

U N D E R S T A N D I N G B O S T O N



Pathways to Economic Mobility:

Identifying the Labor Market Value of
Community College in Massachusetts

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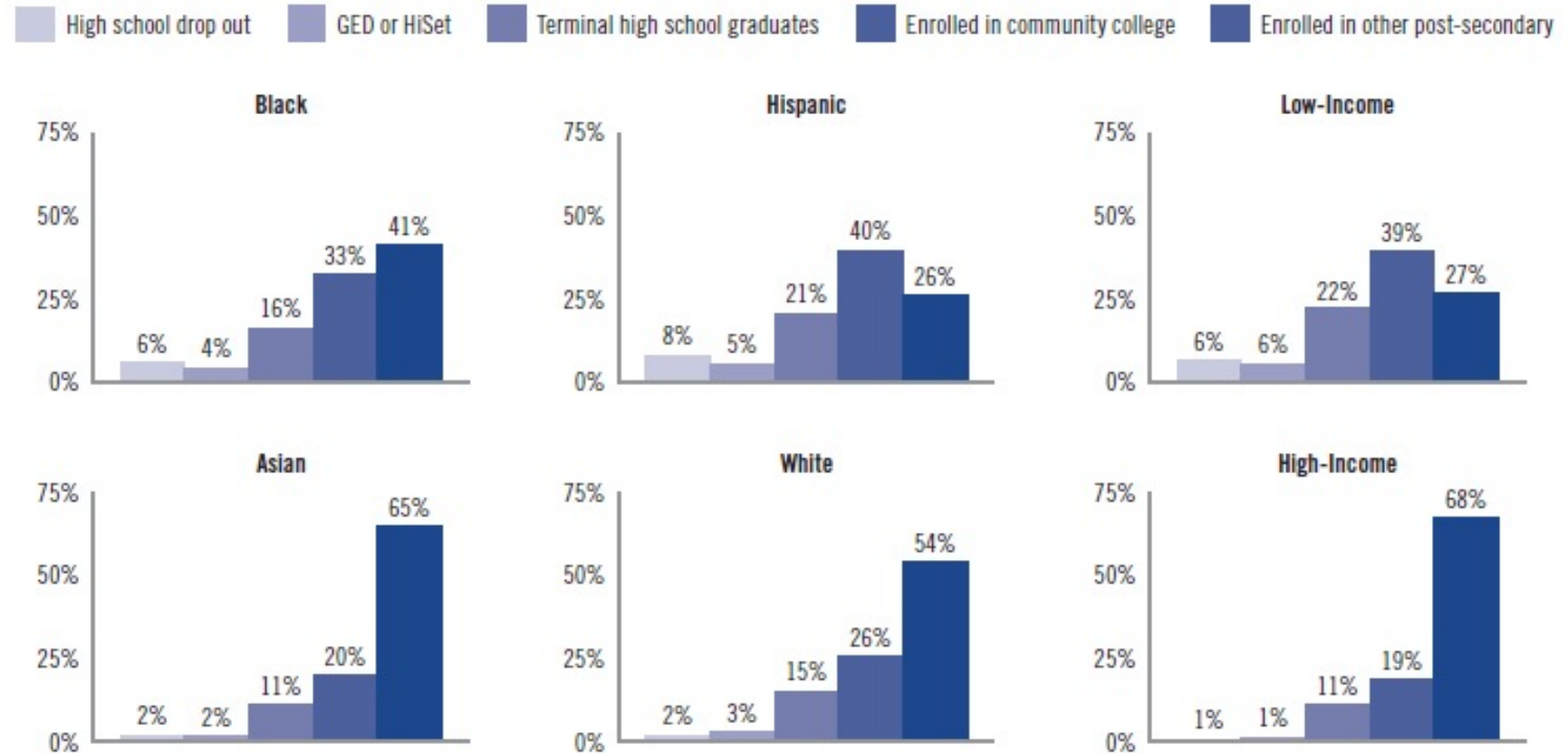
Benjamin Forman, MassINC

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This report provides a timely contribution to the growing public policy debate around how we combat structural inequality by quantifying the power of community college as a pathway to economic mobility.

Economic mobility varies by race, ethnicity, and socioeconomic status, with community colleges serving as an important point of access for under-represented racial groups and low-income students

Post-Secondary Enrollment by Race/Ethnicity and Socioeconomic Status



Source: Authors' calculations based on data supplied by the Massachusetts Department of Elementary and Secondary Education.
 Note: Sample is 2008 MCAS test takers who subsequently graduated from a Massachusetts public high school.

The majority of students who initially enroll in community college will receive all of their postsecondary education and training from a two-year institution, often the one they started at.

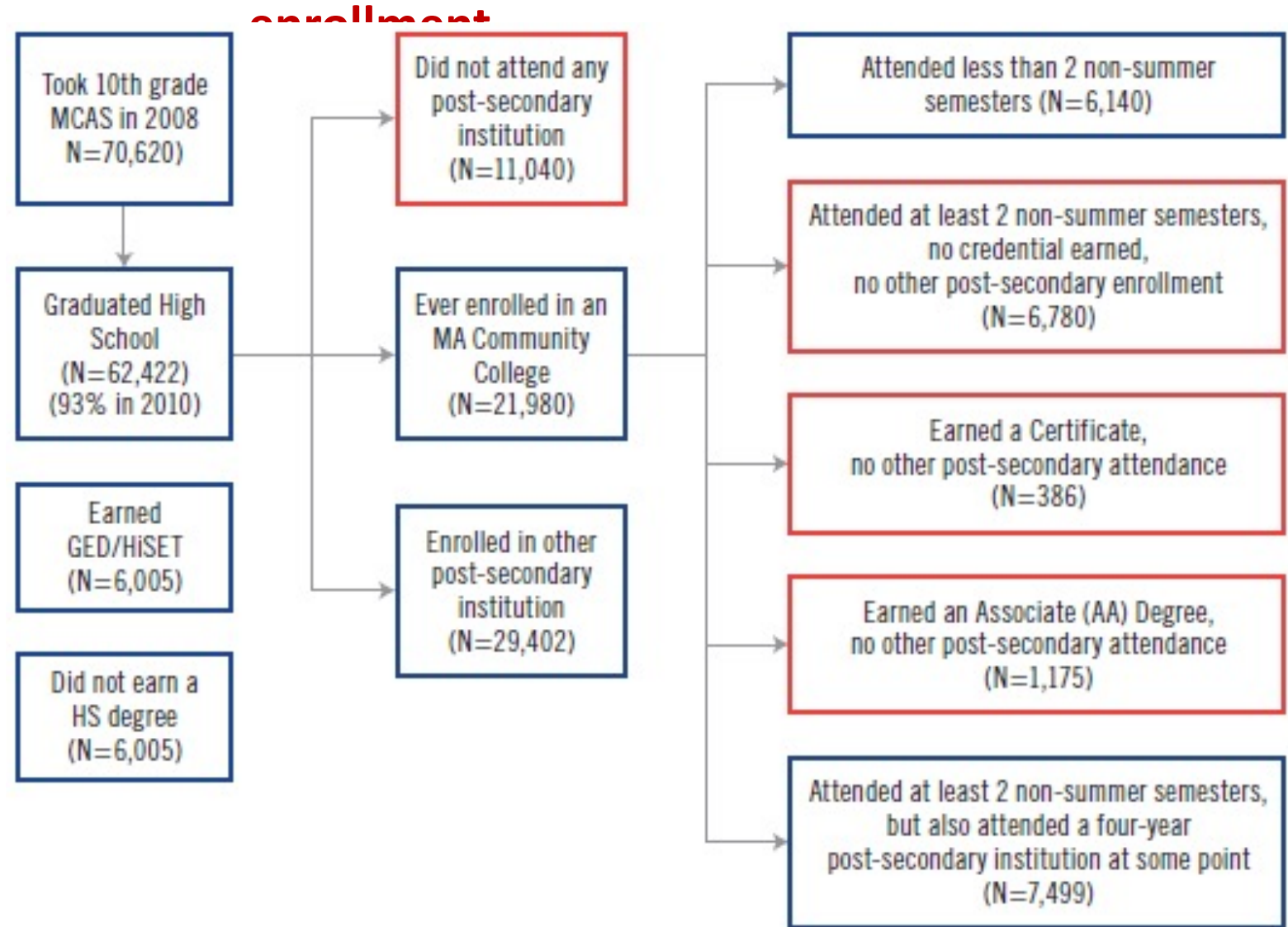
Little is known about the return to community college due to the wide variation in the types of credentials earned as well as the fields of study that are available.

- 1. What is the payoff in terms of increased employment and earnings relative to high school graduates for community college students who:**
 - **Attend a community college without completing a credential or ever attending a four-year institution**
 - **Earn a credit-bearing certificate without ever attending a four-year institution**
 - **Earn an associate's degree without ever attending a four-year institution**

- 2. How does this payoff to community college vary by:**
 - **Timing of enrollment (e.g., right away versus one to five years after high school graduation)**
 - **Field of study (business, health, law enforcement, liberal arts, STEM, or trade related)**
 - **Individual characteristics (gender, race, ethnicity, socioeconomic status).**

To measure the return to community college we compare cohorts of recent high school graduates to those who attend and/or earn a credential with no further post-secondary enrollment

Sample Selection Example:
We use state data on secondary and post-secondary outcomes to identify trajectories for students in the 2008 MCAS test take cohort who subsequently graduated from a Massachusetts high school.



We use the State Longitudinal Data System (SLDS) to construct multiple measures of employment and earnings that reveal the importance of stable employment for these

Annual Employment and Earnings by Sub-Baccalaureate Educational Attainment, 2018	Employment		Earnings	
	Any quarter during the year	All quarters during the year	Conditional on working at all during the year	Not conditional on working
High school diploma, did not attend any postsecondary institution	66.7%	52.1%	\$34,216	\$22,643
At least two semesters of community college, no credential	79.9%	63.1%	\$29,150	\$23,091
Certificate, no other credential	86.0%	72.4%	\$33,643	\$28,606
Health	91.3%	80.4%	\$38,306	\$34,638
Trade	78.2%	64.1%	\$34,271	\$26,425
Associate's degree, no other postsecondary enrollment	85.4%	73.8%	\$35,029	\$29,713
Business	82.1%	71.8%	\$35,953	\$29,524
Health	89.9%	84.9%	\$43,573	\$39,178
Law enforcement	86.3%	70.6%	\$39,573	\$33,618
Liberal Arts	83.5%	72.3%	\$30,713	\$25,636
STEM	80.6%	69.1%	\$46,014	\$36,643
Trade	85.3%	75.8%	\$31,812	\$27,049

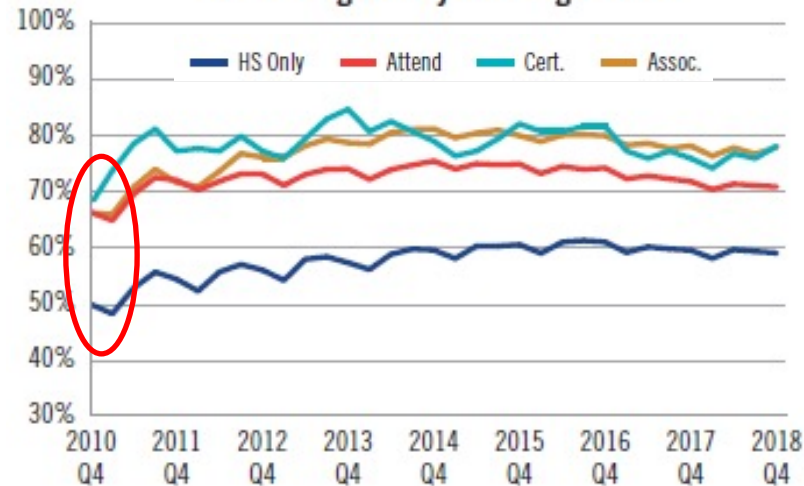
Source: Authors' calculations based on data supplied by the Massachusetts Department of Elementary and Secondary Education.

Note: Sample is 2008-10 MCAS test takers who subsequently graduated from a Massachusetts public high school.

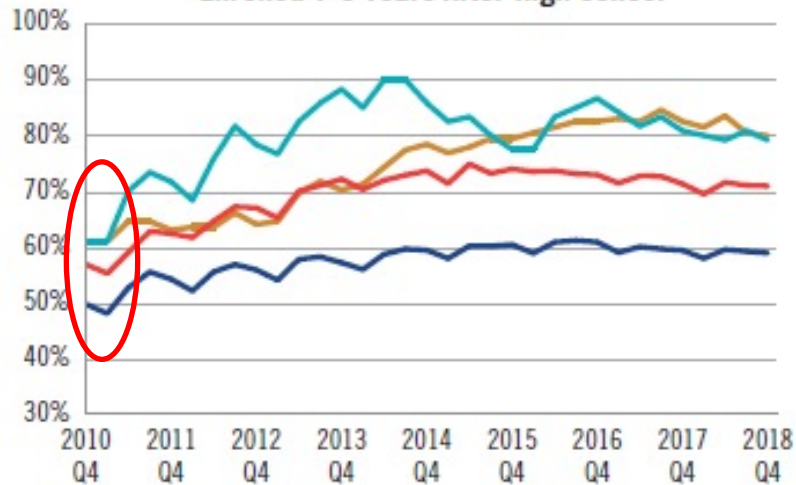
Yet community colleges serve a diverse student population such that employment and earnings trajectories vary considerably based on when students choose to enroll.

Employment

Enrolled Right Away After High School

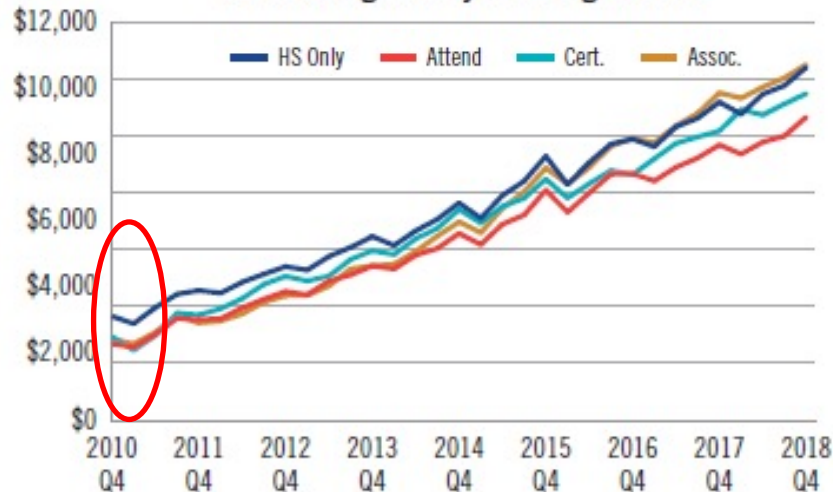


Enrolled 1-5 Years After High School

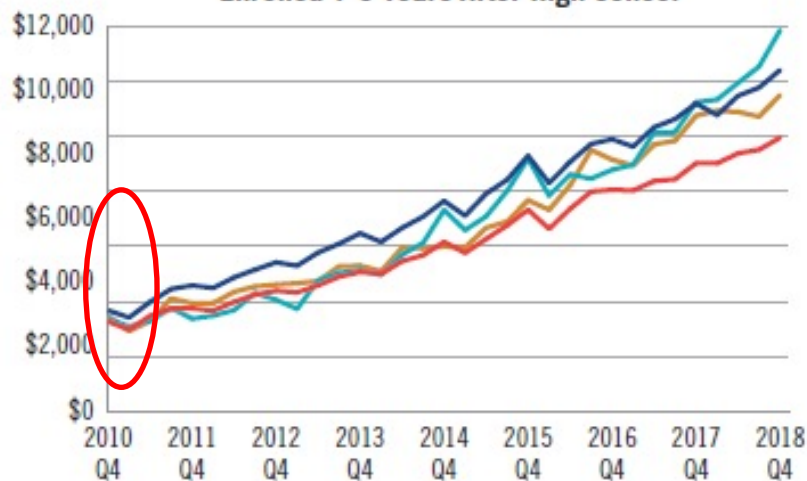


Earnings Conditional on Working

Enrolled Right Away After High School

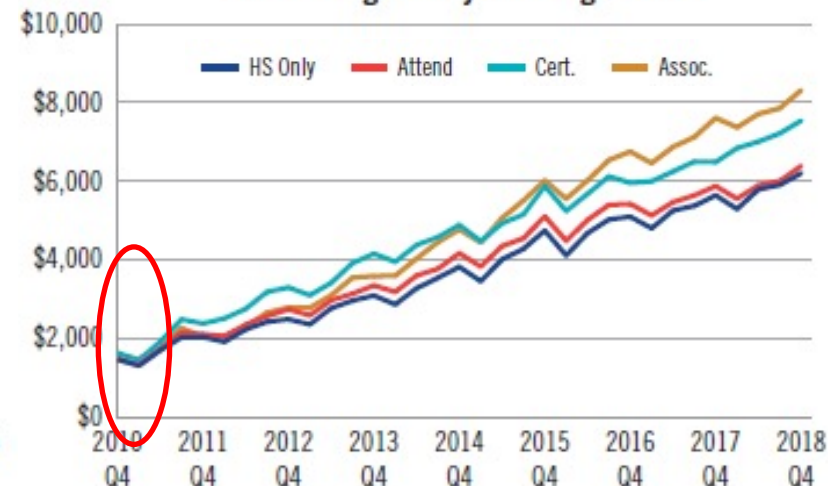


Enrolled 1-5 Years After High School

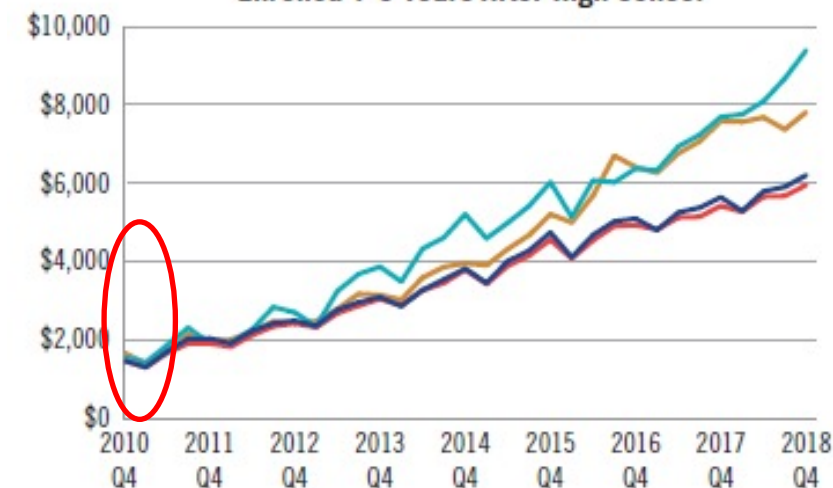


Earnings Not Conditional on Working

Enrolled Right Away After High School



Enrolled 1-5 Years After High School



Source: Authors' calculations based on data supplied by the Massachusetts Department of Elementary and Secondary Education.

Note: Sample is 2008-10 MCAS test takers who subsequently graduated from a Massachusetts public high school.

In addition, many of the demographic, financial, and academic factors that affect community college enrollment and completion are also correlated with employment and earnings.



Women are more likely than men to both attend community college and complete either a certificate or an associate's degree



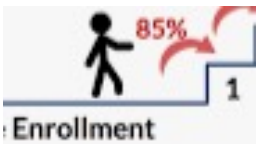
Blacks and Hispanics are nearly twice as likely to enroll in community college compared to Whites, yet the share earning an associate's degree is roughly half that of Whites.



Low-income individuals are more likely to attend community college, but they are less likely to complete any community college credential compared to their higher-income peers.

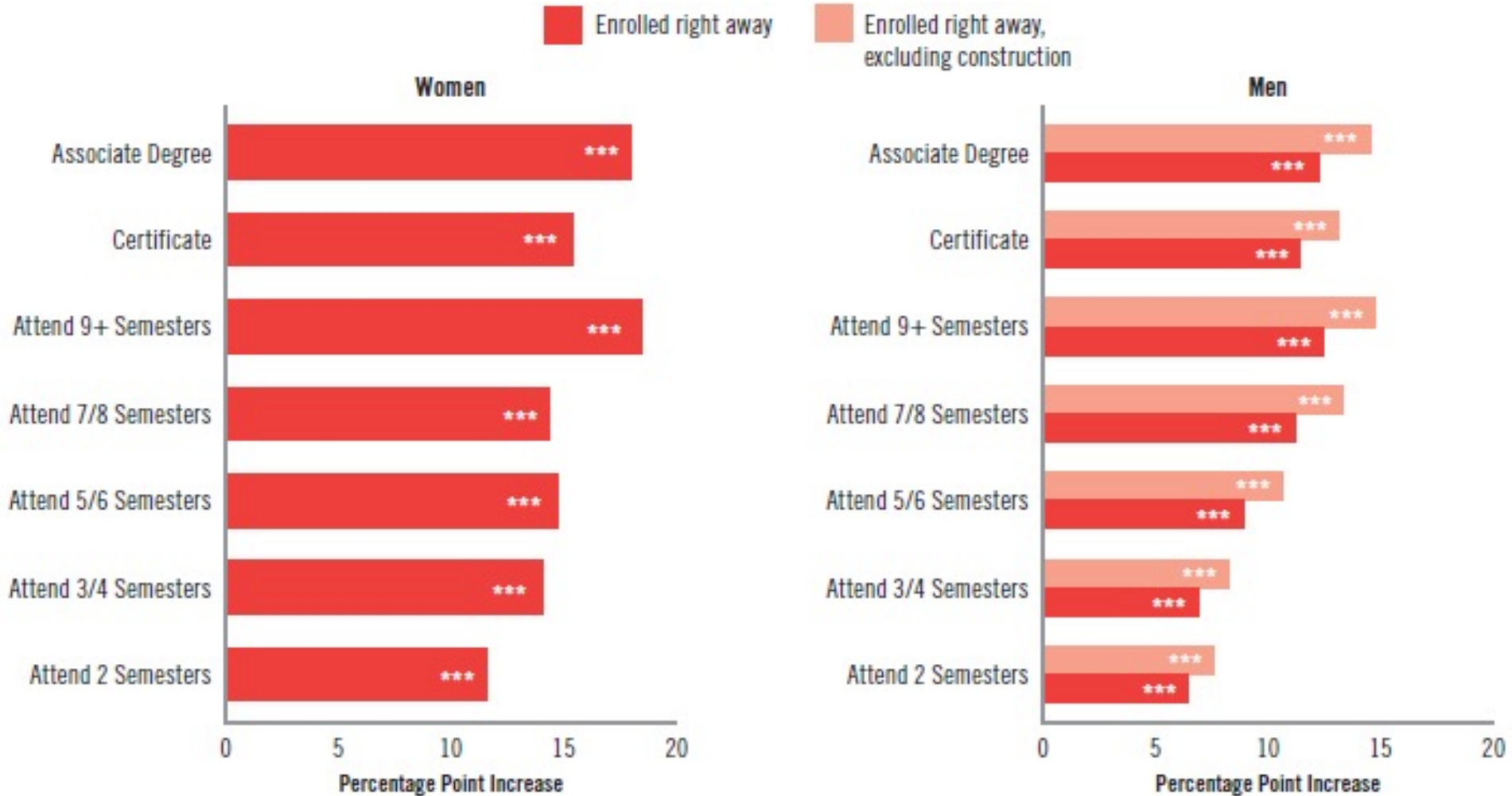


Students who delay enrolling in community college have lower test scores on average, and are more likely to have been chronically absent in high school.



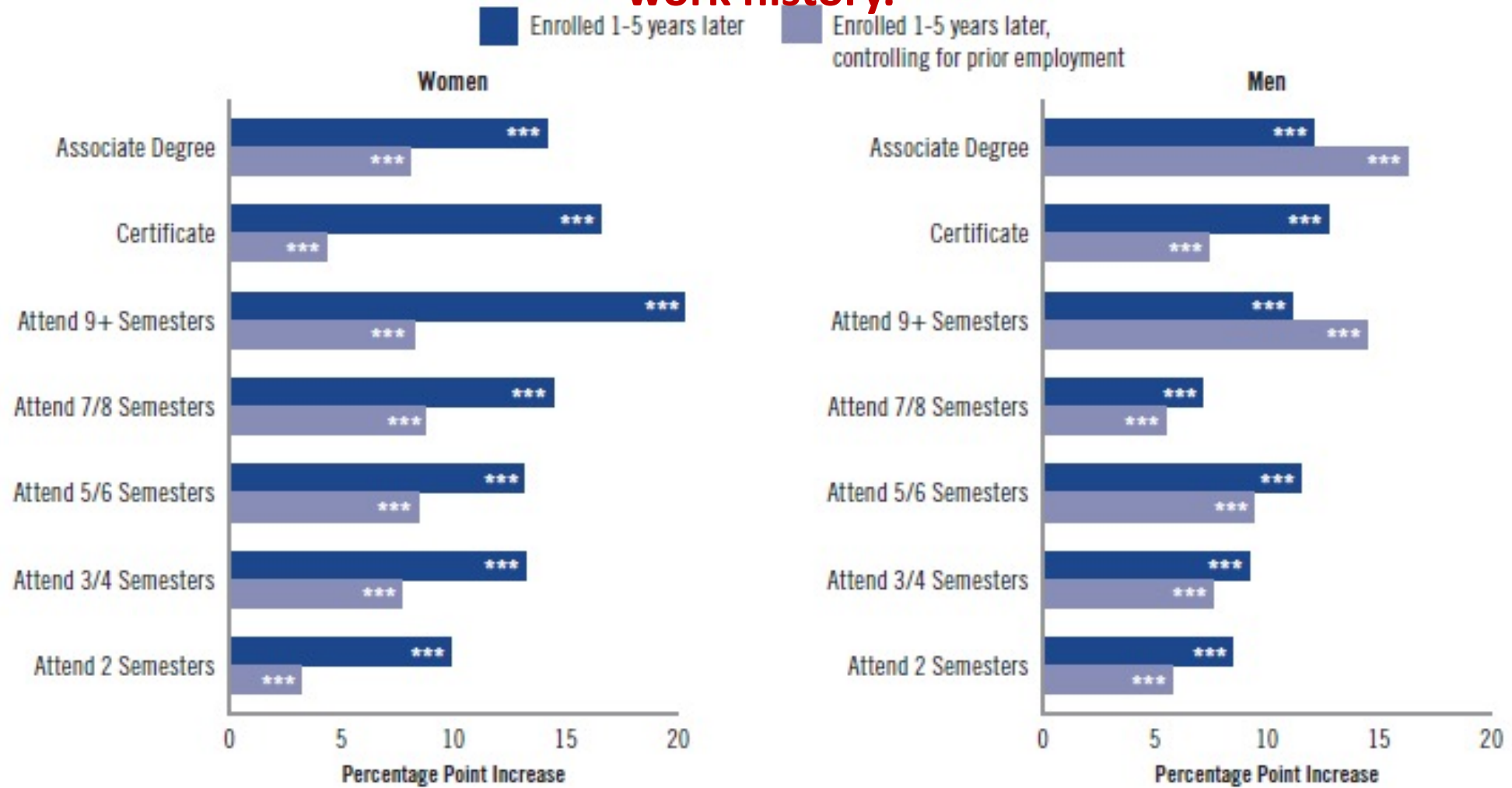
Those **completing a community college credential** are more likely to have enrolled right away and persisted in their enrollment from the first to the second year.

Students who enroll right away are 6 to 18 percentage points more likely to be employed than terminal high school graduates with those earning a credential having the highest return.



Source: Authors' calculations based on data supplied by the Massachusetts Department of Elementary and Secondary Education.
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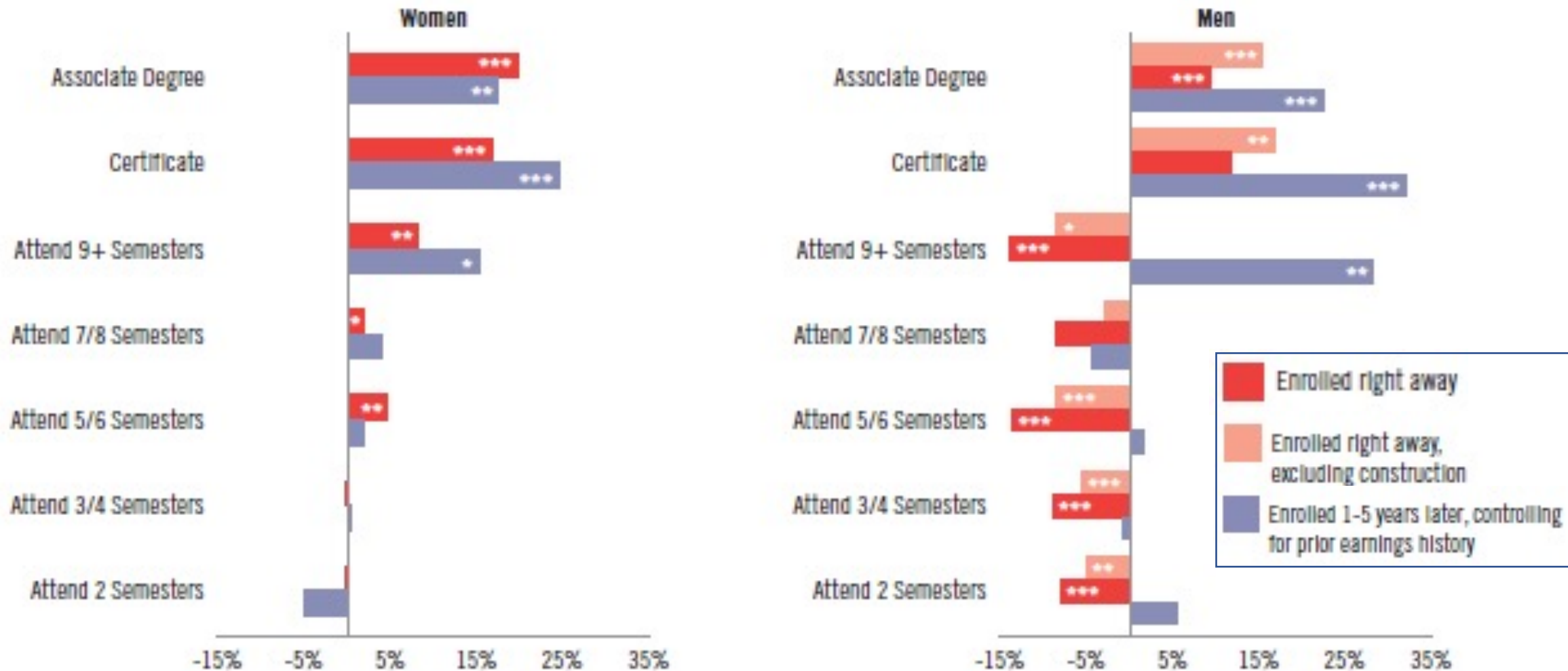
Among students who delay enrolling employment gains relative to terminal high school graduates are also positive, roughly 5 to 15 percentage points when we account for prior work history.



Source: Authors' calculations based on data supplied by the Massachusetts Department of Elementary and Secondary Education.
 Note: Sample is 2008-10 MCAS test takers who subsequently graduated from a Massachusetts public high school.

Conditional on working those who obtain a community college credential have earnings that are 15 to 30 percent higher than terminal high school graduates but little to no gain for just attending.

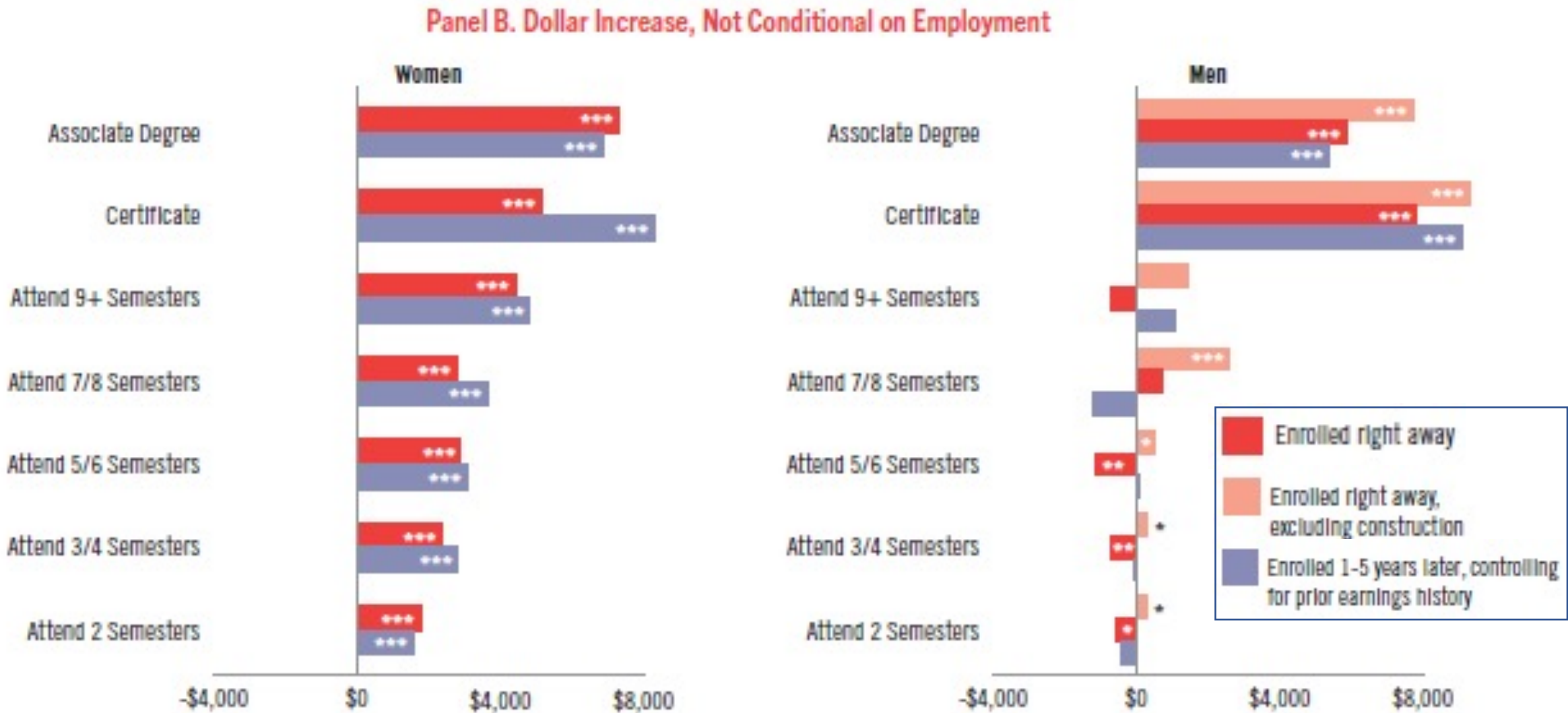
Panel A. Percent Increase, Conditional on Employment



Source: Authors' calculations based on data supplied by the Massachusetts Department of Elementary and Secondary Education.

Note: Sample is 2008-10 MCAS test takers who subsequently graduated from a Massachusetts public high school.

Not conditional on working women consistently earn \$1,550 to \$8,000 more than terminal high school graduates but and men earn \$5,500-\$9,000 but only if they obtain a credential.

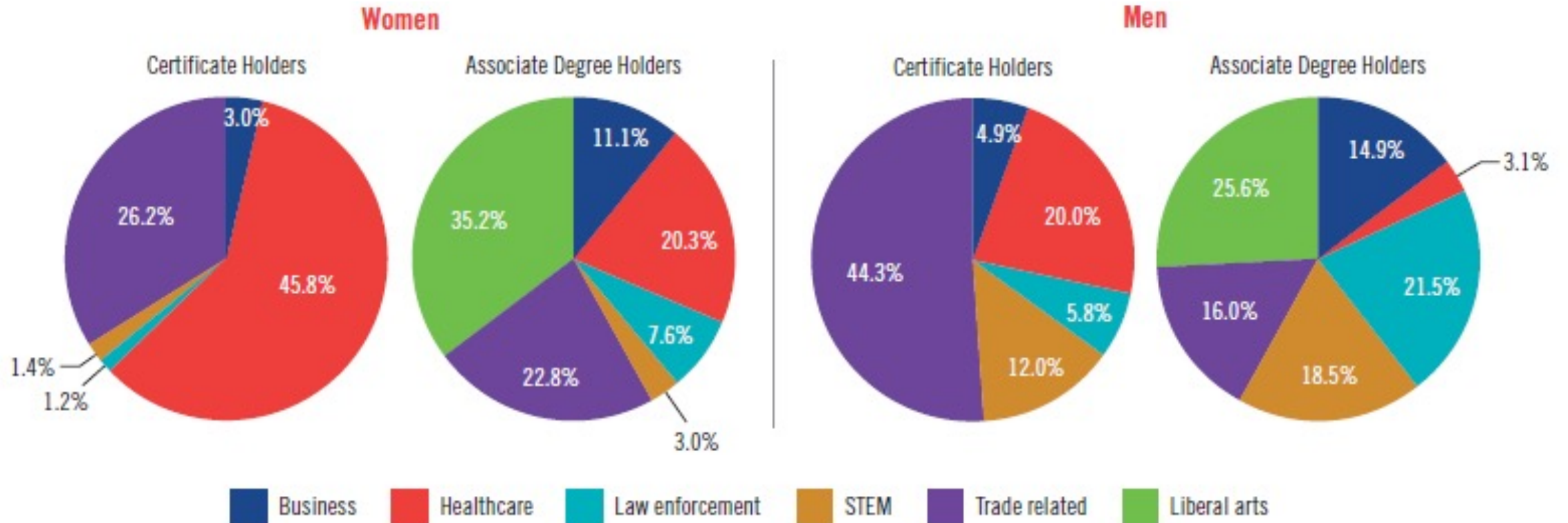


Source: Authors' calculations based on data supplied by the Massachusetts Department of Elementary and Secondary Education.

Note: Sample is 2008-10 MCAS test takers who subsequently graduated from a Massachusetts public high school.

Women are more likely to earn a certificate or an associate's degree in health while men are more likely to obtain a credential in law enforcement or a STEM-related field.

Distribution of community college credentials by field of study for women versus men



Source: Authors' calculations based on data supplied by the Massachusetts Department of Elementary and Secondary Education.

Note: Sample is 2008-10 MCAS test takers who subsequently graduated from a Massachusetts public high school.

Women degree holders consistently receive the highest earnings return in business and healthcare. Men receive the biggest earnings boost from healthcare and STEM but not liberal arts.

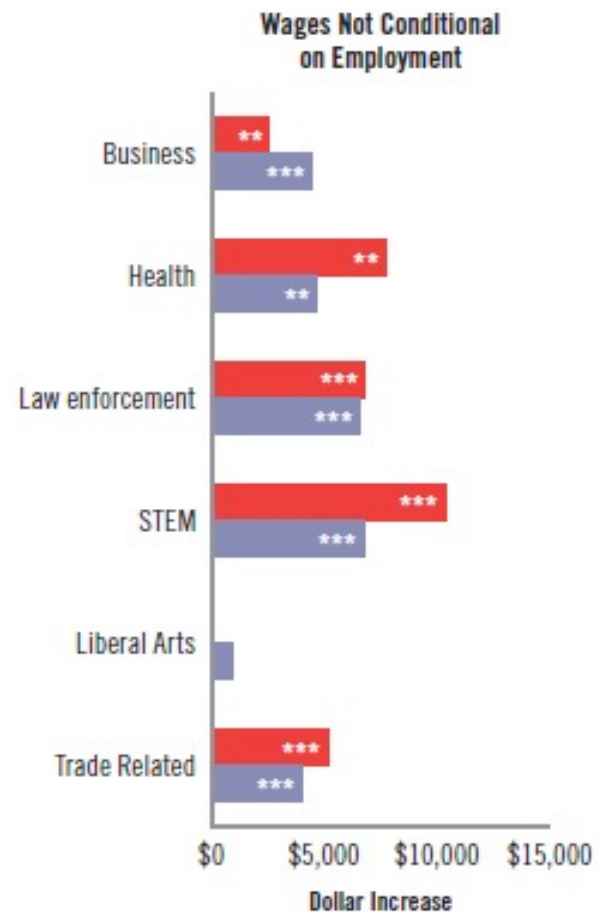
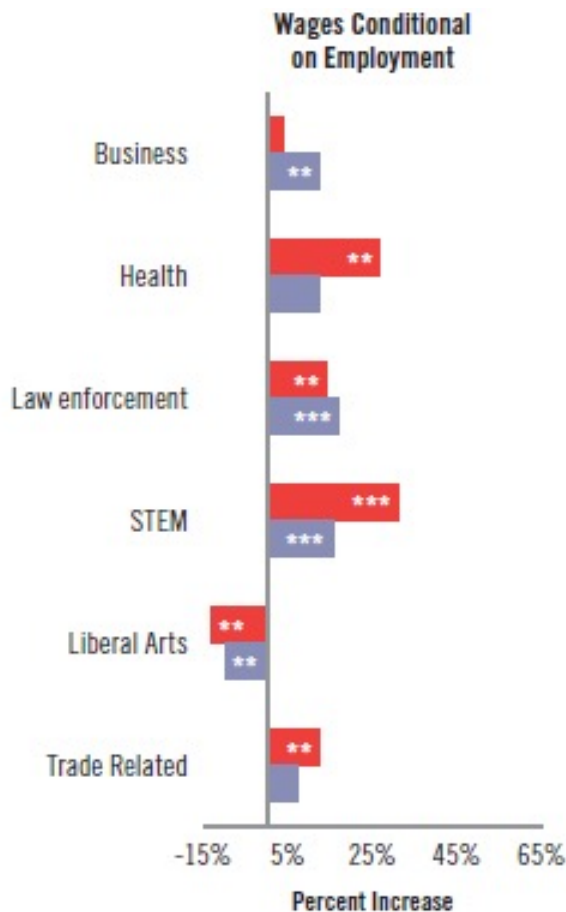
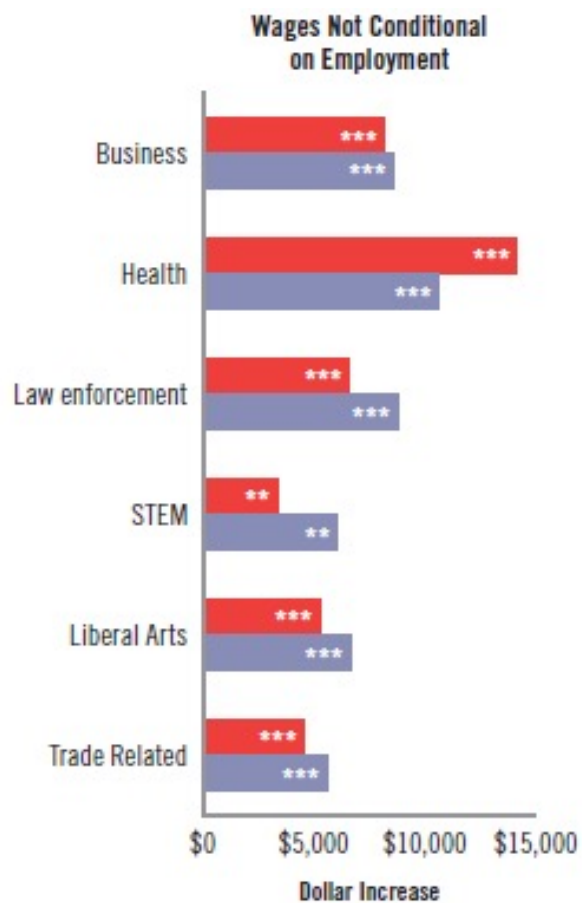
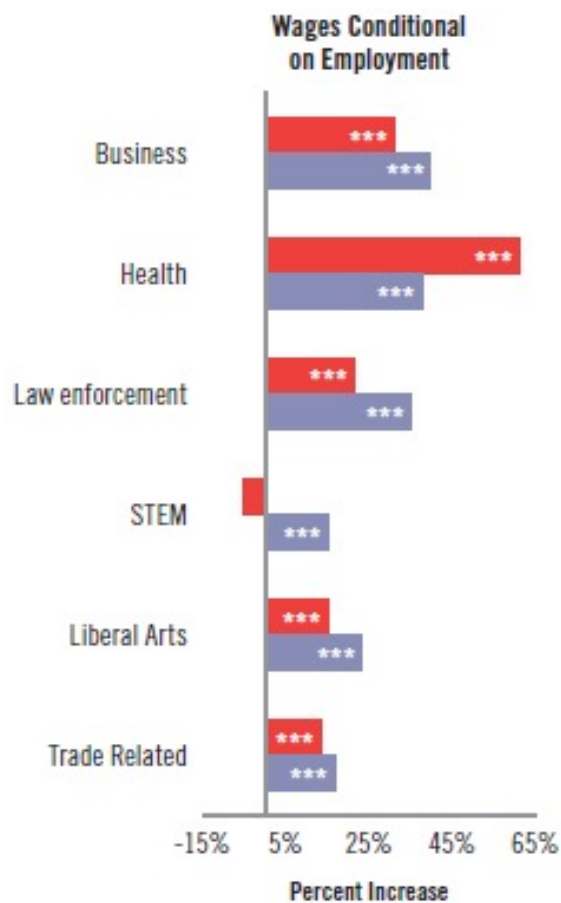
Labor Market Returns to Associate's Degrees by Field of Study

Panel A. Women

Enrolled right away

Enrolled 1-5 years later, controlling for prior earnings history

Panel B. Men

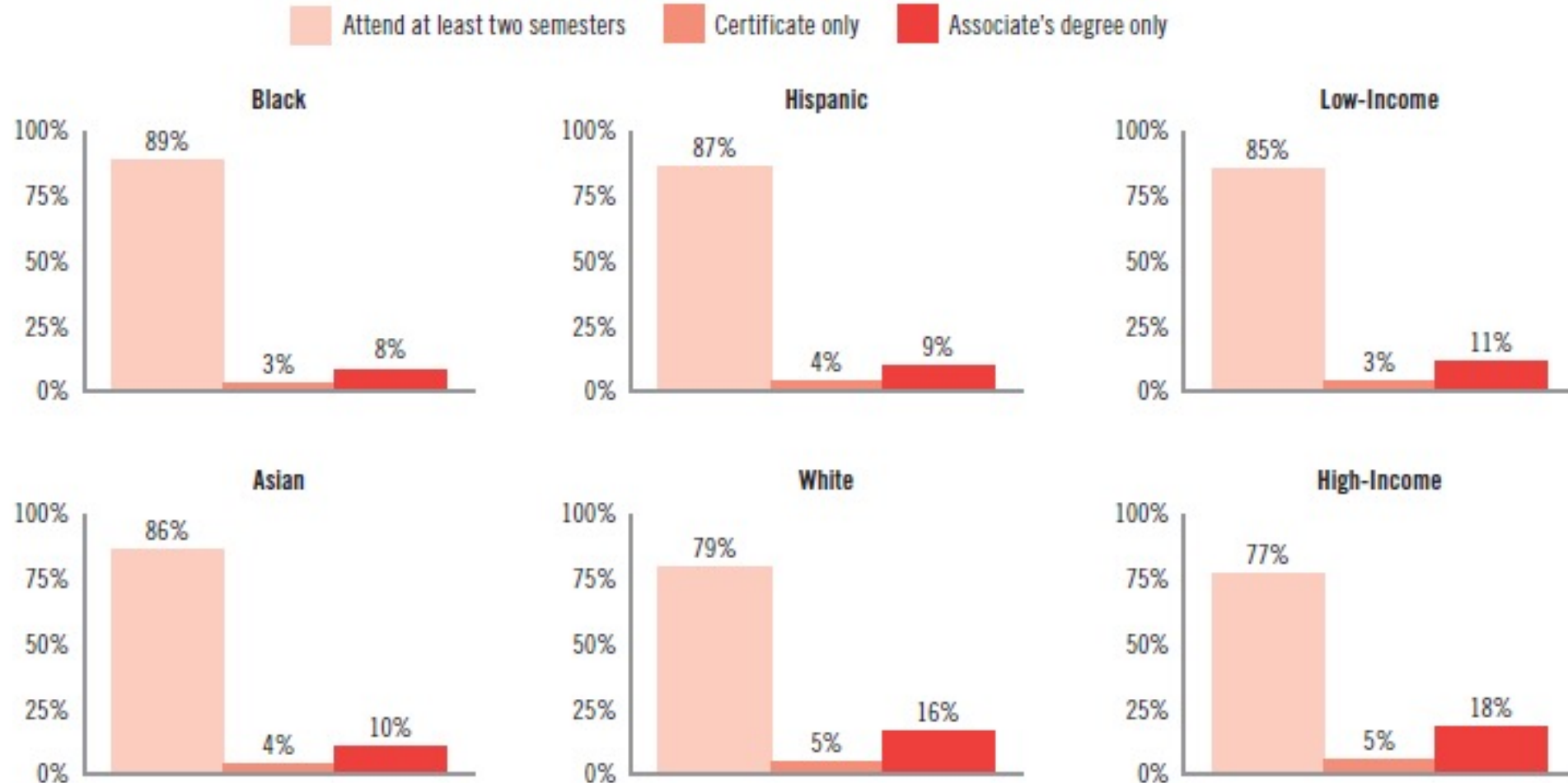


Source: Authors' calculations based on data supplied by the Massachusetts Department of Elementary and Secondary Education.

Note: Sample is 2008-10 MCAS test takers who subsequently graduated from a Massachusetts public high school.

Black and Hispanic (as well as low-income) students are nearly twice as likely to enroll in community college compared to White (or high-income) students, but are nearly half as likely to complete an associate degree than those other groups.

Post-Secondary Outcomes Among Community College Enrollees by Race and Socio-economic Status



Source: Authors' calculations based on data supplied by the Massachusetts Department of Elementary and Secondary Education.
Note: Sample is 2008-10 MCAS test takers who subsequently graduated from a Massachusetts public high school.

Our findings demonstrate that the education provided by community colleges in Massachusetts generates value for students and increases the productivity of the state's workforce.

However, there is clearly more that educators and policymakers can do to position community colleges to provide an even stronger contribution to equitable economic growth.

- **Utilize information on the returns to higher education by field of study to inform college and career advising.**
- **Increase access to community college while accelerating completion.**
- **Provide comprehensive student support to boost completion rates.**
- **Target financial assistance to students with the greatest need.**
- **Increase access to internships and other career exploration opportunities.**
- **Enhance the state's longitudinal student data system and provide broader public access.**

After suffering large drops in enrollment during the past year with fewer students from under-represented minority and low-income groups, Massachusetts community colleges will be expected to serve as one of the primary components of the nation's workforce development recovery plan..

Investing in community colleges now will enable them to implement the right services and supports to bring students back and help them achieve better education and career outcomes.

