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Educational Bloat and the Role of Unions

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Why have student outcomes deteriorated so much in the United States? This paper explores the role of unions on educational resource allocation. Using data from the National Center for Education Statistics (NCES) Common Core of Data and the American Community Survey (ACS), we estimate the relationship between unionization and staffing patterns, controlling for a wide array of local demographic and economic characteristics and year fixed effects. We find a robust positive relationship between union density and staff-to-student ratios, as well as a negative effect of right-to-work (RTW) laws on these ratios, driven largely by the expansion of administrative and support roles, rather than teachers. Our results suggest that unions, especially in non-RTW states, may play a critical role in explaining the "educational bloat" that now pervades schools in the United States.

Keywords: Union Density; Staff-to-Student Ratio; Educational Bloat; Public Education; Labor Unions; Administrative Growth; Resource Allocation; Education Economics

JEL: I22: Educational Finance; Financial Aid | J51: Trade Unions; Labor-Management Relations | I28: Government Policy | H75: State and Local Government: Health, Education, and Welfare | J45: Public Sector Labor Markets

I. Introduction

The National Assessment for Educational Progress – commonly known as the "nation's report card" – reveals that only about a quarter of 8th grade public school students in the United States are proficient in math and less than a third are proficient in reading.[1] In fact, the U.S. spends more than just about any other country in the world and the latest international assessment shows that the U.S. ranks 24th out of 52 participating countries in math.[2] Furthermore, public schools spent about $19,999 per student in 2021—roughly 52% higher than average private school tuition.[3] Inflation-adjusted K-12 education spending per student increased by 164% between 1970 and 2021 in U.S. public schools,[4] whereas average teacher salaries have only increased by about 9% nationwide.[5]

Much of these overall increases in public school funding are going towards increases in staffing. Fro instance, the National Center for Education Statistics (NCES) show that administrative staff increased by 95% between 2000 and 2022, whereas student enrollment only increased by about 5%.[6] The number of teachers in the public school system increased by 10% and the number of principals and assistant principals increased by 39%.[7] Scafidi (2017) found that administrators and non-teaching staff increased by more than 7x the growth in student enrollment between 1950 and 2015.

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[1] Math Scores Fell in Nearly Every State, and Reading Dipped on National Exam. The New York Times. Retrieved from https://www.nytimes.com/2022/10/24/us/math-reading-scores-pandemic.html
[2] U.S. math scores drop on major international test. Chalkbeat. Retrieved from https://www.chalkbeat.org/2024/12/04/timss-international-test-result-us-math-scores-decline-post-pandemic/
[3] Average Private School Tuition Cost. Private School Review. Retrieved on January 2, 2025 from https://www.privateschoolreview.com/tuition-stats/private-school-cost-by-state
[4] National Center for Education Statistics. Digest of Education Statistics. Table 236.55. Total and current expenditures per pupil in public elementary and secondary schools: Selected school years, 1919-20 through 2020-21. Retrieved from https://nces.ed.gov/programs/digest/d23/tables/dt23_236.55.asp
[5] National Center for Education Statistics. Digest of Education Statistics. Table 211.60. Estimated average annual salary of teachers in public elementary and secondary schools, by state: Selected school years, 1969-70 through 2021-22. Retrieved from https://nces.ed.gov/programs/digest/d22/tables/dt22_211.60.asp
[6] National Center for Education Statistics. Digest of Education Statistics. Table 203.10. Enrollment in public elementary and secondary schools, by level and grade: Selected years, fall 1980 through fall 2031. Retrieved from https://nces.ed.gov/programs/digest/d23/tables/dt23_203.10.asp
[7] National Center for Education Statistics. Digest of Education Statistics. Table 213.10. Staff employed in public elementary and secondary school systems, by type of assignment: Selected school years, 1949-50 through fall 2022. Retrieved from https://nces.ed.gov/programs/digest/d23/tables/dt23_213.10.asp

In Chicago, for example, staffing increased by about 20% between 2019 and 2024, whereas student enrollment dropped by 10%.[8] Chicago Public Schools spends nearly $30,000 per student per year and Illinois Department of Education data show that 33 public schools in Chicago had zero percent math proficiency in 2022.[9] Sadly, these outcomes have become commonplace in the U.S. What explains these extremely poor outcomes, as well as their persistence over time?

The primary contribution of this paper is to quantify the potential role of unions behind the inertia within public schools, which hold monopoly power in the U.S. education system. Their customers, students and their families, are assigned to them based on residence and are funded by taxpayers. If families are unhappy with the assigned public school, they have little recourse in the current system. If the family can afford to do so, they can pay out of pocket to send their child to a private school, effectively paying twice. They can also move to another residence that is assigned to a better public school, if they can afford to do so. They could voice their concerns to the school board, but the school board might not be able to turn things around in time for their child to benefit. If the school board refuses to listen, parents could organize to attempt to vote out certain members, but there is no guarantee the new school board will make the necessary changes, either.

The lack of power by parents to vote with their feet gives the school boards little incentive to listen to them. This power imbalance between families and the school system means the district can waste taxpayer dollars without meaningful accountability. School districts could therefore spend additional resources on job creation even if it does not translate to academic benefits for students.

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[8] Chicago Public Schools staff up 20%, enrollment down 10.5%. Illinois Policy Institute. Retrieved from https://www.illinoispolicy.org/chicago-public-schools-staff-up-20-enrollment-down-10-5/

[9] Fifty-five schools in Chicago say students can't do math or read at grade level. Retrieved from https://www.audacy.com/wbbm780/news/local/55-schools-chicago-students-cant-math-or-read-proficiently

That "job creation" is desired by special interests, rather than consumer demand, that organize and engage in school board elections with campaign contributions and votes.

These labor unions have an incentive to lobby for additional funding to go towards increases in staffing because it means more dues-paying members and a larger voting bloc, giving them more power in contract negotiations and at the ballot box. We expect that school districts with stronger teachers' unions are more likely to experience larger increases in staffing bloat than school districts with less influential teachers' unions. Using data from the Common Core of Data (CCD) and the NCES between 2011 to 2024, together with measures of union density from the Current Population Survey (CPS) and right-to-work (RTW) status laws, we validate this theory and quantify the effects of unionization on educational bloat: school districts in states with stronger teachers' unions are more likely to experience educational bloat than those in states with less influential unions. Our identification comes from comparisons of school districts in observationally equivalent zipcodes as a function of state union density and RTW status over time, controlling for aggregate changes.

II. Background

The relationship between unionization, public education resource allocation, and administrative expansion builds on a large literature in public choice and education policy. These theories tend to explain how unionized groups, particularly public-sector unions like teachers' unions, are positioned to leverage their concentrated membership to advocate for policies that benefit their members. This often occurs at the expense of taxpayers and other stakeholders, whose costs are dispersed and whose ability to organize is comparatively weaker (Olson, 1965; Moe, 2006). In the context of K-12 education, teachers' unions have successfully influenced decisions about funding, staffing, and operations, shaping the landscape of public schooling in ways that go beyond classroom instruction.

For example, public school districts in areas with stronger teachers' unions were significantly less likely to reopen for in-person instruction during the lockdowns, even when private schools and less-unionized districts resumed operations (DeAngelis & Makridis, 2021; Hartney & Finger, 2021). In addition, areas with greater unionization were also more likely to receive greater federal funding (DeAngelis and Makridis, 2022). This suggests that union priorities, such as securing additional funding, staffing, or bargaining leverage, outweighed reopening incentives. The pandemic revealed how public schools, despite often receiving higher per-pupil funding than private schools (Van Kipnis, 2020), struggled to meet operational demands. This may have been less about resource scarcity and more about competing incentives and rent-seeking (Tullock, 1967; Krueger, 1974).

The role of teachers' unions in shaping resource allocation is particularly important for thinking about the phenomenon of "educational bloat," or the disproportionate growth of administrative staff relative to teaching staff. While unions ostensibly advocate for classroom-related priorities, their influence often extends to administrative roles, potentially driven by demands for compliance, oversight, or additional support staff to alleviate teacher workloads. We do not yet have evidence on the impact of union density on the proclivity to hire more administrative staff over teachers, who are more directly linked to the creation of value-added in educational services, and we help fill that gap.

Our paper builds on the theoretical frameworks of rent-seeking and special interest group dynamics to examine the impact of union density on administrative expansion in public education. By leveraging data on unionization, staffing patterns, and demographic characteristics, this analysis contributes to the growing literature on how unions influence public-sector resource allocation. It aims to disentangle whether union-driven administrative growth reflects genuine educational needs or the concentrated benefits of union advocacy at the expense of other stakeholders.

III. Data and Measurement

We draw on the Current Population Survey (CPS) monthly files from 2006 to 2024 to measure both overall union density (i.e., across all workers) and density specifically among teachers. We drop respondents who are unemployed to fix the sample on full-time workers. While union density specifically among teachers is theoretically preferable, the sample size becomes particularly thin in some states, so the overall union density provides a useful benchmark. We also obtain zipcode-level demographic characteristics, such as the age and education distribution, and median household income and population density from the 2015-2019 American Community Survey (ACS).

To measure school outcomes, we draw on the Common Core of Data (CCD), maintained by the National Center for Education Statistics (NCES). The CCD is a comprehensive and annually updated database containing information on all public elementary and secondary schools and school districts in the United States. It includes extensive data on enrollment, staffing, finances, and outcomes, enabling detailed analyses of educational trends and disparities. The CCD is divided into several components (e.g., membership and staff), which provides staff and student characteristics, and the Local Education Agency (LEA) Universe, which captures district-level metrics. Additionally, fiscal data, like revenues and expenditures, offer insights into financial management within schools.[10]

Table 1 provides descriptive statistics for the key variables analyzed in this study, with data pooled across the period 2006–2023 and divided into three distinct timeframes: 2006–2016, 2017–2019, and 2020–2023. The average union density among all workers is 14%, while the teacher-specific union density is lower at 11%, reflecting differences in unionization rates between education and other sectors. On average, districts employ 383 total staff members, with teachers representing the largest share at 216 employees, followed by administrators at 167 employees. The average staff-to-student ratio is 0.22, but this figure varies widely (standard deviation = 2.87), indicating significant

[10] A practical consideration is that the reporting method by the NCES changes in 2016-17, so we do our best to align the staff counts to match the pre-2017 reporting.

heterogeneity in staffing levels across districts. Between 2006–2016 and 2017–2019, the average total staff per district increased from 354 to 446, before declining to 398 in 2020–2023. Similarly, teacher staffing declined from 226 to 212 in the first two periods but fell again to 198 in the most recent period. These declines may be tied to the disruptions caused by the COVID-19 pandemic, including remote learning transitions and increased homeschooling (Makridis et al., 2025). Most of the increase in the staff-to-student ratio comes from administrative, rather than instructional, support.

Demographic characteristics across zip codes are held constant over the sample based on the 2015-19 ACS pull. Approximately 50% of residents in these zip codes are male, and the shares of residents aged 25–34 (12%), 35–64 (39%), and married individuals (50%) remain constant. Similarly, racial composition shows that 81% of the population is White and 8% is Black, with minimal changes over the time periods. Educational attainment reveals that 57% of residents have some college education, while 26% and 13% hold college and postgraduate degrees, respectively. Median household income averages $61,421 across the full sample, with only modest variation over time.

Figure 1 depicts the average staff-to-student ratio from 2006 to 2024, comparing school districts in right-to-work (RTW) states (solid blue line) and non-RTW states (dashed red line). Districts in non-RTW states consistently exhibit higher staff-to-student ratios throughout the observed period, with the gap widening significantly after 2015. The non-RTW ratio displays substantial volatility, including a sharp increase beginning in 2020 and peaking in 2022, potentially reflecting policy responses or shifts in resource allocation during the COVID-19 pandemic. In contrast, RTW states demonstrate a relatively stable and lower staff-to-student ratio, with minimal variation over time. This figure underscores the influence of labor policies on educational staffing patterns, revealing both the elevated levels and greater fluctuations in staffing within non-RTW states.

Nevertheless, we acknowledge fundamental challenges with the NCES data. In particular, we found a discrete change in reporting starting in 2016-17. While we have matched the sub-categories of staff to ensure conceptual similarity, there are still puzzling changes in staffing that appear to be a function of the underlying raw data. Moreover, in reviewing the notes associated with the data, we found that many school districts have imputed staffing counts. We also find that roughly 10% of the school districts do not report data, although this share is fairly constant over time. We invite further guidance and improvements to the data, but we have taken a step towards harmonizing it.

IV. Empirical Strategy

To estimate the effects of unionization on educational bloat, we consider regressions of the form:

$$e_{ist} = \gamma u_{st} + f(\theta; X_z) + \lambda_t + \epsilon_{ist}$$

where e_{ist} denotes the outcome of interest (e.g., staff-to-student ratio) for a school district i in state s and year t, u_{st} denotes the union density in state s and year t, $f(\theta, X_z)$ denotes a semi-parametric function of zipcode-level demographic factors and controls, and λ denotes fixed effects on year. We cluster standard errors at the state-level to allow autocorrelation across districts in the same state.

Our primary identification problem is that of omitted variables bias. States that vary in union density will inevitably vary in a wide array of other ways. As a result, we match zipcode-level demographics based on the zipcode of the school district, controlling for age, race, gender, education, marital status, median household income, and population density. By focusing on the zipcode, where the demographic factors vary little from one year to another, we effectively control for local school district characteristics. Our inclusion of year fixed effects helps mitigate concerns about aggregate changes in union density that are correlated over time. While we recognize that

these controls are imperfect, we sequentially saturate the model to show that our results become stronger, not weaker, thereby providing some comfort that our main result is legitimate.

V. Main Results

Table 2 presents the main results, relating union density—measured in aggregate for a state-year (columns 1–5) and among teachers (columns 6–10)—to staff-to-student ratios, sequentially saturating the model with controls for zip code demographics and year fixed effects. In column 1, a 1 percentage point (pp) increase in total union density is associated with a 0.431 increase in the staff-to-student ratio. This association reflects baseline relationships without additional controls. Column 2 includes controls for zip code demographics, reducing the coefficient to 0.370 while improving statistical significance. Controlling for log median household income in column 3 slightly increases the coefficient to 0.394, while column 4 adds log population density, raising the coefficient to 0.424. The inclusion of year fixed effects in column 5 further strengthens the relationship, yielding a coefficient of 0.531, significant at the 1% level. These results indicate that union density is robustly associated with higher staff-to-student ratios across a range of specifications.

Do these coefficients simply reflect other unobserved correlates of overall high unionization? For example, some states may have greater overall union density due to, for instance, a larger public sector or manufacturing base. Columns 6–10 replicate this analysis using teacher union density. The coefficients are consistently larger in magnitude, suggesting teacher-specific unions play a substantial role in driving staffing ratios. In column 6, a 1pp increase in teacher union density is associated with a 1.044 increase in the staff-to-student ratio. Adding demographic controls in column 7 raises the coefficient to 0.950, while controlling for income and population density in columns 8 and 9 yields coefficients of 1.006 and 1.050, respectively. In the fully controlled model (column 10), the

coefficient increases further to 1.184, significant at the 1% level. These findings underscore the strong influence of teacher unionization on staffing patterns. [11]

The demographic controls also reveal some patterns. Higher percentages of White residents are positively correlated with staff-to-student ratios, likely reflecting resource-rich districts with greater investments in staffing. Conversely, zip codes with higher shares of residents aged 25–34 are associated with lower ratios, possibly due to competing resource demands in younger, family-starting populations. Educational attainment also plays a significant role; areas with higher shares of college-educated residents exhibit positive correlations with staffing ratios, suggesting that educational resources and demand for staff increase with higher local education levels.

Table 3 focuses on how union density influences the allocation of administrative-specific resources within a school. Columns 1–5 analyze total union density, while columns 6–10 explore teacher union density as before. In column 1, a 1 percentage point (pp) increase in total union density is associated with an increase of 0.099 administrators per students. Adding zip code demographic controls in column 2 raises the coefficient to 0.115, and including income and population density in columns 3 and 4 increases the coefficient in magnitude and precision to 0.132 ($p<0.1$) and 0.150 ($p<0.05$), respectively. The fully controlled model in column 5 adds year fixed effects, resulting in a coefficient of 0.167 ($p<0.01$). These results suggest that union density is strongly linked to administrative staffing—even more than total staffing. Columns 6–10 examine the impact of teacher union density, yielding smaller in magnitude, but significant, effects.

Table 4 examines the effect of union density on the annual growth of staff-to-student ratios, highlighting year-to-year changes in staffing dynamics. Columns 1–4 focus on total union density,

[11] Furthermore, we have also exploited within-district variation, tracing out the evolution of staff-to-student ratios in response to changes in state unionization rates among teachers. We find a coefficient of 1.40 (p-value = 0.07) on teacher unionization rates, conditional on year and district fixed effects.

while columns 5–8 evaluate teacher-specific union density. In column 1, a 1 percentage point (pp) increase in total union density is associated with a 0.066 percentage point rise in staffing growth, statistically significant at the 5% level. Adding demographic controls in column 2 slightly reduces the coefficient to 0.059 ($p<0.1$). Including income and population density in columns 3 and 4 results in coefficients of 0.065 and 0.064, respectively, both statistically significant at the 5% level. These results suggest a positive relationship between union density and staffing growth, but the coefficients are modest in magnitude, reflecting the incremental nature of year-to-year changes.

Columns 5–8 shift the focus to teacher union density, revealing stronger associations. In column 5, a 1pp increase in teacher union density corresponds to a 0.105 percentage point rise in staffing growth ($p<0.05$). Adding demographic controls in column 6 reduces the coefficient slightly to 0.098, while further controlling for income and population density in columns 7 and 8 yields coefficients of 0.108 and 0.107, respectively, both significant at the 5% level. These findings indicate that teacher union density is a key driver of staffing growth, potentially due to the specific bargaining power of teacher unions in securing additional resources. Among demographic controls, several noteworthy patterns emerge. Districts with higher shares of residents aged 35–64 exhibit faster staffing growth, but areas with higher percentages of White residents are negatively correlated with staffing growth. Further, districts with higher median household incomes exhibit slower staffing growth.

Table 5 uses right-to-work (RTW) laws as an alternative measure to evaluate the impact of weakened union influence on educational staffing patterns. Columns 1–5 examine total staff-to-student ratios, while columns 6–10 focus on administrator-to-student ratios. In column 1, RTW states are associated with a significantly lower staff-to-student ratio, with a coefficient of -0.062 ($p<0.01$). Adding demographic controls in column 2 slightly reduces the coefficient to -0.054, while additional controls for income and population density in columns 3 and 4 yield coefficients of -0.056

and -0.059, respectively. The fully controlled model in column 5, which includes year fixed effects, shows a coefficient of -0.063 ($p<0.01$), suggesting that RTW laws reduce overall staffing levels relative to non-RTW states. Columns 6–10 examine administrator-to-student ratios, revealing similar patterns. In column 6, RTW laws are associated with a reduction of 0.033 in the administrator-to-student ratio ($p<0.01$). Demographic controls in column 7 reduce the coefficient slightly to -0.028, while additional controls for income and population density in columns 8 and 9 yield coefficients of -0.030 and -0.031, respectively. In the fully controlled model in column 10, we find a coefficient of -0.035 ($p<0.01$), showing the consistent negative relationship between RTW laws and staffing.

Does RTW status play a moderating role? Makridis (2020) shows that RTW laws have a positive effect on worker well-being, particularly among union workers, and argues that the mechanism stems from the increase in competition that RTW laws provide. By giving workers an option of choosing not to join the union, the union is incentivized to provide higher quality services. We interact RTW status with union density and find a statistically insignificant null effect when we measure union density using the average in the state-year, and a statistically significant negative effect when we measure it using the teacher-specific union density. In other words, RTW laws may help discipline unions such that they do not contribute to, or potentially help reduce, educational bloat.

VI. Conclusion

This paper provides empirical evidence that unions play a significant role in shaping the staffing dynamics of public schools in the United States. Our analysis shows that union density is strongly associated with higher staff-to-student ratios and a disproportionate allocation of resources toward administrative staff. Moreover, we document how union influence drives year-to-year staffing growth and explore the mitigating effect of right-to-work (RTW) laws on these patterns. We exploit variation across states, controlling semi-parametrically for demographic differences, including

income and population density, across zipcodes that districts are part of. Increases in state-level union density are robustly linked with "educational bloat" – that is, administrative positions expanding at a faster rate than instructional roles.

This growth in administrative staffing raises questions about whether such resource allocation effectively translates into improved student outcomes. For instance, despite significant increases in public school spending and staffing over the past several decades, academic performance remains stagnant with the United States underperforming in international assessments and many districts struggling to meet even basic proficiency standards. One possible interpretation of these results is that unions exert considerable influence over staffing decisions, which may reflect priorities that are not fully aligned with the interests of students and families. While unions advocate for increased educational resources, our findings suggest that these resources often support administrative expansion, rather than classroom instruction. This misalignment may be exacerbated by the limited accountability mechanisms in the current public education system where families face high transaction costs to opt out of poorly performing schools. Future research should look at how these staffing decisions affect student outcomes, such as test scores and post-graduation earnings.

Our study also highlights the potential of RTW laws to curb staffing growth by weakening union influence. Districts in RTW states exhibit leaner staffing structures, with fewer administrators per student and less overall educational bloat. While RTW laws may not be a panacea, they offer a policy lever to rebalance resource allocation and encourage more efficient use of taxpayer funds. Our paper shows the importance of rethinking how resources are allocated within public schools. Policymakers must consider the unintended consequences of union influence on staffing patterns and explore reforms that prioritize instructional quality over bureaucratic growth. Future research should study

how these dynamics impact student outcomes directly, providing more guidance on how to align public education spending with the needs of students and their families.

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Table 1: Summary Statistics in the Cross-section and Time

	Pooled		2006-2016		2017-2019		2020-2023	
	(1)		(2)		(3)		(4)	
	mean	sd	mean	sd	mean	sd	mean	sd
Union, Total %	0.14	0.06	0.14	0.06	0.13	0.05	0.13	0.05
Union, Teacher %	0.11	0.04	0.11	0.04	0.10	0.04	0.10	0.04
Total Staff	383	1301	354	1228	446	1457	398	1321
Teachers	216	746	226	792	212	708	198	665
Administrators	167	604	128	492	234	768	200	670
Student Count	2776	10356	2925	10916	2737	10309	2520	9284
Staff-to-Student	0.22	2.87	0.19	2.98	0.22	0.64	0.25	3.19
Missing Districts, %	0.05	0.18	0.05	0.21	0.05	0.11	0.05	0.15
Zip Male, %	0.50	0.04	0.50	0.04	0.50	0.04	0.50	0.04
Zip Age 25-34, %	0.12	0.04	0.12	0.04	0.12	0.05	0.13	0.05
Zip Age 35-64, %	0.39	0.05	0.39	0.05	0.39	0.05	0.39	0.05
Zip White, %	0.81	0.21	0.82	0.20	0.80	0.21	0.79	0.22
Zip Black, %	0.08	0.16	0.08	0.15	0.09	0.16	0.09	0.17
Zip Married, %	0.50	0.11	0.51	0.11	0.50	0.11	0.49	0.12
Zip Some College, %	0.57	0.14	0.57	0.14	0.57	0.14	0.57	0.14
Zip College, %	0.26	0.15	0.26	0.15	0.26	0.15	0.27	0.15
Zip Over College, %	0.13	0.12	0.13	0.12	0.14	0.12	0.14	0.12
Median HH Income	61421	25107	61449	24990	61309	25169	61427	25283
Population Density	1979.8	7245.1	1656.1	6432.8	2184.3	7861.8	2489.9	8263.1
Observations	314204		174536		50106		71718	

Notes.—Sources: Monthly Current Population Survey (CPS) and National Center for Education Statistics (NCES) Common Core of Data (CCD), 2006-2024; American Community Survey (ACS) 2015-2019 from the Census Bureau. The table reports the means and standard deviations of union density (measured as overall workers and teachers in a union for a given state-year), school staff and student counts, and zipcode demographics (held constant to 2015-2019 shares).

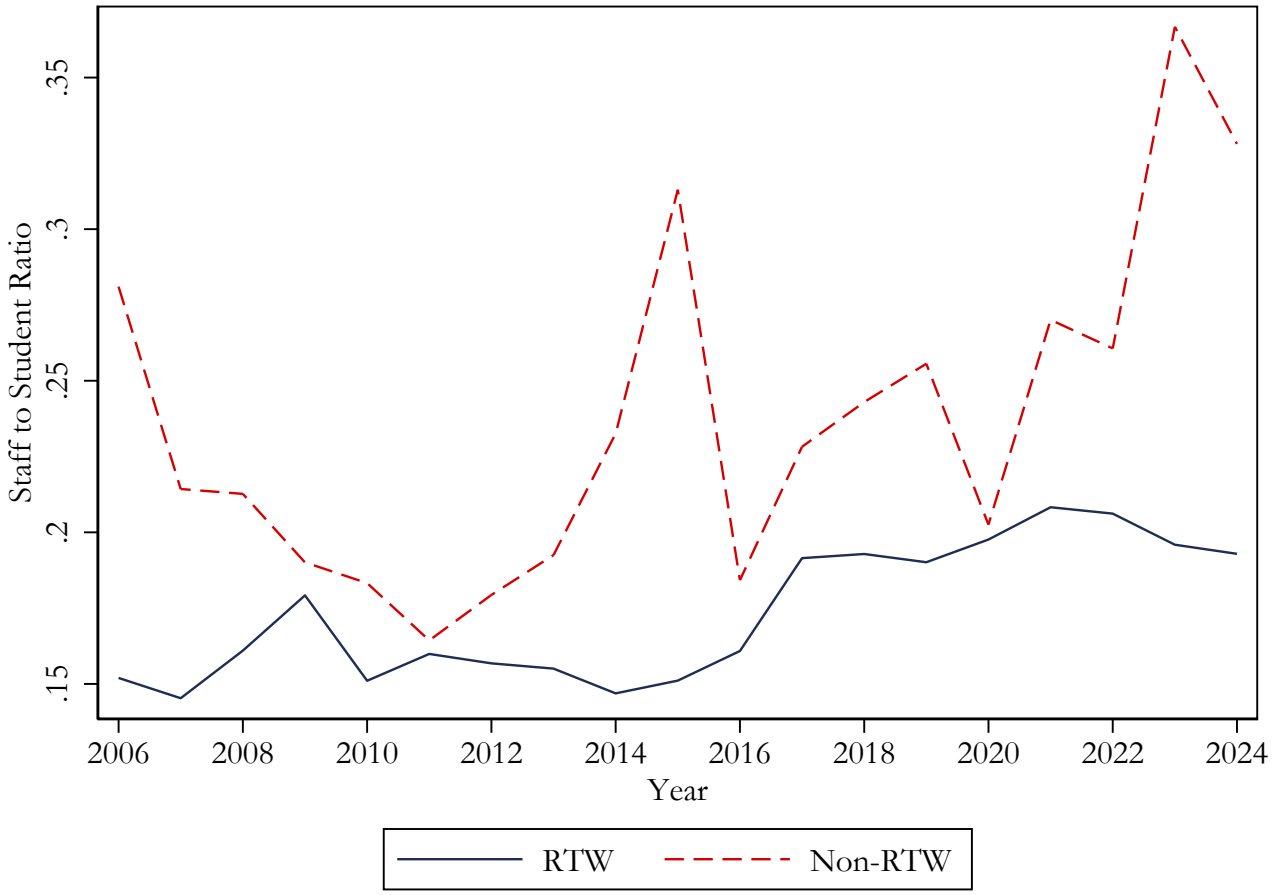

Figure 1: Staff-to-student Ratio, by Right-to-Work Status

Notes.–Sources: Monthly Current Population Survey (CPS) and National Center for Education Statistics (NCES) Common Core of Data (CCD), 2006-2024. The figure plots the average (unweighted) staff-to-student ratio over year based on averages across districts in the same state for those in states with right-to-work (RTW) laws and those without.

Table 2: Baseline Effects of Union Density on Staff to Student Ratio

Dep. var. =	Staff to Student Ratio									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Union, Total %	.431**	.370**	.394**	.424**	.531***					
	[.188]	[.169]	[.185]	[.184]	[.174]					
Union, Teacher %						1.044***	.950***	1.006***	1.050***	1.184***
						[.323]	[.287]	[.297]	[.280]	[.292]
Zip Male, %		.142	.169	.080	.080		.154	.187	.084	.084
		[.170]	[.189]	[.173]	[.173]		[.170]	[.190]	[.170]	[.171]
Zip Age 25-34, %		-.189	-.170	-.092	-.092		-.168	-.133	-.044	-.045
		[.140]	[.184]	[.166]	[.166]		[.143]	[.185]	[.159]	[.161]
Zip Age 35-64, %		.037	.079	.092	.073		-.003	.044	.061	.046
		[.109]	[.147]	[.142]	[.145]		[.100]	[.144]	[.139]	[.143]
Zip White, %		.125**	.120**	.113*	.126**		.127*	.120*	.110*	.122*
		[.061]	[.059]	[.057]	[.062]		[.065]	[.062]	[.059]	[.064]
Zip Black, %		.033	.026	.034	.050		.055	.045	.055	.068
		[.080]	[.081]	[.084]	[.087]		[.081]	[.081]	[.082]	[.086]
Zip Married, %		-.099	-.063	-.121	-.110		-.078	-.019	-.087	-.078
		[.116]	[.129]	[.102]	[.100]		[.108]	[.112]	[.093]	[.092]
Zip Some College, %		-.030	-.032	-.057	-.069		-.037	-.035	-.064	-.075
		[.162]	[.170]	[.180]	[.181]		[.153]	[.160]	[.169]	[.169]
Zip College, %		.237	.284	.324*	.336*		.207	.270	.315*	.320*
		[.151]	[.178]	[.180]	[.182]		[.142]	[.172]	[.172]	[.173]
Zip Over College, %		-.092	-.094	-.105	-.109		-.068	-.070	-.081	-.078
		[.144]	[.161]	[.158]	[.156]		[.142]	[.158]	[.155]	[.155]
Zip log(Median HH Income)			-.029	-.014	-.016			-.043	-.024	-.025
			[.042]	[.046]	[.045]			[.040]	[.045]	[.045]
Zip log(Population Density)				-.006	-.008				-.007	-.009*
				[.006]	[.006]				[.005]	[.005]
R-squared	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Sample Size	292286	292071	290582	290582	290582	292286	292071	290582	290582	290582
Demographics	No	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
Year FE	No	No	No	No	Yes	No	No	No	No	No

Notes.—Sources: Monthly Current Population Survey (CPS) and National Center for Education Statistics (NCES) Common Core of Data (CCD), 2006-2024; American Community Survey (ACS) 2015-2019 from the Census Bureau. The table reports the coefficients associated with regressions of the total staff to student ratio on the share of union workers (columns 1-5) and the share of teachers in unions (columns 6-10) on a vector of zipcode characteristics, including log median household income and population density. Standard errors are clustered at the state-level.

Table 3: Isolating the Role of School Administrators and Union Density

Dep. var. =	Staff to Student Ratio									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Union, Total %	.198*	.163	.178	.182	.281**					
	[.114]	[.107]	[.119]	[.118]	[.114]					
Union, Teacher %						.518***	.470***	.504***	.513***	.631***
						[.182]	[.164]	[.173]	[.163]	[.169]
Zip Male, %		.052	.065	.053	.052		.059	.076	.055	.054
		[.103]	[.115]	[.103]	[.103]		[.104]	[.117]	[.101]	[.102]
Zip Age 25-34, %		-.054	-.041	-.030	-.030		-.043	-.021	-.003	-.005
		[.083]	[.109]	[.096]	[.097]		[.085]	[.110]	[.093]	[.094]
Zip Age 35-64, %		.034	.063	.065	.047		.011	.042	.046	.032
		[.065]	[.086]	[.083]	[.084]		[.060]	[.085]	[.081]	[.083]
Zip White, %		.064**	.061**	.060**	.071**		.066**	.061**	.059**	.069**
		[.027]	[.026]	[.026]	[.030]		[.029]	[.026]	[.027]	[.030]
Zip Black, %		.004	-.002	-.001	.013		.017	.010	.012	.024
		[.041]	[.042]	[.045]	[.047]		[.040]	[.041]	[.043]	[.045]
Zip Married, %		-.085	-.063	-.071	-.061		-.073	-.037	-.051	-.043
		[.070]	[.081]	[.066]	[.065]		[.066]	[.071]	[.060]	[.060]
Zip Some College, %		.022	.022	.018	.007		.018	.019	.013	.003
		[.091]	[.095]	[.102]	[.102]		[.086]	[.090]	[.097]	[.096]
Zip College, %		.073	.102	.108	.119		.058	.097	.106	.111
		[.078]	[.098]	[.099]	[.101]		[.076]	[.095]	[.095]	[.096]
Zip Over College, %		-.032	-.033	-.035	-.038		-.021	-.022	-.024	-.021
		[.082]	[.093]	[.091]	[.090]		[.080]	[.090]	[.089]	[.089]
Zip log(Median HH Income)			-.020	-.017	-.019			-.027	-.024	-.024
			[.024]	[.027]	[.027]			[.023]	[.026]	[.026]
Zip log(Population Density)				-.001	-.002				-.002	-.003
				[.003]	[.003]				[.003]	[.003]
R-squared	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Sample Size	292286	292071	290582	290582	290582	292286	292071	290582	290582	290582
Demographics	No	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
Year FE	No	No	No	No	Yes	No	No	No	No	No

Notes.—Sources: Monthly Current Population Survey (CPS) and National Center for Education Statistics (NCES) Common Core of Data (CCD), 2006-2024; American Community Survey (ACS) 2015-2019 from the Census Bureau. The table reports the coefficients associated with regressions of the administrator staff to student ratio on the share of union workers (columns 1-5) and the share of teachers in unions (columns 6-10) on a vector of zipcode characteristics, including log median household income and population density. Administrators are those flagged by one of the following categories in the CCD: LEA Administrative Support Staff, LEA Administrators, LEA Staff, School administrators. Standard errors are clustered at the state-level.

Table 4: Baseline Effects of Union Density on Growth in Staff-to-Student Ratios

Dep. var. =	Year-to-Year Growth in Staff-to-Student Ratio							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Union, Total %	.066**	.059*	.065**	.064**				
	[.029]	[.030]	[.029]	[.031]				
Union, Teacher %					.105**	.098*	.108**	.107**
					[.049]	[.051]	[.052]	[.053]
Zip Male, %		.014	.017	.018		.014	.017	.019
		[.019]	[.021]	[.016]		[.019]	[.021]	[.015]
Zip Age 25-34, %		-.019	-.010	-.012		-.018	-.009	-.010
		[.014]	[.014]	[.013]		[.014]	[.014]	[.012]
Zip Age 35-64, %		.004	.021**	.021**		.004	.021**	.021**
		[.010]	[.009]	[.008]		[.011]	[.009]	[.009]
Zip White, %		-.008	-.011	-.011		-.009	-.011*	-.011*
		[.006]	[.007]	[.007]		[.005]	[.006]	[.007]
Zip Black, %		.005	.002	.001		.006	.002	.002
		[.007]	[.007]	[.007]		[.007]	[.007]	[.007]
Zip Married, %		-.020***	-.007	-.006		-.019***	-.006	-.005
		[.007]	[.012]	[.010]		[.007]	[.012]	[.009]
Zip Some College, %		.015	.019	.019*		.015	.019*	.019*
		[.011]	[.012]	[.011]		[.010]	[.011]	[.010]
Zip College, %		.012	.024	.023		.009	.021	.020
		[.017]	[.020]	[.022]		[.017]	[.020]	[.021]
Zip Over College, %		-.020	-.021	-.021		-.016	-.017	-.017
		[.015]	[.016]	[.016]		[.015]	[.015]	[.016]
Zip log(Median HH Income)			-.010**	-.010**			-.010**	-.011***
			[.005]	[.004]			[.005]	[.004]
Zip log(Population Density)				.000				.000
				[.001]				[.001]
R-squared	.00	.00	.00	.00	.00	.00	.00	.00
Sample Size	253721	253554	252236	252236	253721	253554	252236	252236
Demographics	No	Yes	Yes	Yes	No	Yes	Yes	Yes

Notes.—Sources: Monthly Current Population Survey (CPS) and National Center for Education Statistics (NCES) Common Core of Data (CCD), 2006-2024; American Community Survey (ACS) 2015-2019 from the Census Bureau. The table reports the coefficients associated with regressions of the year-to-year growth in total staff on the share of union workers (columns 1-4) and the share of teachers in unions (columns 5-8) on a vector of zipcode characteristics, including log median household income and population density. The growth rate is winsorized at the top and bottom percentile. Standard errors are clustered at the state-level.

Table 5: Robustness Effects on Educational Bloat Using Right-to-Work Status

Dep. var. =	Staff/Students					Administrators/Students				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Right-to-Work State	-.062***	-.054**	-.056***	-.059***	-.063***	-.033***	-.028**	-.030***	-.031***	-.035***
	[.023]	[.021]	[.020]	[.020]	[.020]	[.012]	[.011]	[.011]	[.011]	[.011]
Zip Male, %		.157	.184	.092	.093		.062	.076	.059	.059
		[.169]	[.189]	[.169]	[.169]		[.104]	[.117]	[.101]	[.101]
Zip Age 25-34, %		-.196	-.179	-.099	-.110		-.056	-.043	-.028	-.038
		[.140]	[.179]	[.155]	[.159]		[.083]	[.106]	[.089]	[.091]
Zip Age 35-64, %		.012	.046	.059	.049		.015	.040	.042	.032
		[.101]	[.144]	[.139]	[.141]		[.062]	[.086]	[.083]	[.084]
Zip White, %		.112*	.108*	.099	.108		.058*	.055*	.053*	.062*
		[.066]	[.063]	[.061]	[.065]		[.029]	[.027]	[.028]	[.031]
Zip Black, %		.029	.022	.030	.038		.005	-.001	.000	.008
		[.083]	[.085]	[.087]	[.090]		[.042]	[.043]	[.046]	[.048]
Zip Married, %		-.083	-.050	-.111	-.108		-.074	-.050	-.061	-.058
		[.112]	[.118]	[.094]	[.094]		[.068]	[.075]	[.061]	[.061]
Zip Some College, %		-.013	-.014	-.039	-.046		.030	.030	.026	.019
		[.158]	[.167]	[.177]	[.178]		[.089]	[.093]	[.100]	[.101]
Zip College, %		.219	.260	.300*	.302*		.063	.092	.100	.102
		[.146]	[.172]	[.174]	[.175]		[.076]	[.094]	[.095]	[.096]
Zip Over College, %		-.093	-.095	-.107	-.105		-.034	-.036	-.038	-.037
		[.149]	[.165]	[.163]	[.163]		[.084]	[.094]	[.092]	[.092]
Zip log(Median HH Income)			-.026	-.009	-.008			-.020	-.017	-.015
			[.040]	[.044]	[.045]			[.022]	[.025]	[.025]
Zip log(Population Density)				-.007	-.007				-.001	-.002
				[.006]	[.006]				[.003]	[.003]
R-squared	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
Sample Size	292286	292071	290582	290582	290582	292286	292071	290582	290582	290582
Demographics	No	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
Year FE	No	No	No	No	Yes	No	No	No	No	No

Notes.—Sources: Monthly Current Population Survey (CPS) and National Center for Education Statistics (NCES) Common Core of Data (CCD), 2006-2024; American Community Survey (ACS) 2015-2019 from the Census Bureau. The table reports the coefficients associated with regressions of the total staff to student ratio and the administrators to student ratio on an indicator for right-to-work status for the state, conditional on a vector of zipcode characteristics, including log median household income and population density. Standard errors are clustered at the state-level.