738 (1436.42)

- Wages: Hourly Wages (Positive Only); Self-Reported in 2012
- Income: Respondent's Earnings in 2011 (Positive Only); Self-Reported in 2012

Empirical Methodology: Propensity Score Matching

- Estimate the effect of treatment, conditional on observable characteristics (ie. gender, race, exam scores, region, socioeconomic status)
- $p(x)$: propensity score estimated using logit
 - Indicates probability of treatment (0: no chance, 1: definite)
- Assumptions:
 - Conditional Independence: Covariate means not significantly different between treatment/control groups
 - Overlap: There must be a feasible match for all observations

Matched Means (Female)

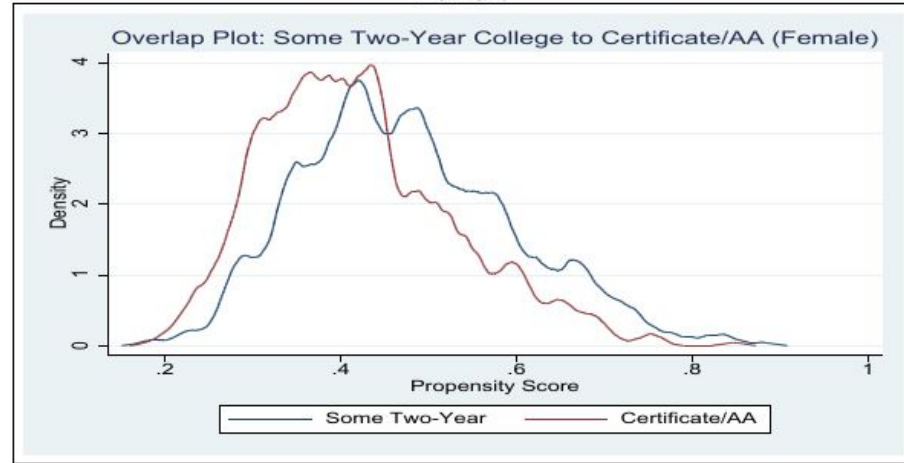
	CAA/ Some 2	CAA/ Some 4	BA/ Some 4	BA/ CAA		CAA/ Some 2	CAA/ Some 4	BA/ Some 4	BA/ CAA
Married	-0.04	0.03	0.02	0.02	Suburban	-0.03	-0.05	-0.01	-0.11
Children	0.03	-0.03	0.04	0.02	Rural	0.00	0.03	-0.01	-0.02
Math Score	0.01	0.00	0.05	-0.02	Mid-Atlantic	0.05	-0.08	0.01	-0.02
Work (06)	-0.05	0.03	0.05	0.01	EN Cent	-0.01	-0.11	0.03	-0.01
Job Training	-0.01	-0.03	0.00	-0.05	WN Cent	0.06	0.05	0.03	-0.01
Af. Amer	0.02	-0.01	0.05	0.1	S. Atlantic	-0.05	0.03	0.04	0.11
Hispanic	0.01	-0.02	-0.07	0.02	ES Cent	0.00	0.06	0.01	0.13
Other	0.08	-0.03	-0.02	-0.16	WS Cent	0.01	0.05	-0.06	-0.04
Med Inc.	-0.04	-0.05	0.04	0.02	Mountain	-0.02	0.03	-0.03	-0.05
High Inc.	0.02	-0.04	-0.02	-0.04	Pacific	0.03	0.02	-0.03	-0.11

Matched Means (Male)

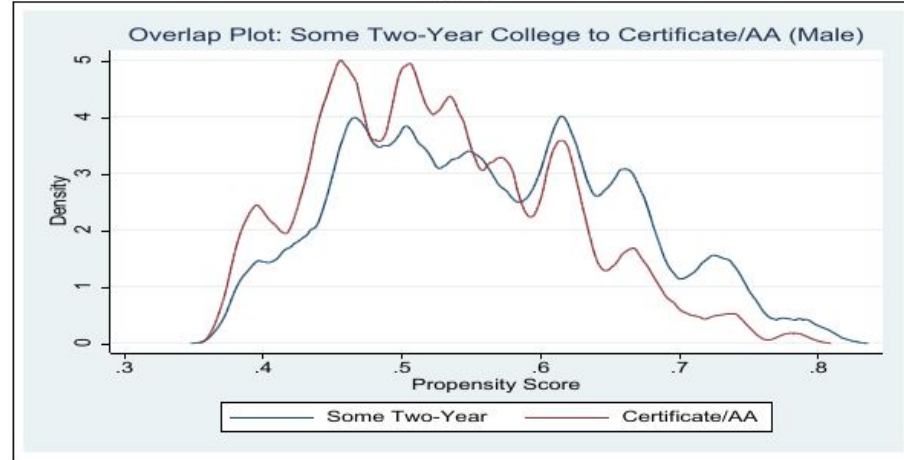
	CAA/ Some 2	CAA/ Some 4	BA/ Some 4	BA/ CAA		CAA/ Some 2	CAA/ Some 4	BA/ Some 4	BA/ CAA
Married	-0.01	0.05	-0.11	0.08	Suburban	0.07	0.04	0.07	-0.04
Children	-0.02	0.18	-0.03	0.03	Rural	-0.04	-0.07	-0.06	0.05
Math Score	0.02	-0.03	0.03	-0.01	Mid-Atlantic	0.01	-0.05	0.01	0.02
Work (06)	-0.01	-0.14	-0.07	0.00	EN Cent	-0.05	0.05	0.02	-0.04
Job Training	0.00	0.01	0.02	-0.03	WN Cent	-0.02	0.05	-0.02	-0.07
Af. Amer	0.01	-0.02	-0.04	-0.02	S. Atlantic	0.05	-0.06	0.01	-0.02
Hispanic	0.03	0.07	0.05	0.06	ES Cent	-0.03	0.04	0.05	0.06
Other	-0.01	-0.1	0.02	0.1	WS Cent	-0.02	-0.01	-0.04	0.04
Med Inc.	0.02	0.01	-0.04	0.02	Mountain	0.00	-0.05	0.02	0.05
High Inc.	0.02	0.05	0.00	-0.03	Pacific	0.03	0.02	0.00	-0.01

Overlap Graphs (Certificate/AA vs. Some 2-Year College)

Female

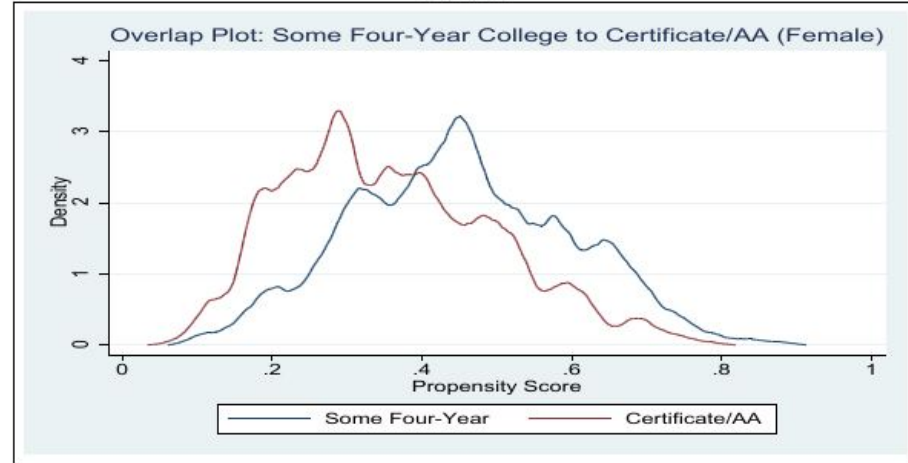


Male

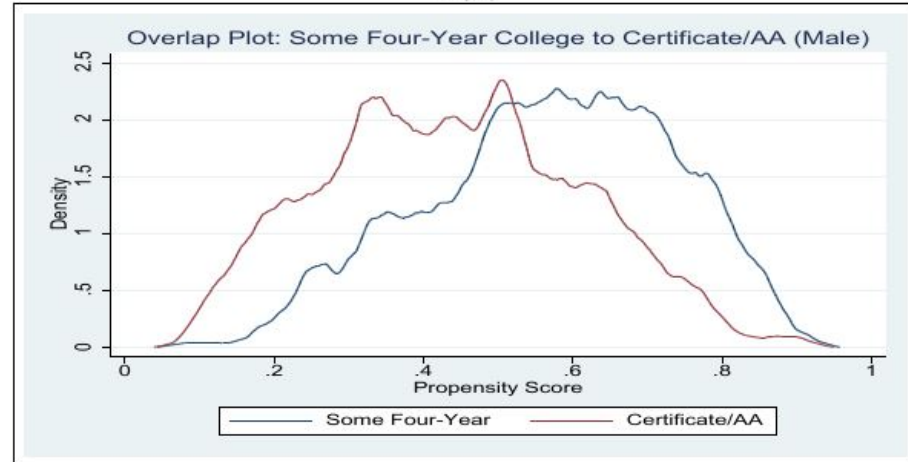


Overlap Graphs (Certificate/AA vs. Some 4-Year College)

Female

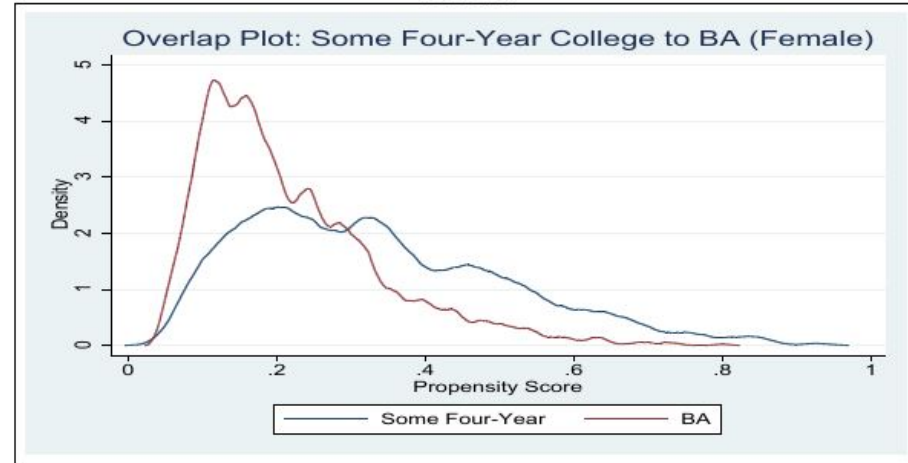


Male

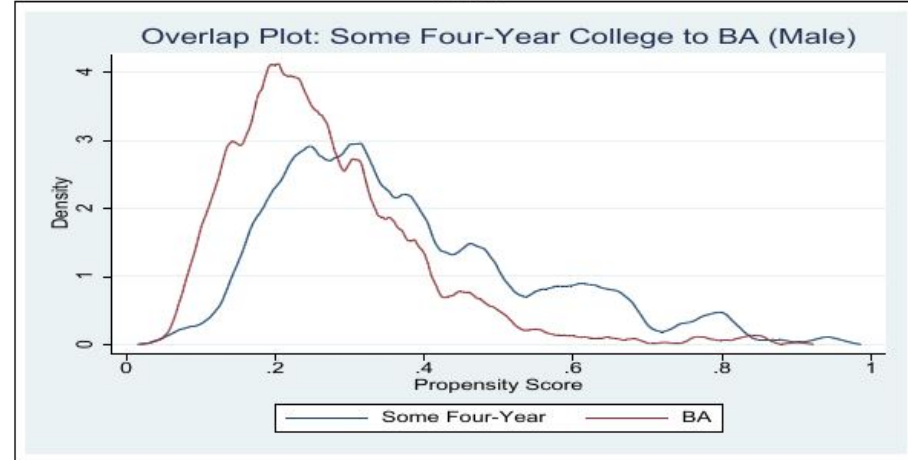


Overlap Graphs (BA vs. Some 4- Year College)

Female

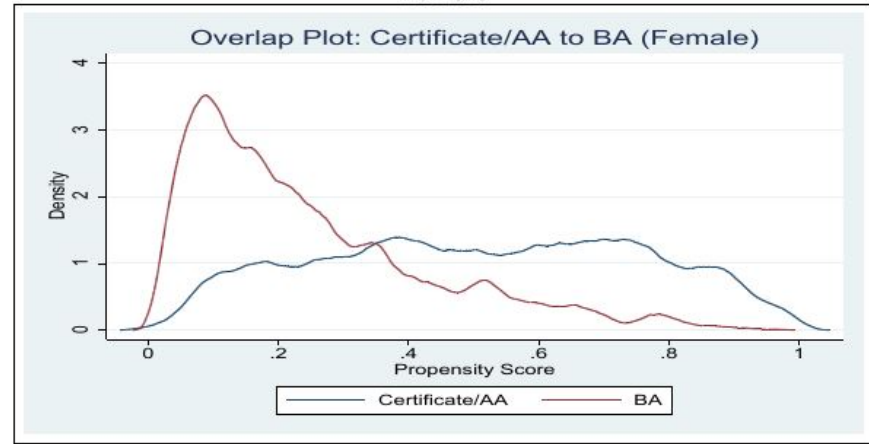


Male

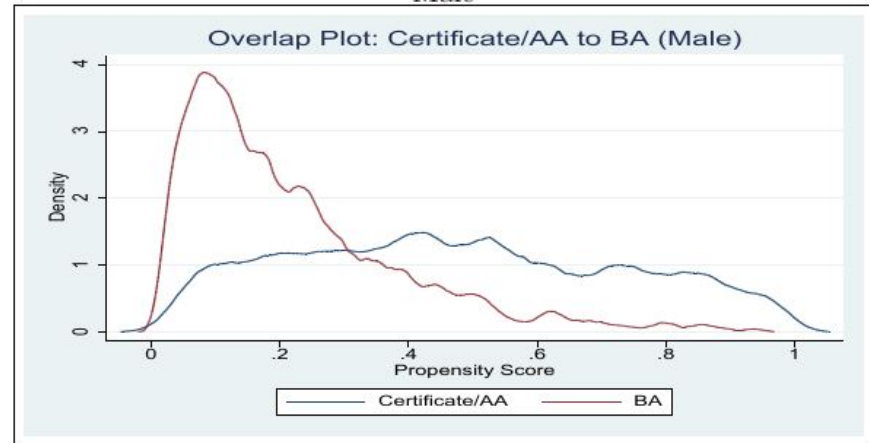


Overlap Graphs (BA vs. Certificate/AA)

Female



Male



Returns to Higher Education (ATT)

	Female		Male	
	ln(wage)	ln(income)	ln(wage)	ln(income)
Some 2 vs. Certificate/AA	0.121***	0.153**	0.107***	0.119*
	(0.026)	(0.076)	(0.032)	(0.067)
Some 4 vs. BA	0.147***	0.179***	0.208***	0.295***
	(0.030)	(0.066)	(0.035)	(0.057)
Some 4 vs. Certificate/AA	0.110***	-0.021	0.068**	0.123
	(0.026)	(0.085)	(0.032)	(0.078)
Certificate/AA vs. BA	0.091***	0.259***	0.133**	0.174**
	(0.034)	(0.060)	(0.060)	(0.088)

- All models use “psmatch” to estimate.

Conclusion/Policy Implications

- Inconclusive returns to “some college” compared to high school graduates suggests need for targeted support to at-risk students
 - 33% of respondents have some postsecondary experience
 - Start 2: Average 1.7 years attempted credits in two-year, .4 years attempted credits in four-year
 - Start 4: Average .4 years attempted credits in two-year, 2.8 years attempted credits in four-year
- Debt:earnings - start at a two-year college: 4.54 (4.38); start at a four-year college: 4.30 (1.15)
 - Compared to debt:earnings of 1.40 (1.29) for Certificate earners, 1.90 (1.78) for AA earners and 2.18 (1.75) for BA earners

Conclusion/Policy Implications

- Magnitudes as expected for returns to BA, smaller for sub-baccalaureate and some college compared to previous literature
 - Relative importance of BA growing
 - Jobs that did not require a BA decades ago do now
 - Previous literature makes comparisons to high school graduates
- Men see smaller returns to certificates/associate degrees but higher baseline salaries and higher returns to bachelor's degree
- Intentional in decision of where to send students with respect to postsecondary education

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