DISCUSSION PAPER SERIES

Patterns in State Funding of Public Higher Education: Demography, Ideology, Educational Attainment, and Trends

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ABSTRACT

Patterns in State Funding of Public Higher Education: Demography, Ideology, Educational Attainment, and Trends*

The affordability of public higher education and, by extension, public higher education funding, is an important concern to prospective students and their parents as well as to policymakers. Our study examines the allocation of constant dollar per-student state appropriations across four-year or higher public colleges and universities over the years from 2000-01 to 2021-22. Our main findings are that per-student constant dollar state appropriations for public four-year institutions decrease with the percentage of conservative state voters and increase with the percentage of state population under twenty-five years and the percentage of the state population over sixty-five years, the state sex ratio (defined as the number of males per 100 females), and the percentage of the population with a bachelor's degree or higher. Per-student constant dollar state appropriations continually and steadily decreased throughout this period. Most of our results on demography, ideology, and educational attainment are driven by non-R1 institutions. The time trends differ fundamentally between the R1 and the non-R1 institutions.

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1. Introduction

"Is college worth it?" Many prospective students and their families grapple with this question, and while doing so, they need to consider a variety of factors, prominently among them affordability. Public colleges and universities, through substantial state appropriations and price/tuition setting, play a major role in keeping higher education affordable and accessible to prospective students belonging to all socioeconomic groups (Cook and Turner 2022; Bound et al. 2019; Bound et al. 2020; Gordon and Hedlund 2022; Kelchen 2024, Koshal and Koshal 2000; Winters 2020). The question of affordability is also relevant to policymakers, such as state legislators, who are faced with tough choices about funding public higher education institutions in their states and how to distribute these funds across various types of institutions in the face of challenging fiscal situations and various other competing use for funds, including funding for K-12 education, law enforcement, and Medicaid programs of their states (e.g., Toutkoushian and Hollis 1998; Humphreys 2000; Okunade 2004; Chakrabarti et al. 2020).

There are, of course, many social, economic, political, and other factors that might influence funding decisions for higher education (McLendon et al. 2009; Billings et al. 2024; Hill and Jones 2017; Toutkoushian and Hollis 1998; Humphreys 2000; Ortega 2020; Okunade 2004). In this paper, we focus exclusively on four factors: (i) The demographic composition of the state population. In our study, we include the percentage of the state population sixty-five years and over, the percentage of the population under twenty-five, and the sex ratio (here male/female) and study the effects of variations of these variables on variations in state funding of higher education institutions. (ii) The distribution of political ideology among state voters. This we measure by the percentage of votes cast for the Libertarian or Republican parties in US House of Representative elections in each state and call it the percentage of conservative voters. (iii) Changes in college education attainment level in states. (iv) Time. Changes in per-student state appropriation over a period of 22 years after controlling for the effects of other variables.

 The steadily aging population and increasing ideological polarization of the US population have lent increasing importance to the study of these issues. Previous studies (Ortega 2020; Chin and Shi 2021; Chin and Shi 2023) have found varying degrees of evidence of a negative relationship between state funding of four-year public institutions under Democrat/liberal state legislators and governors. Democrat politicians (and presumably their voter supporters who elected them) tend to prefer spending more money on other competing uses, including various state welfare programs for people below or near the Federal Poverty level and consequently are less willing to allocate more funds to higher education institutions as there is an overall state government budget constraint (Chin and Shi 2021; Chin and Shi 2023).

We control for a variety of state-level economic and political variables in our analyses. These controls include the institutional-level and time-invariant fixed effects. We also control for various time-varying variables, such as the poverty rate, state per-capita personal income, the unemployment rate, and the state population. We do not make any attempt at causal statements. Instead, our purpose in this study is simply to discover and illustrate patterns in the data.

We created a unique dataset by combining data from four different sources, which covers public institutions in all fifty states over 22 years from 2000 to 2021. We examine per-student state appropriations that public four-year institutions or higher get from their respective states and how these vary across institutions. Public universities designated "Doctoral Universities: Very High Research Activity" by the Carnegie Classification of Institutions of Higher Learning[1], also colloquially known as R1 institutions, differ in allocations of state appropriations from other public four-year institutions. The difference is in the magnitude of per-student state appropriations, the underlying mechanisms for allocations, and the responses to changes in state support (MeLendon et al. 2016; Weers and Ronca 2006; Gándara 2020; Jaquette and Curs 2015). For this reason, we conduct separate analyses for the public "very high research activity" doctoral universities and other four-year public universities. We will use R1 and non-R1 universities/institutions to denote these two categories of institutions.

Our findings include: (i) The constant dollar per-student state appropriations for four-year or higher public institutions decreased over time after controlling for other variables. (ii) The per-student state appropriations for four-year or higher public institutions increase with the percentage of the state population that is sixty-five years and older, the percentage of the state population that is under twenty-five, the percentage of the state population that has at least a bachelor's degree, and the sex ratio, defined as the number of males per 100 females. The state funding decreases with the share of conservative voters in the state. When we do separate analyses for public R1 and non-R1 institutions, the same results hold for non-R1 public institutions, but the state funding of R1 institutions does not vary with these variables. (iii) Per-state state appropriations for R1 universities are larger than for non-R1 four-year institutions during this period, even after controlling for other variables. (iv) Per-student state appropriations declined steadily and continuously during the period of study, even though the decline in the state funding of R1 institutions was not statistically significant after 2015. The smaller variations in the per-student state appropriations for public R1 universities suggest that there is a perception of limited degrees of freedom, lest funding changes impede the effective operation and competitiveness with private R1 institutions.

2. Literature Review

Previous studies have examined many aspects of state appropriations for public education institutions, such as the factors and issues that influence the magnitude and variation across these appropriations, the impact of state appropriations on student outcomes, and equitable access to higher education. Allocation of state appropriations for public higher education institutions is a complicated and nuanced process involving many interests and stakeholders (Gándara 2020; Billings et al. 2024). Toutkoushian and Hollis (1998) find that K-12 education and higher education are competitors in state spending. They also find substantial differences in demand for higher education across regions. State appropriations also depend on business cycles. Humphreys (2000) examines the relationship between per-student state appropriations and business cycles and

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[1] https://carnegieclassifications.acenet.edu/carnegie-classification/classification-methodology/basic-classification/

finds that per-student state appropriations are countercyclical while enrollments are procyclical, which puts an additional burden on higher education institutions during recessions.

Declining state support for higher education has led public colleges and universities to look for alternate sources of revenue or for possibilities to lower costs, such as an increase in online education (Ortagus and Yang 2018), increased enrollment of international students (Bound et al. 2019; Bound et al. 2020), increased enrollment of master's degree students (Jaquette 2019); increased enrollment of out-of-state students (Jaquette and Curs 2015; Bound et al. 2019), and increased student tuition rates (Gordon and Hedlund 2022; Cook and Turner 2022; Bound et al. 2019; Webber 2017; Koshal and Koshal 2000). Toutkoushian and Hillman (2012) find that increased state appropriations and merit-based grants lead to increased postsecondary enrollment rates.

Several studies have found that education expenditures decrease with an increase in the percentage of elderly voters (Cattaneo and Wolter 2009; Fletcher and Kenny 2008; Grob and Wolter 2007; Poterba 1997). Berkman and Plutzer (2004) find that the impact of a larger elderly population depends on whether they are long-time residents in the area or new arrivals with no previous ties to the area. Similarly, other studies have shown that the overall impact of older voters on educational expenditures depends on other factors and is not always certain (Klien et al. 2007; Goerres and Tepe 2010). Bertocchi et al. (2020) find that the passage of state laws that allow preregistration of young voters before they can vote results in increased spending in higher education. Studies have shown that social pension funding and public education funding can be viewed as outcomes in a game with intergenerational transfers between the young and the elderly (e.g., Boldrin and Rustichini 2000; Browning 1973; Browning 1975). Voting patterns and preferences of female voters may differ from those of male voters (e.g., Lott and Kenny 1999; Aidt and Dallal 2008; Kose et al. 2021; Miller 2008). This is why we included the state sex ratio in different states as one of our control variables. To our knowledge, no previous study has examined the impact of the size of the young population, say under age of twenty-five, on per-student funding.

Previous studies have found mixed evidence of the influence of conservative politicians holding state executive offices and controlling state legislatures on education allocations. Some studies have found that Republican-controlled states allocate less money to higher education (Taylor et al. 2023; McLendon et al. 2014; Rizzo 2004). Okunade (2004) finds evidence that Democratic elected officials are more sympathetic to higher education funding. In Archibald and Feldman (2006), democratic control of the legislature is positively correlated with higher education funding. Hill and Jones (2017) find that in states with a Democratic governor, transfers to institutions of higher learning are increasing in minority enrollments. Ortega (2020) uses a regression discontinuity design to study the impact of partisanship on funding for two-year colleges and finds larger state appropriations for two-year educational institutions (associate's degree-granting institutions) and minority-serving institutions when a Democrat wins a close governor election. Chin and Shi (2023) find that, in general, Democratic control of State legislators results in lower per capita spending in K-12 public education, except in some cases during off-cycle election years. In Chin and Shi (2021), state economic conditions, such as the unemployment rate and poverty rate, determine whether Democratic-controlled legislators spend more or less on K-12 education and higher education. Democrats do not appear to see a trade-off between K-12 education and higher education but rather between public education and welfare.

Our paper contributes to existing literature in several ways. Our paper is the only one, to our knowledge, that examines the change in the impact of the degree of political conservatism, levels of college educational attainment, and demographic variables, such as percentages of age groups and sex ratio, on the state appropriations of higher education institutions broken down by R1 and non-R1 institutions. It shows that there are vast differences in funding patterns across R1 and non-R1 institutions. Compared to several previous studies that used the state-level aggregated state higher education appropriation data, our paper takes a different approach by using state appropriations received by individual four-year or higher public colleges and universities and also controls for institution-level fixed effects of individual public colleges and universities. Finally, this paper also reaffirms, using the most recent data from all four-year and higher public colleges and universities in the US, the findings of previous papers and the common perception that the state support of public higher education institutions has declined substantially in the last few decades.

3. Data

The dataset used for this study was constructed by obtaining and merging data from four different sources: the National Center for Education Studies (NCES), the US Bureau of Census, the Bureau of Economic Analysis, and MIT Election Data+Science Lab. All Title IV institutions are obligated to share key institutional information, such as student enrollments and state appropriations, with the US Department of Education, which is then made publicly available at NCES. We obtained state characteristics, such as state populations, state sex ratios, and the percentages of state populations over sixty-five years and the percentages of state populations under twenty-five years of age, from the US Bureau of Census. We include the state sex ratio in a state in our analyses because of existing evidence that women reveal different preferences in the voting booth (e.g., Lott and Kenny 1999; Aidt and Dallal 2008; Kose et al. 2021; Miller 2008). We obtained certain economic variables from the US Bureau of Economic Analysis, such as state aggregate personal incomes. MIT Election Data+Science Lab contains information about the votes of each candidate in the US Congressional elections. We created and defined the percentage of conservative voters cast for Republican and Libertarian candidates in each state and year. Since the US Congressional election takes place every two years in even-numbered years, we took a simple average of two adjacent even-numbered years to impute this variable for odd-numbered years.

We ran various regressions whose specifications are variations of the model specified in Equation (1).

$$State\ Appropriation_{ist} = \alpha + \beta_1 Percent\ Conservative_{st} + \beta_2\ Percent\ Over\ Sixty\text{-}Five_{st} + \beta_3\ Percent\ Under\ Twenty\text{-}Five_{st} + \beta_4\ Sex\ Ratio + \beta_5\ Percent\ with\ Bachelor's\ Degree\ Or\ Higher\ + \gamma X_{st} + \delta_i + \rho_s + \phi_t + \epsilon_{ist,} \qquad (1)$$

where State Appropriation*ist* is the real-per-student state funding received by public higher education institution *i* located in state *s* in year *t*, Percent Conservative is the percentage of state voters who voted for either Republican or Libertarian Candidates in state *s* in year *t*, Percent

Over Sixty-Five$_{st}$ is the percentage of the state population that is sixty-five years or older in state s in year t, Percent Under Twenty-Five$_{st}$ is the percent of the population that is below twenty-five years in state s in year t, Sex Ratio$_{st}$ is the sex ratio, defined as the number of males for every hundred females, in state s in year t, Percent with Bachelor's Degree or Higher$_{st}$ is the percentage of population twenty-five years or older with at least a bachelor's degree in state s in year t, X_{st} is a vector of control variables for state s in year t, δ_i is the institutional fixed effect, ρ_t is the state fixed effect, ϕ_t is the year fixed effect, and ϵ_{ist} is the error term.

Table 1 shows summary statistics of variables used for this study. The average per-student state appropriations in constant 2021 dollars is around $7548. The standard deviation is large relative to the average, signifying a large variation across four-year public institutions. The average per-student state appropriations for R1 institutions is approximately $11,668, while the average for non-R1 four-year public institutions is around $6,936. The standard deviation for R1 institutions is also larger than for non-R1 institutions. Similarly, the average student enrollment at R1 institutions is around 32,160 and is much larger than the average enrollment of around 9,532 at non-R1 four-year institutions. The standard deviation of student enrollment is also larger at R1 institutions compared to non-R1 institutions, signifying a greater variation in student enrollment at R1 institutions. The average percentage of conservative voters in a state and in all years of the study is around 51%, and its standard deviation is 10.6%. The averages of the percentage of the population sixty-five years and older and the percentage of the population under twenty-five years are around 14% and 33%, respectively. The average percentage of state populations having at least a bachelor's degree is approximately 28%. The average state sex ratio, defined as the number of males per 100 females, is around 96, and its standard deviation is approximately 2. The percentage of the state population below the Federal poverty line is around 12%, while the standard deviation is approximately 3%. The percentage of the state population that is unemployed is around 5%, while its standard deviation is around 2. The average state population is approximately 10 million, and its standard deviation is about 9 million. The average per-capita state personal income is around $55,71, while its standard deviation is around $9,393.

<<INSERT TABLE 1 HERE>>

4. Results

In the next two tables, we show the results of our regression specifications. We use the terms per-student state appropriation and "funding" interchangeably. Table 2 shows per-student state appropriations regression specifications for all four-year or higher public institutions. Column (1) shows specification with institution fixed effect, year fixed effect, and (unclustered) robust standard errors. Column (2) shows results from the regression specification with state fixed effects, instead of institution fixed effect, year fixed effect, and robust standard errors. Column (3) shows results from the regression specification with institution fixed effect, year fixed effect, and standard errors that are clustered at the state level. The coefficients in Column (1) and Column (3) will be identical, but the standard errors in Column (3) will be greater, and the level of significance for some variables will be reduced.

In all specifications, the coefficient estimates are of similar magnitudes even though the standard errors are larger, as expected, and consequently, the level of significance is reduced for some variables in the specification with clustered errors. The percentage of the state population with at least a bachelor's degree is not significant at 10% in Column (3).

The coefficient of the percentage of state conservative voters is around -26 and is fairly robust and significant for all specifications. This effect is relatively large. If the conservative vote share were increased from the twenty-fifth percentile, 44.2, to the seventy-fifth percentile, 58.7, per-studentspending would be decreased by $395, which is about 5.2% of mean spending. Similarly, the coefficients of the percentage of the state population that is sixty-five years or older and the coefficient of the percentage of the state population under twenty-five years are large. Increasing the percentage of the population over sixty-five from the twenty-fifth percentile to the seventy-fifth percentile increases the predicted average per-student state appropriation by over $1600. A similar increase in the population under age twenty-five is associated with an increase in per-student funding of about $4300. This is large. The impact of the state population with at least a bachelor's degree is relatively modest. The coefficient estimate implies an increase in funding of about $300 if the percentage of the population with a bachelor's degree is increased from the twenty-fifth percentile to the seventy-fifth percentile. The impact of changing the sex ratio from the twenty-fifth percentile to the seventy-fifth percentile raises funding by about $870.

<<INSERT TABLE 2 HERE>>

Table 3 contains the coefficients of variables of interest for regressions run separately on subsets of the R1 public universities, the first three columns, and the non-R1 four-year public institutions, the last three columns. Columns (1) and (4) show the coefficients of regression specification with institution fixed effect, year fixed effect, robust (unclustered) standard errors. Columns (2) and (5) show results of regressions with state fixed effects, year fixed effects, and robust standard errors, while Columns (3) and (6) show results of regressions with institution fixed effects, year fixed effects, and standard errors clustered at the state level.

Per-student state appropriations for R1 institutions do not vary with any of the variables of interest in our analyses in any statistically significant way. This result suggests that the funding allocated for these institutions is not subject to social, economic or ideological fluctuations; it is relatively rigid or "inelastic". Some of the reasons for this constancy may be that a) these are often the flagship universities that are held to deserve relatively constant funding independent of the whimsies of social and ideological change and b) the amount needed for these public R1 institutions to be able to function properly and compete successfully with private R1 institutions in their state is considered rather fixed.

Per-student state appropriations of non-R1 public institutions vary with the variables of interest, which are very similar to the results in Table 1 for all public institutions. The coefficients of variables of interest are highly significant in Columns (4) and (5), though the level of significance is reduced for the percentage of the state population with at least a bachelor's degree and the state sex ratio in Column (6). It is remarkable the estimated coefficients for the non-R1 institutions are very close to the estimated coefficients for all colleges/universities.

<<INSERT TABLE 3 HERE>>

Figure 1 shows the coefficients of year indicator variables from the baseline regression specification for the years 2001 to 2021 for all public four-year institutions (Panel A) and public non-R1 institutions (Panel B). 2000 is the base year of these indicator variables. The figure provides the point estimate and the 95% confidence interval of the coefficients as well as the level of significance at 10%,5%, and 1%. The figures show that the funding of all public institutions and non-R1 public four-year institutions is reduced fairly steadily over time. We can also see the close correspondence of patterns across the two panels, which suggests that the reduction in funding of non-R1 four-year institutions corresponds to the reduction in funding of all, both R1 and non R1, public institutions. The per-capita state appropriations for all four-year public institutions, as a group, continued to decline steadily and continuously throughout this period, and the difference from the baseline year stayed highly statistically significant. By 2021, on average, the per-student state appropriations have declined by about $5,496 compared to 2000, the baseline year.

<< INSERT FIGURE 1 HERE>>

Figure 2 depicts the point estimates, 95% confidence intervals, and key levels of significance for the coefficients of the year indicator variables from the baseline regression specification for years 2001 to 2021 for R1 public universities. The year 2000 is the base year for these variables. Comparing Figure 2 with Panel B of Figure 1, we can see that initially, state funding for public R1 universities declined more sharply than for public non-R1 institutions. However, in 2016 and subsequently, the difference in state funding for R1 institutions became statistically insignificant to that in the year 2000. For non-R1 public institutions, the constant dollar per-student state appropriations continued to decline during and after 2016.

<< INSERT FIGURE 2 HERE>>

5. Conclusion

This study focuses on changes in constant-dollar per-student state appropriations of public R1 and non-R1 four-year institutions over time and with changes in the demographics, political ideology, and educational attainment within the states between 2000 and 2021. We use data from the fifty states in the US. The changing demographics due to the steadily aging population in the US, increased polarization in political ideology, both in policy prescriptions and rhetoric, and increased uncertainty about the future educational attainment of state populations due to rising costs of attending college have made examining the impact of these issues on educational funding especially pertinent.

We find that state funding for all four-year or higher public institutions increases with the percentage of the state population sixty-five years and over, the percentage of the state population under twenty-five, the sex ratio, and the percentage of the population with at least a bachelor's degree. Per-student state appropriation decreases the percentage of state conservative voters. Within all public four-year or higher institutions, R1 institutions exhibit different results. The funding for R1 institutions is basically independent of these variables. This suggests that the funding needed by R1 institutions is fairly inelastic. This result could also be due to the fact

that R1 institutions constitute a small fraction of all public four-year or higher institutions, and therefore, the sample size is smaller for these regressions compared to those of non-R1 institutions and all four-year or higher public institutions. The funding also has decreased steadily and continuously over time for all four-year or higher public institutions and for non-R1 four-year or higher public institutions compared to the funding in the year 2000. The decrease in funding for R1 institutions was steeper than that of non-R1 institutions for the first several years after 2000, but the difference in funding for R1 institutions ceased to be statistically significantly different from the funding in 2000 after 2015.

Our study can help inform policymakers, college administrators, and other stakeholders to better understand the impact of demographic changes, changes in college education attainment levels, and fluctuations in the political ideology of voters on state funding of public higher education institutions so that they can plan accordingly.

We do not claim any causal inference as we focused on all four-year and higher public institutions in all fifty states over a period of 22 years instead of any one policy change. Future studies with more detailed data and focusing on a particular policy change or other exogenous event can perhaps shed light on the relationship between state funding and political ideology and age composition in a causal inference framework.

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Tables and Figures

Table 1: Summary Statistics

Variables	Mean	Standard Deviation	Twenty-Fifth Percentile	Seventy-fifth Percentile
Per-Student State Appropriation (Constant 2021 Dollars)				
All Four-Year Public Institutions	$7,548.53	$5,060.89	$4,542.32	$9,363.01
R1 Public Universities	$11,668.92	$5,720.79	$7,743.72	$14,401.13
Non-R1 Four-Year Public Institutions	$6,936.73	$4,654.42	$4,341.72	$8,539.20
Student Enrollment				
All Four-Year Public Institutions	12,457.68	11,389.47	4,135.00	16,877.00
R1 Public Universities	32,160.31	11,090.42	24,865.00	39,000.00
Non-R1 Four-Year Public Institutions	9,532.21	8,032.79	3,701.00	12,916.00
Percent Conservative Voters	51.06	10.6	44.02	58.7
Percent Sixty-Five and Older	14.11	2.46	12.46	15.85
Percent Under Twenty-Five	33.44	2.52	31.66	34.96
Percent with Bachelor's Degree or Higher	28.8	5.39	24.9	32.3
Sex Ratio	96.62	2.37	94.85	98.31
Percent Below Federal Poverty Line	12.89	3.13	10.7	15
Percent Unemployed	5.78	2.02	4.4	6.8
State Population (in Millions)	10.55	9.28	4.3	12.79
Real Per-Capita State Personal Income (in Thousands)	55.71	9.39	48.83	60.72

Note: Sex ratio is defined as the number of males for every 100 females. The statistics include all the years from 2000 to 2021.

Table 2: Per-Student State Appropriations Regressions Results for all Public Four-Year Institutions

	(1)	(2)	(3)
Percent of State Conservative Voters	-26.60***	-26.87***	-26.60*
	(9.42)	(9.43)	(14.94)
Percent State Population Sixty-Five or Older	512.28***	508.16***	512.28**
	(136.67)	(136.94)	(211.21)
Percent State Population Under Twenty-Five	588.97***	591.79***	588.97**
	(182.06)	(182.29)	(268.12)
Percent of State Population with Bachelor's Degree or Higher	87.55***	88.61***	87.55
	(31.76)	(31.88)	(57.11)
Sex Ratio	251.07***	254.63***	251.07*
	(88.68)	(89.10)	(128.60)
State Fixed Effects	No	Yes	No
Institutional Fixed Effects	Yes	No	Yes
Year Fixed Effects	Yes	Yes	Yes
Clustered Standard Errors (State Level)	No	No	Yes
Sample Size	13041	13041	13041

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. The dependent variable is per-student constant-dollar state appropriation. Robust standard errors in parentheses except for Column (3). Column (3) shows standard errors clustered on states. The dependent variable is per-student state appropriations. Data is from the years 2000-2001 to 2021-22. The output of control variables and year indicator variables is omitted. Control variables are the percentage of the state population below the federal poverty line, annual state unemployment percentage, total state population, and constant-dollar per-capita state personal income of the state. Sex ratio is defined as the number of males for every 100 females.
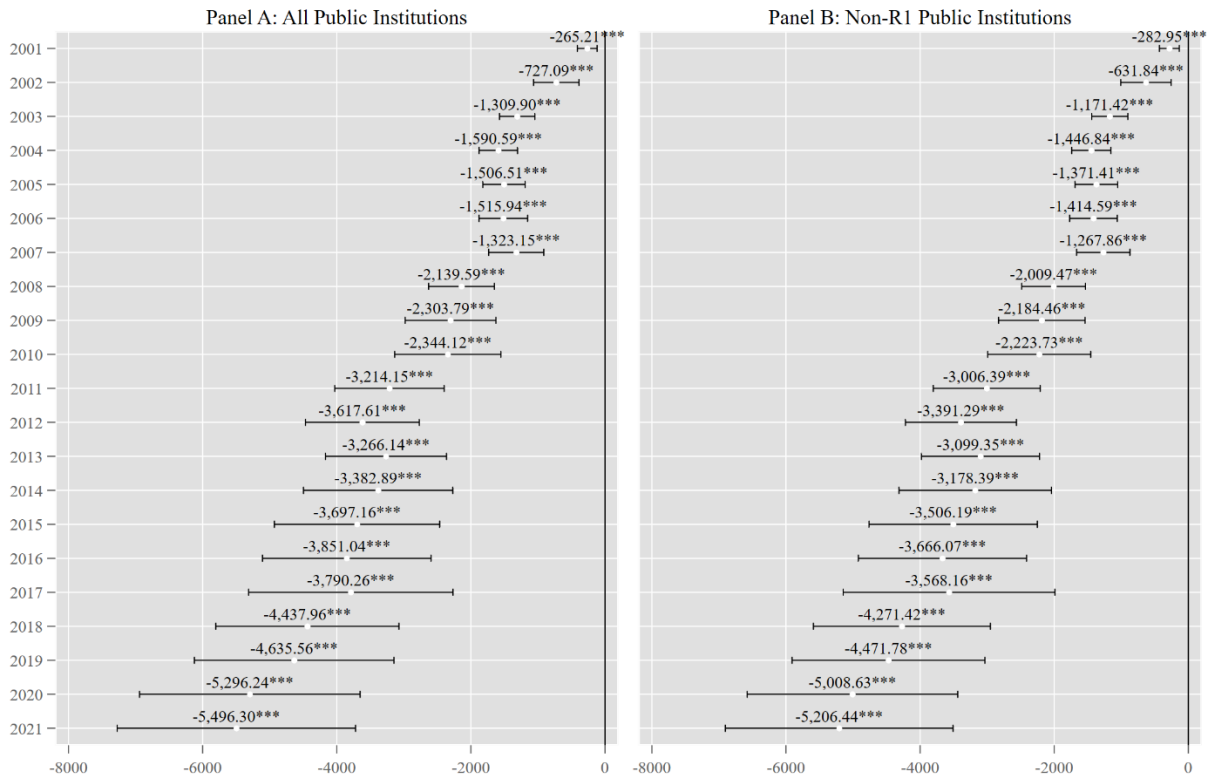
Table 3: Per-Student State Appropriations Regressions Results across Public R1 Universities and Public Non-R1 Institutions

	(1)	(2)	(3)	(4)	(5)	(6)
	Public R1 Universities			**Public Non-R1 Institutions**		
Percent of State Conservative Voters	-36.24	-36.18	-36.24	-27.99***	-28.44***	-27.99**
	(32.11)	(32.47)	(37.74)	(9.70)	(9.71)	(13.91)
Percent State Population Sixty-Five or Older	222.65	222.75	222.65	513.77***	506.56***	513.77***
	(804.26)	(813.41)	(863.77)	(126.62)	(126.89)	(189.59)
Percent State Population Under Twenty-Five	913.30	913.45	913.30	531.34***	535.37***	531.34**
	(665.02)	(672.59)	(776.88)	(178.03)	(178.16)	(233.62)
Percent of State Population with Bachelor's Degree or Higher	-14.37	-14.55	-14.37	93.64***	95.04***	93.64*
	(144.57)	(146.19)	(160.52)	(30.01)	(30.15)	(50.72)
Sex Ratio	262.45	262.08	262.45	188.01**	192.50**	188.01
	(385.78)	(390.12)	(403.04)	(80.50)	(80.93)	(116.03)
State Fixed Effects	No	Yes	No	No	Yes	No
Institutional Fixed Effects	Yes	No	Yes	Yes	No	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Clustered Standard Errors (State Level)	No	No	Yes	No	No	Yes
Sample Size	1686	1686	1686	11355	11355	11355

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. The dependent variable is per-student constant-dollar state appropriation. Robust standard errors in parentheses except for Columns (3) and (6). Columns (3) and (6) show standard errors clustered on states. The dependent variable is per-student state appropriations. Data is from the years 2000-2001 to 2021-22. The output of control variables and year indicator variables is omitted. Control
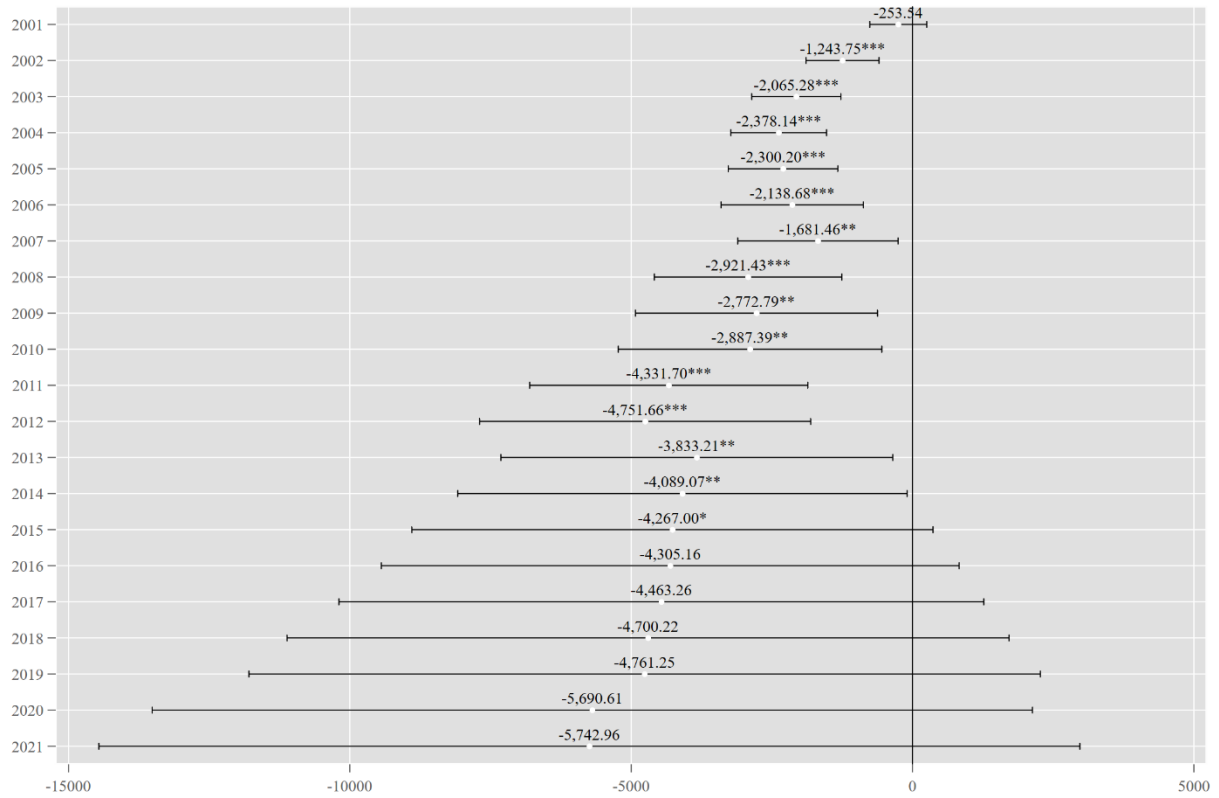
variables are the percentage of the state population below the federal poverty line, annual state unemployment percentage, total state population, and constant-dollar per-capita state personal income of the state. Sex ratio is defined as the number of males for every 100 females.

Figure 1: Coefficient Plot and Confidence Intervals of Year-Interval Indicator Variables for All Public Institutions and Non-R1 Public Institutions

Notes: * p < 0.10, ** p < 0.05, *** p < 0.01. The dependent variable is per-student constant-dollar state appropriation.

Figure 2: Coefficient Plot and Confidence Intervals of Year-Interval Indicator Variables for R1 Public Institutions

Notes: * p < 0.10, ** p < 0.05, *** p < 0.01. The dependent variable is per-student constant-dollar state appropriation.