

# Does paying more for a college education produce a higher future wage?

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## Abstract

Have you ever wondered if investing more of your time and money to attend a more prestigious institution makes for a better financial future? Our paper examines the long-term effects of college qualities on earnings of financially independent workers. We study this relationship by observing the impact of institutional characteristics such as admission rates, average test scores, proportion of students in a particular field of study, and net expenditures on wages incurred 10 years after enrolling in college. In doing so, we take into account demographics, socioeconomic status, and debt accumulation of the college graduate. Upon analyzing the mean annual earnings of 1109 independent students in 2019 with the amount spent on attending college ten years prior, we discover a significant relationship consistent with numerous studies. More specifically, we find a 10% increase in net price to be associated with a near full percentage increase in earnings ten years after graduation.

## Methods

Our data comes from the College Scorecard, collected and published annually by the United States Department of Education. The specific data set we analyze is the most recent institutional level data for the 2009-2010 academic year in addition to the 2019 earnings of Scorecard's most recent data cohort. The data includes a collection of variables related to institutional, personal, and loan characteristics that can potentially impact future wages. We have sorted through the data and collected the variables necessary for our model.

**Figure 1: Results**

Linear regression, robust  
Number of obs = 1,109  
F(16, 1092) = 92.24  
Prob > F = 0.000  
R-squared = 0.5747  
Adj R-squared = 0.5685

<u>lmearn10y~d</u>	<u>Coef.</u>	<u>Std. Err.</u>
log (netprice)*	.0595736	.0177847
log (satavg)*	1.28783	.0658981
log (adm_rate)*	-.2357869	.0338664
log (mdndebt)	.0273126	.0235692
log (faminc)*	.1305575	.0203119
engineer*	.3872001	.0879323
libarts	.0122935	.0496841
health*	.3360261	.053075
math*	1.606933	.6393788
business*	.2059709	.0632753
comput	.2152032	.180411
white*	-.1261079	.019248
black	-.0542699	.0453439
hisp*	.3711582	.1514568
asian*	1.400598	.2138377
female*	-.2118895	.0663962
_cons	-.1126779	.441281

Note: \* is statistically significant at 95% confidence interval

## Interpretation

The linear regression shows a correlation between net price of tuition and future income. For each 10 percentage point increase in net price, earnings ten years post graduation increases by nearly 0.6 percentage points, a statistically significant value. However, is the significance of paying more high enough to justify forgoing a lower tuition option for a higher one? In short, no. The difference we see between paying more for higher education is significant, but is not detrimental to your future wage. This is due to the various interactions between the other variables that lend themselves to a higher future wage. The regression promotes the idea that there are other variables that possess a more substantial impact on future wage than the price of attendance. Some of these variables include average SAT score, family income, and proportion of students at a given institution pursuing a certain major. For example, future wages increase by 16.1% when an institution experiences a 10% increase in the proportion of its students pursuing bachelor degrees in math-related fields. Due to this knowledge there will be a significantly greater impact on being a math major versus how much you spend on the net price of tuition. This leads to the determination that There are several other facets that may be more beneficial to focus on than picking a more expensive school over a less expensive option.

## Conclusions

Our results suggest that for each 10 percentage increase in net price there is a 0.6 percentage earning increase ten years after graduation. Despite the statistical significance of these results, other variables are found to have a greater impact on future wage than the net price spent on attendance. For example, average SAT score has an objectively greater impact on future wage. This is due to the fact that for every 10% increase in SAT average score there is a 12.8% earning increase ten years after graduation. There was also a greater correlation between higher family income and particular majors such as engineering, math, and business that are associated with higher earnings later in the future. The latter are found to have a more substantial impact on future wage compared to net price of tuition.

