

Team #78: Raising Incentives for Student Education (RISE)

Summary

We propose Raising Incentives for Student Education (RISE). This program, administered by the Department of Education (DoE), will provide all federally unemployed individuals, aged 18-24, with a voucher to attend participating community colleges in their state for free. To participate, community colleges will apply to receive a grant to cover the expense of enrolling these students and designing COVID-19 flexible learning infrastructure. This paper will focus on community colleges, but we believe similar programs focused on bachelors and masters degrees could be implemented as well.

RISE serves multiple goals: it will provide unemployed youth with increased education, decrease the labor force supply glut, train individuals for industries in which they would create the greatest value post-COVID-19, and provide an injection of funding into the community college system. The current economic crisis is the result of systemic issues in our nation. That is why RISE will attempt to address the root causes of the current instability rather than simply create a stop-gap measure to stabilize the country until the end of the pandemic.

Background

COVID-19 triggered two inter-related crises, increasing already problematic youth unemployment and threatening to bankrupt the post-secondary education system. Individuals under the age of 25 currently face the most dire job market of any age group; the unemployment rate is 29.8% for individuals 18-19 and is 23.2% for individuals 20-24.¹ This is concerning since youth unemployment causes a persistent negative impact on earnings.² This crisis has also endangered community colleges, placing them in a precarious financial position.³

Proposed Recommendation

This proposal provides federal funding for costs incurred by both students and community colleges. The first part of RISE consists of an individual voucher. Any individual age 18-24, after receiving federal unemployment, will receive a voucher allowing them to attend any in-state RISE participating community college.¹ If an individual chooses to enroll in a community college using the voucher, they will continue to receive federal, but not state, unemployment benefits, correcting a current disincentive that results from the fact that those who are enrolled students may not be eligible for unemployment.⁴

¹ St. Louis Federal Reserve

² Mroz et al. 35

³ Krantz

⁴ Zeitler

Second, there is the community college grant program. To ensure equitable distribution of grants across states, the following formula will be used to determine the number of students to fund in each state:

$$N_s := \gamma_s \cdot \text{Local Youth Population}_s \cdot \text{Youth Unemployment Rate}_s$$

where gamma represents the assumed desired take-up rate of the voucher. For our calculations, we set the rate at 20 percent nationwide, distributed equally across the 50 states. This formula generates N_s , which represents the maximum number of students who can enroll in a given state (table 1).

Community colleges are then eligible to receive grants to implement vocational and professional training programs, each associated with a specific number of student spots, N_i , until the statewide or regional cap is met. Grants will be awarded according to the following formula:

$$\text{Grant}_i = (\text{Expenditure per FTE}_i - \text{Tuition}_i) N_i + \sum_{\text{program } p} \text{Upfront fixed cost}_{i,p}$$

where the upfront fixed costs encompass all new infrastructure costs, both physical and digital, in addition to new materials and additional human capital necessary to implement each program. We have created the following tool to estimate the Grant distribution across the 50 states (figure 7).

The cost of this program will be partially offset by a repayment program. Graduates of the RISE program with an annual income of 400% of the Federal Poverty Line or more will be required to pay the government 2% of their pre-tax wages until the total tuition is paid.ⁱⁱ

It is also recommended that the DoE prioritize funding programs that will provide students with skills that have led to increased earnings and increased employment probability, as well as those that will remain relevant after COVID-19. Previous studies have shown high returns to IT, healthcare, and skilled manufacturing.^{5 iii} Furthermore, based on our analysis of top-ranked online Associate’s degree programs, healthcare and IT Associate’s degrees are already among the most common programs offered in an online setting.^{iv}

However, in order to maximize the likelihood that participants in these training programs can actually find jobs once the economy recovers from the shock of COVID-19, we propose tailoring program recommendations to the future economic landscape of each region. We calculate a risk factor for each region’s economy based on how the primary industries have already been affected by the pandemic on a national scale. We suggest that colleges implement programs that are relevant to the local economy but caution them against training individuals to enter industries classified as “very high” risk (figures 5 and 6).^v

⁵ Improving Employment Outcomes for Disadvantaged Students, Holzer 3

Evidence and Analyses⁶

There are approximately 4,179,838 unemployed youths ages 16-24.^{vi} The objective of this program is to initially provide community college placements to 20%, or 835,968, of these unemployed youths, focusing on those who have already graduated high school.

Cost

The program will cost the federal government, considering voucher costs (tuition), additional non-tuition covered expenses per student (figures 3 and 4 for state breakdown), and grants for learning infrastructure, approximately \$20,549,004,800 over two years, assuming all who enroll complete both years.^{7 vii} Some of the cost from the total expenditure will be re-couped through the repayment program.

Benefit

This program would increase total annual earnings of participating youth by \$3,779,832,420, increasing earnings over a 40-year career by \$151,193,296,800.^{viii} Based on an analysis of lifetime earnings trajectories, we expect that this additional income would result in \$35B of additional government revenue through income taxes over the lifetime of the participants.^{ix} Furthermore, a projected total of \$1,013,742,843 would be repaid to the government through the repayment program.^x

Implementation and Next Steps

We believe this program is politically feasible. For one, it could be incorporated into a larger stimulus. Though it is expensive, its cost is made up significantly by its benefits, and is a small sum compared to the \$2 trillion stimulus passed earlier this year.⁸ We expect that each two-year RISE cohort will incur a net revenue of approximately \$10B to the federal government. Accounting for private benefits due to increased earnings, we estimate that the overall net benefit of this program over the course of participants' careers will be approximately \$125B. Furthermore, vocational education receives more broad bipartisan support than other education proposals, particularly since it will help small and medium businesses by developing a skilled workforce.

This program would, initially, be implemented for just two years. However, we would recommend renewing it until the economy again reached positive growth and youth unemployment decreased below pre-COVID levels.^{xi} We recommend using metrics such as

⁶ For the following analysis we used the most recent national data from the Bureau of Labor Statistics from May 2020. The accompanying graphics are calculated on a county level and use slightly less recent April 2020 data, since a county level disaggregation is not yet available. Thus, there is some discrepancy between the written calculations, and the calculations shown in the graphics.

⁷ Startz

⁸ The \$2 Trillion CARES Act

earnings, employment status, youth labor supply, and stability of college finances to evaluate the program.

Figures & Tables:

Table 1:

Student Voucher Cap for each State

State	N
AL	15074
AK	2545
AZ	22265
AR	7238
CA	153049
CO	15849
CT	6787
DE	3017
FL	59189
GA	30650
HI	7484
ID	4751
IL	50045
IN	28254
IA	8540
KS	8664
KY	16971
LA	15717
ME	2954
MD	13268
MA	27481
MI	57813
MN	10827
MS	11286
MO	13986
MT	3006
NE	4134
NV	18973
NH	5387
NJ	30578
NM	5637
NY	68351
NC	30547
ND	2047
OH	46251
OK	13656
OR	13787
PA	44270
RI	4779
SC	14195
SD	2282
TN	23390
TX	91179
UT	9382
VT	2716
VA	21893
WA	26652
WV	6264
WI	20242
WY	1272

Figure 1:

Community Colleges per 100k Youth

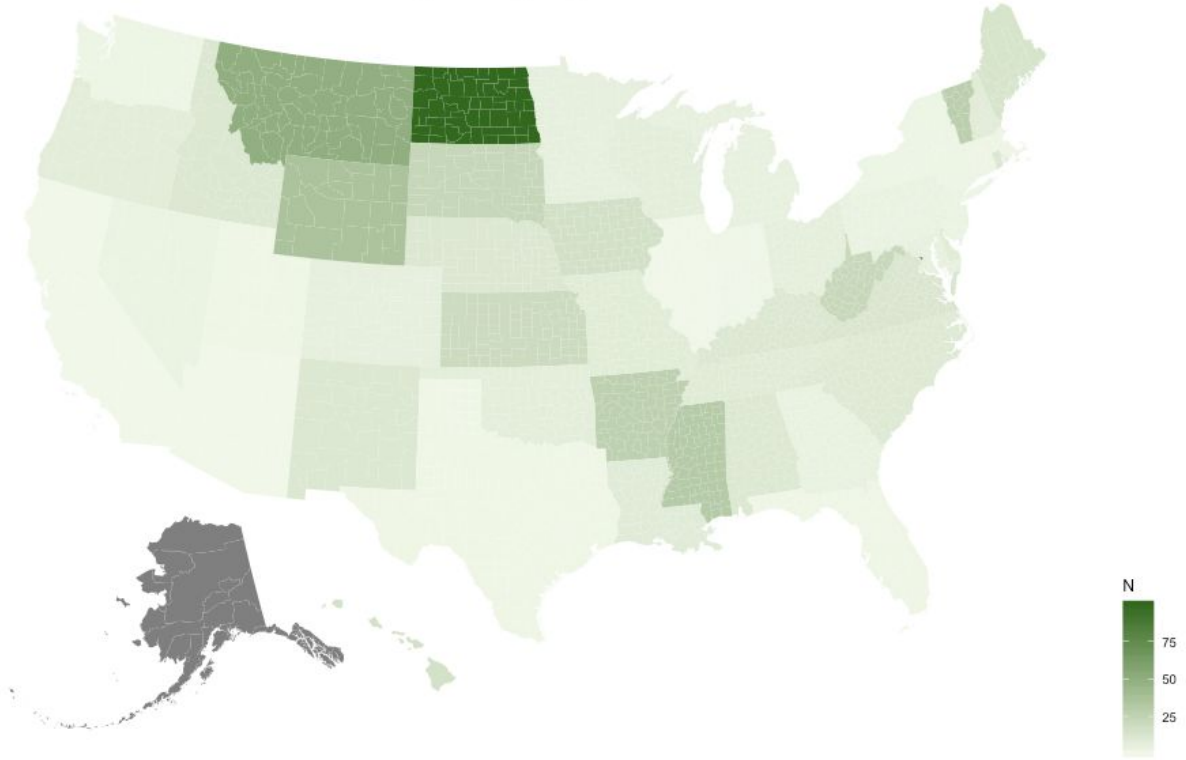


Figure 2:

Log Youth Population per State

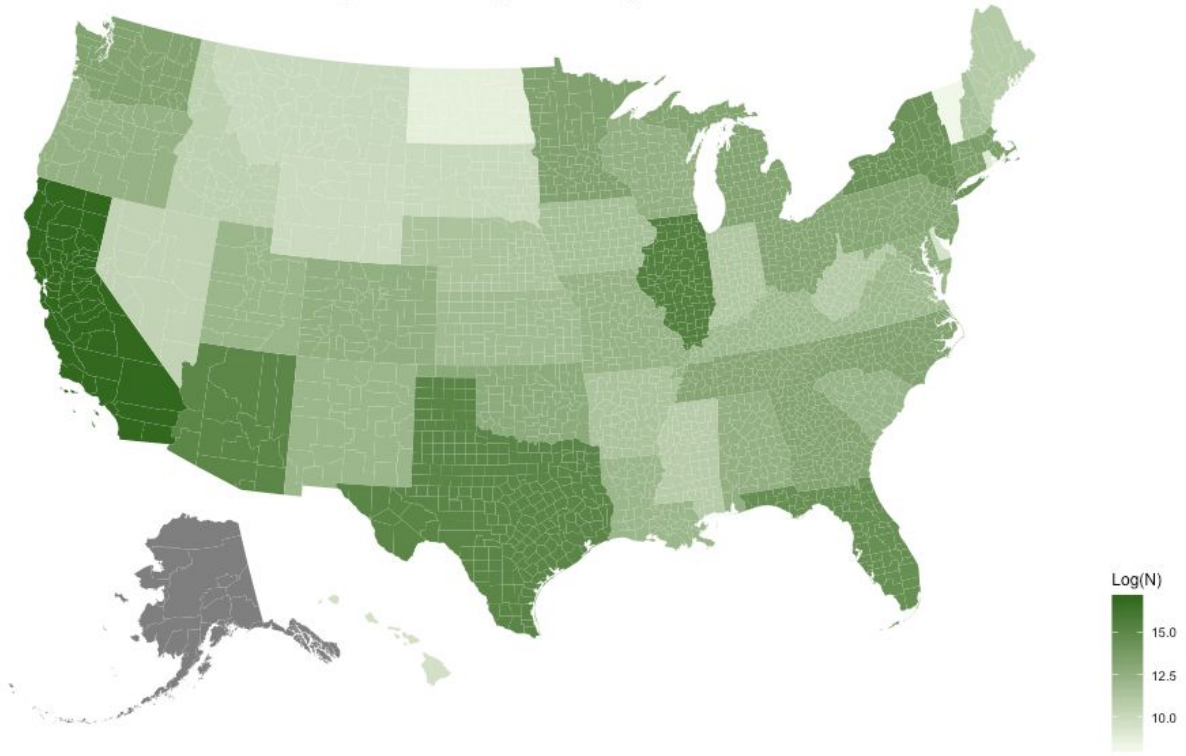


Figure 3:

Average Tuition per State

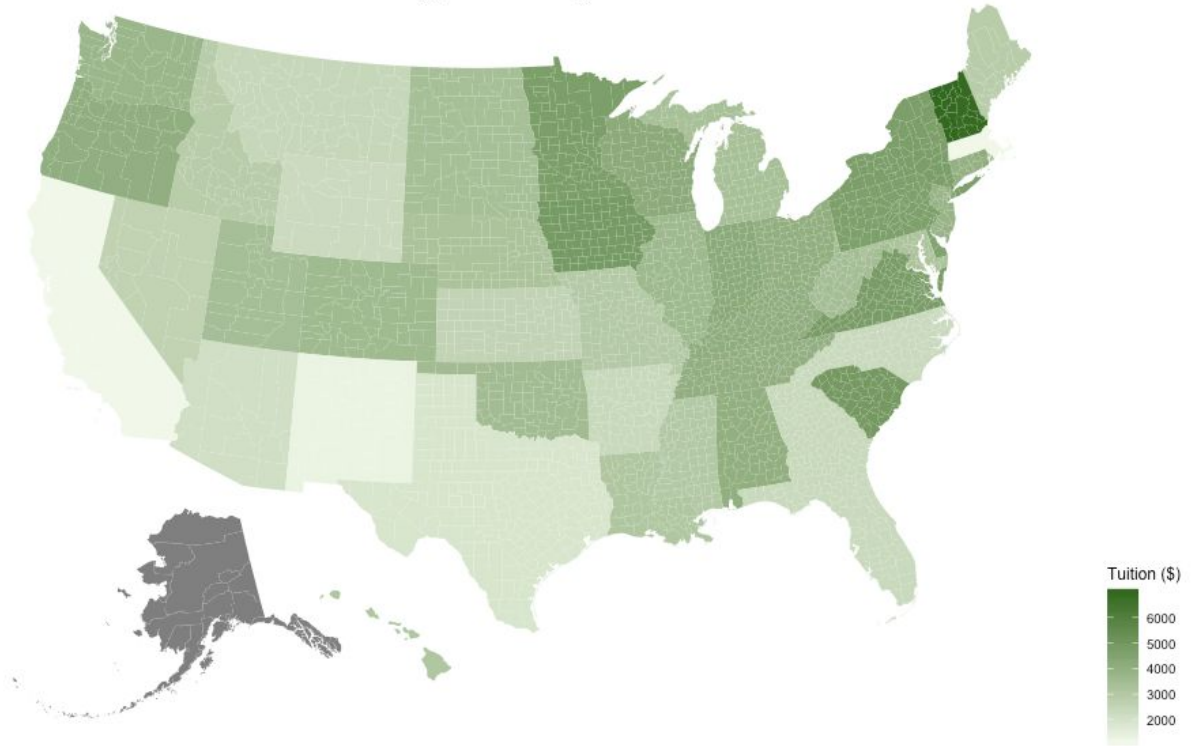


Figure 4:

Average Instructional Expenditure per FTE per State

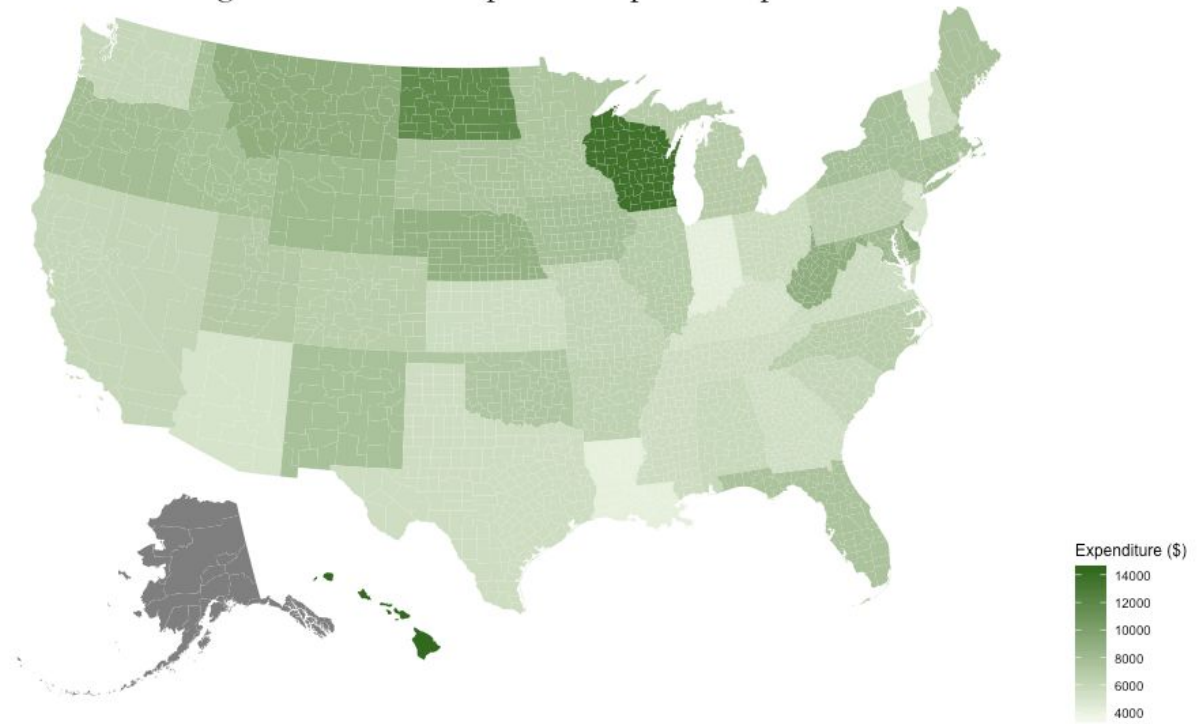


Figure 5:

County Level Risk Assessment

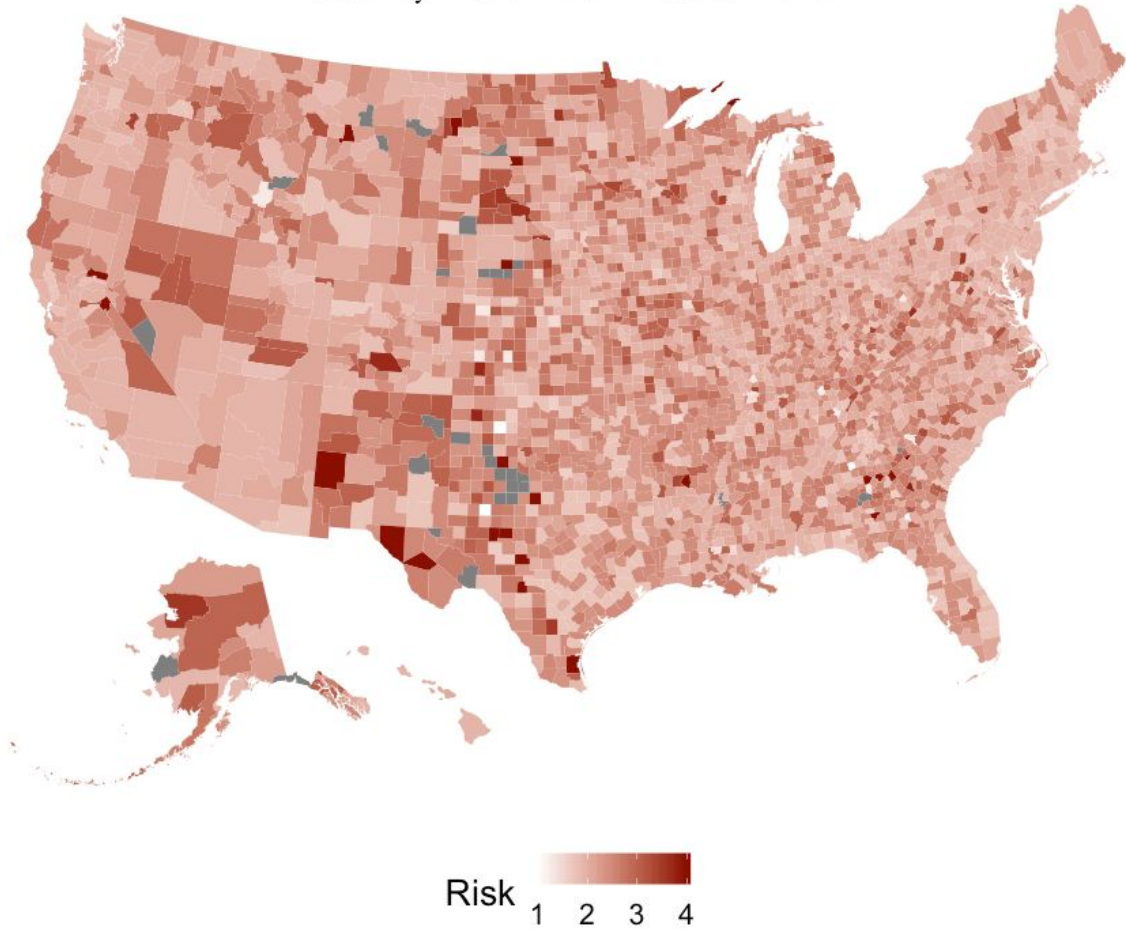


Figure 6:

County Level Share of High Risk Sectors

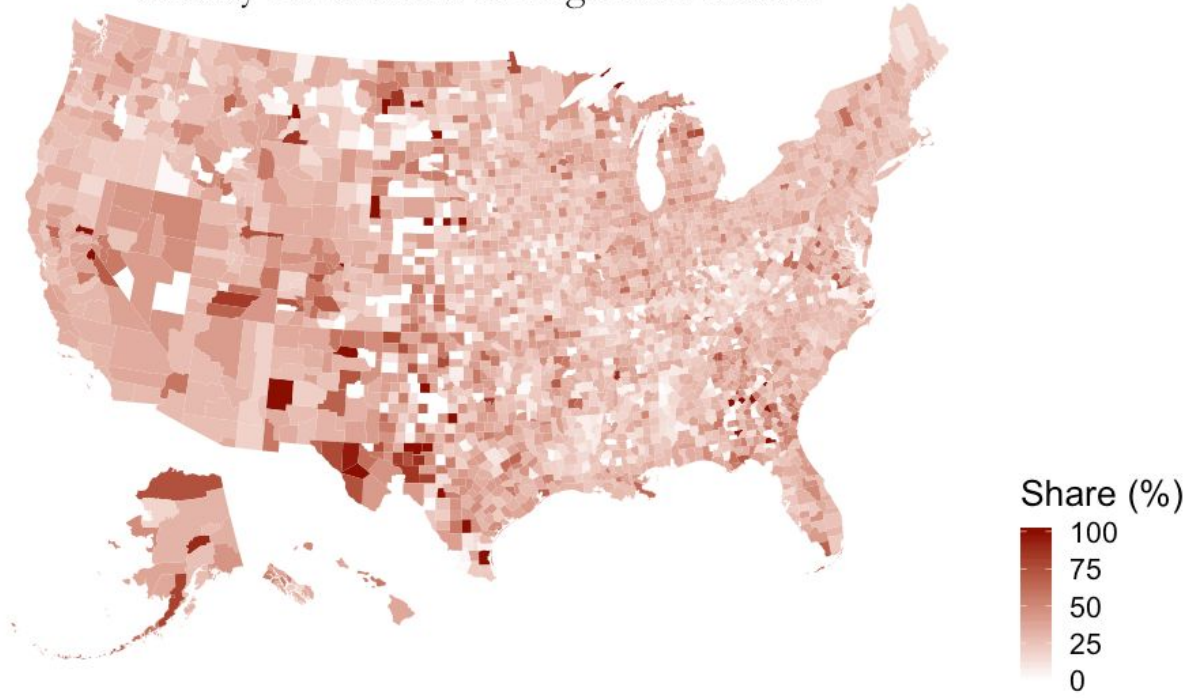
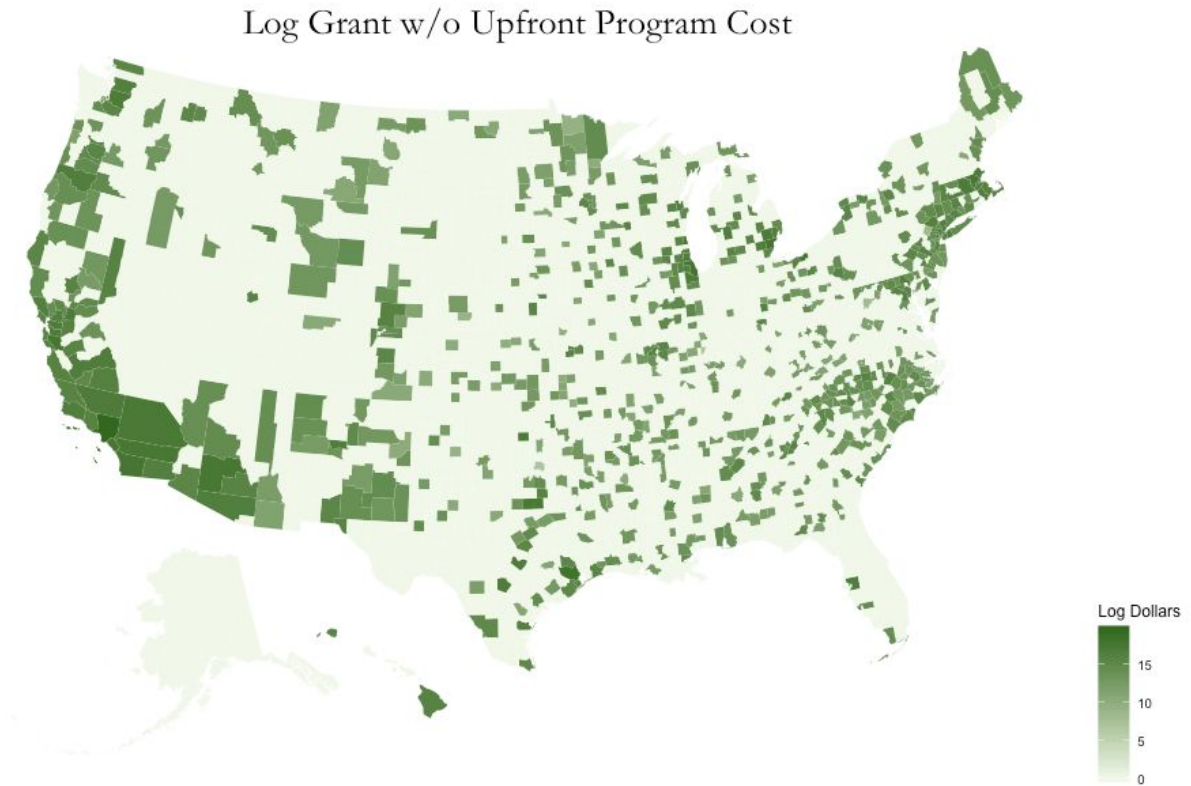


Figure 7:



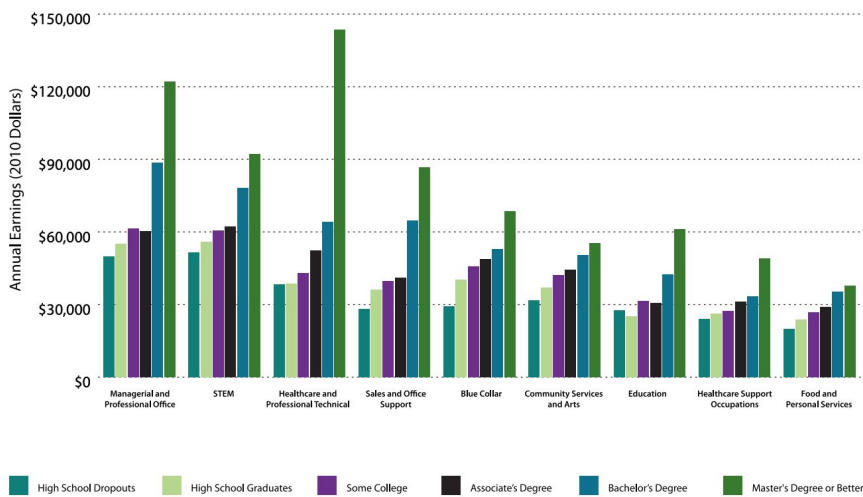
Data Sources:

Data on school characteristics comes from The Integrated Postsecondary Education Data System provided by the National Center For Education Statistics. Population level data comes from the 2018 estimate of the population from the US Census and unemployment level data comes from the April 2020 edition of the Bureau of Economic Analysis. County-level economic and industry data comes from the US Census Bureau (2017). The change in revenue by industry due to COVID-19 comes from Q1 2020 reports released by the US Census Bureau.

Appendix

- I. Youth unemployment, for the purposes of this memo, is defined as unemployment of individuals ages 16-24.
- II. 400% of the Federal Poverty Line (FPL) is \$48,500 for a single person and \$100,400 for a family of four.

FIGURE 1:
Average Earnings of US Workers by Educational Attainment within Occupation/Industry Groups



- III.
- IV. Online degree programs convene better to some professions and industries than others. Based on a sample of top-ranked community colleges' online offerings, the industries which seem to be currently the best served by online Associate's degree programs are the following: Business Administration; Information Systems; Criminal Justice; Medical Services; and Accounting.

In order to determine which industries are currently best served by online degree programs, we consulted the *Guide to Online Schools* list of top-ranked community colleges which offer online Associate's degrees.¹⁰ Due to time constraints, our inquiry was limited to the top 10 ranked schools. The complete list of online Associate's degrees offered by each school was compiled into a single document, and each program was coded based on which industry it served. Degree programs which focus on a specific academic discipline instead of occupational training – and therefore generally do not serve a particular industry – were not included in the industry analysis.

In total, there were 160 online Associate's degree programs offered by the top 10 community colleges. Excluding degrees based on academic disciplines (e.g. Sociology, Political Science), the remaining 126 degrees served the following industries:

⁹ Raising Job Quality and Skills, Holzer 9

¹⁰ Guide to Online Schools

<i>Category</i>	Number of Programs
Business Administration	32
Information Systems	15
Criminal Justice	14
Medical Services	13
Accounting	10
Trades	8
Education	8
Paralegal Services	6
Social and Human Services	5
Aviation	5
Language Studies	4
Fitness	2
Arts	2
Finance	1
Agriculture	1
Total	126

- V. The primary industries in a given region are the industries (as defined by the US Census Bureau) that employ the greatest number of people in the area prior to COVID-19. We use the change in revenue between Q4 of 2019 and Q1 of 2020 to understand which industries have been the most affected. The risk designations are as follows: Industries with a change in revenue between +1% and -1% are “low” risk industries, -1% and -5% are “medium” risk, -5% and -15% are “high”, and less than -15% are “very high”. Using a weighted average by proportion of employees pre-COVID-19, we assign each county a combined “risk” score.
- VI. The data used in the following calculations is from the May 2020 jobs report. *Total Population * Labor Force Participation Rate * Unemployment rate*
- A. 20-24: $21,632,940 * 0.66 * 0.232 = 3,312,436$
 - B. 18-19: $8,586,266 * 0.339 * 0.298 = 867,402$
 - C. $3,312,436 + 1,705,162 = 4,179,838$

- VII. The cost of the vouchers themselves is equivalent to the average community college tuition, which is \$3,200 in per student expenditures. The additional total expenditure, minus tuition, is \$6,100 per student.¹¹ The cost of creating programing infrastructure also must be considered. Analysis of one proposed program to implement vast changes to community college programming estimated a high-end \$5B cost.¹² This creates equation: $(3,200+6,100)*835,967.6 = \$7,774,498,680$ per year. Given associate's degrees generally take two years to complete, the cost for all these individuals to complete their education is $(3,200+6,100)*2*835,967.6 = \$15,549,004,800$. This, in addition to the \$5B cost is \$20,549,004,800.
- VIII. Compared to a high school diploma, the estimated average annual earnings premium for Associate's degrees is \$8,240 (and the earnings premium of a half-completed degree is \$2,690).¹³ We are assuming that 835,968 students enroll, but only a subsection of those individuals will complete a degree. Based on current trends, only 33% of students who enroll in 2-year colleges will receive a degree¹⁴ – meaning 275,870 students graduate with a degree and 560,098 students only complete part of their schooling. We multiply the earnings premium of a completed and semi-completed Associate's degree by, respectively, the number of students who complete their Associate's and the number who complete some college credits but not a full degree. We calculate that the students who received their Associate's cumulatively make \$2,273,168,800 total additional annual earnings. Those who only partially complete their Associate's make \$1,506,663,620 total additional annual earnings, compared to their earnings if they only had a high school diploma. In total, the students who enroll in community college due to this program will make an additional \$3,779,832,420 annually; multiplied over a 40-year career, this translates to an additional **\$151,193,296,800** in earnings.
- IX. In order to determine the total additional income tax revenue due to the RISE program, we analyzed lifetime earnings trajectories sorted by educational attainment.¹⁵ Based on the average earnings of different degree holders in each year after the completion of their education, we calculated the average annual income tax liabilities of individuals with high school diplomas, some college credits, and Associate's degrees, respectively. For simplicity, we used the 2019 federal income tax liability formula (single filing status) for all estimates. The resulting estimates approximated the average individual income tax liability of each group in each year of their career. These estimates do not include additional revenue to state governments and they are not indexed for inflation. We estimate that, compared to the average individual with a high school diploma, the average

¹¹ Startz

¹² Holzer 19

¹³ Jepsen et al. 96

¹⁴ Undergraduate Retention and Graduation Rates, National Center for Education Statistics

¹⁵ Changhwan and Tamborini 72.

individual with an Associate's degree pays an additional \$61,805 in income taxes over a 40-year career. For individuals who complete some college credits but not a full Associate's degree, the additional lifetime income tax incurred is \$36,795. Multiplied by the projected number of students who will complete Associate's degrees or some college credits – 275,870 and 560,098, respectively – our estimate of the additional federal income tax revenue during these students' careers is **\$37,658,951,260**. Due to our simplifying assumptions and data constraints, this is necessarily a very broad estimate. However, we are confident that this estimate falls within the correct order of magnitude. For the purposes of our analysis, we will estimate that the government will collect roughly \$35B in additional income tax revenues due to the higher earnings of students who participate in the RISE program.

- X. How much tuition will be re-couped by the government through the repayment program? The average individual with an Associate's degree makes approximately \$40,000 annually.¹⁶ Making \$48,500 (the minimum income required to pay back tuition), it would take roughly 7 years to pay back the full \$6,500 of tuition. Based on the average income of individuals with Associate's degrees, we will assume that roughly one-quarter of these individuals will make enough money to pay back tuition in full (\$448,288,750 repaid). We will further assume that a quarter of individuals pay back a portion of their tuition, paying half of tuition, roughly \$3250, on average (\$224,144,375 repaid). In addition, those who enroll in college but do not complete a degree may also be liable to repay their tuition. The average individual with some college, but no degree makes approximately \$36,000 annually.¹⁷ This includes those who enrolled in a 4-year university, so this number would likely be lower for individuals who enrolled in a 2-year college but did not complete a degree. We will assume that people who dropped out of 2-year colleges make approximately \$33,000 annually. Based on this income level, we will assume that roughly one-eighth pay back tuition in full, and that on average they owe \$3250, which is one year's worth of tuition (\$227,539,812 repaid). We will further assume that another eighth will pay back half of what they owe, roughly \$1625 (\$113,769,906 repaid). Based on the above estimates, we project that a total of **\$1,013,742,843** will be re-couped by the government through the tuition repayment program.
- XI. The January 2020 (pre-COVID) unemployment rates were 12.5% for 18-19 year olds and 6.6% for 20-24 year olds.¹⁸

¹⁶ National Center for Education Statistics

¹⁷ Annual Earnings, National Center for Education Statistics

¹⁸ Bureau of Labor Statistics, Table A-10.

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