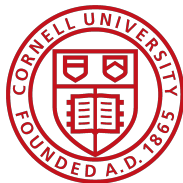


Less Funding, More Lecturers, and Fewer Professors

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Cornell Economics, PhD Defence
29 June 2026

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OPINION | **FACULTY**

The End of Faculty Tenure

Marc Stein argues declines in tenure density constitute the greatest threat U.S. higher education has ever faced.

By Marc Stein
Published April 25, 2022

Is Tenure Really Dying? And Would That Be Good or Bad?

Is academic tenure in for major changes over the next decade?

Wednesday, September 21, 2022

FACULTY & STAFF

Report Reveals Biggest Decrease in Real Wages for Full-Time Faculty



Rebecca Kelliher
Jun 22, 2022



The American Association of University Professors (AAUP) released its [2021-22 Annual Report on the Economic Status of the Profession](#), which details findings from the AAUP's annual Faculty Compensation Survey. One of the report's biggest takeaways is that real wages for full-time faculty in 2021 fell below Great Recession levels of the late 2000s, after adjusting for inflation.



Funding Down, Tuition Up

State Cuts to Higher Education Threaten Quality and Affordability at Public Colleges

UPDATED AUGUST 15, 2016 | BY MICHAEL MITCHELL, MICHAEL LEACHMAN, AND KATHLEEN MASTERSON^[1]

Years of cuts in state funding for public colleges and universities have driven up tuition and harmed students' educational experiences by forcing faculty reductions, fewer course offerings, and campus closings. These choices have made college less affordable and less accessible for students who need degrees to succeed in today's economy.

REPORT JUN 11, 2020

Mounting Peril for Public Higher Education During the Coronavirus Pandemic

Absent federal action, state budget cuts are about to add to colleges' pain from the pandemic.

PBS
NEWS
HOUR



By –
Jon Marcus,
The
Hechinger
Report

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comment

Most Americans don't realize state funding for higher ed fell by billions

Education Feb 26, 2019 12:20 PM EDT

Introduction — Preview & Road-Map

Three connected topics:

1. Document the substitution away from professors towards lecturers, at US public universities
 2. Link the substitution to stagnating state funding, with an IV approach for causal effects
 3. Infer the mechanism for these changes, **limited hiring**.
-

Trends in US Higher Education

Shifts in State Funding

Effects on Faculty

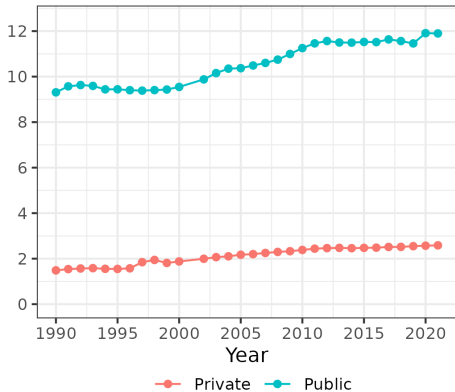
Mechanism for Faculty Substitution

Trends in US Higher Education

Despite rising enrolment at US public universities, **state funding has stagnated**.

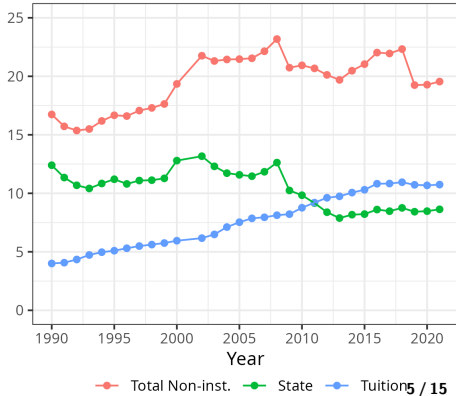
(a) Mean Enrolment, per University.

Student Enrolment, thousands



(b) Mean Funding per student among Public Universities.

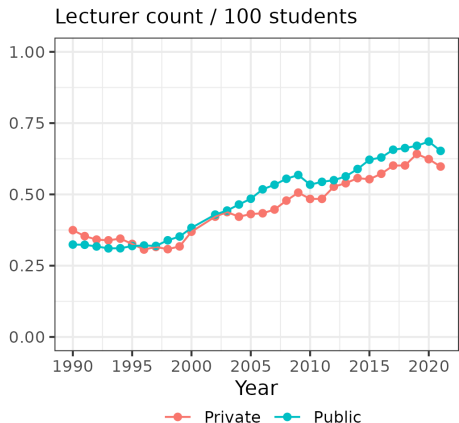
Mean Funding per Student, \$ thousands



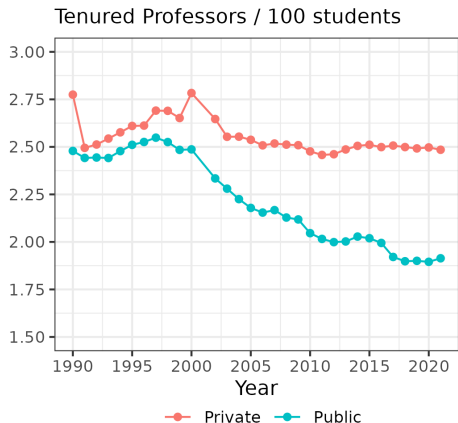
Trends in US Higher Education

At the same time, lecturers employment has increased drastically, and tenure-track/tenured professors fallen at public universities.

(a) Non-tenure Track (lecturers).



(b) Tenured (Full Professors).

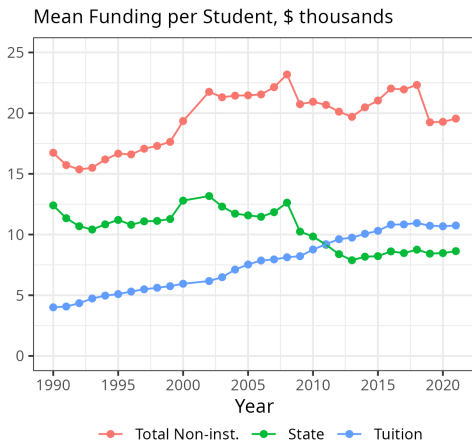


Trends in US Higher Education

States decide an annual budget:

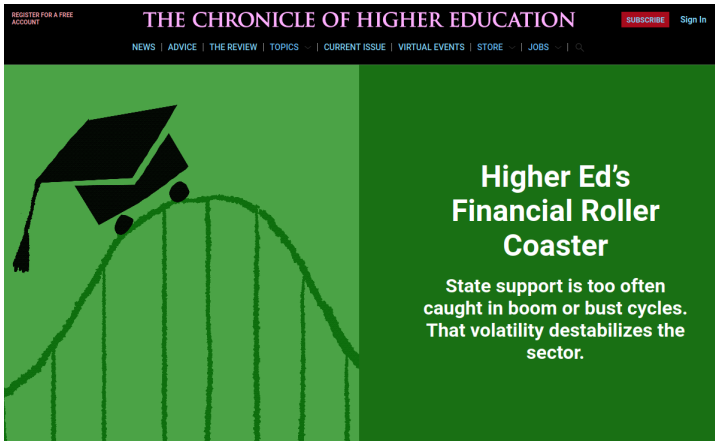
1. State legislature plans annual budget
2. Back-and-forth bargaining with governor, who signs off when they agree
3. Higher education is attractive to cut funding in this bargaining, thanks to low lobbying power.

Figure: Average Public University Funding.



⇒ institutional set-up leads to public universities being stiffed year-on-year.

Trends in US Higher Education

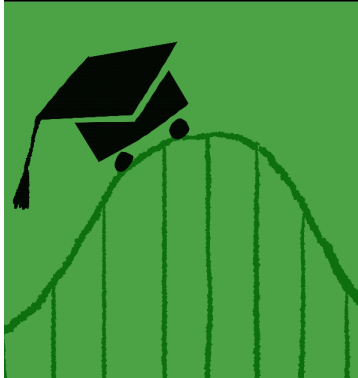


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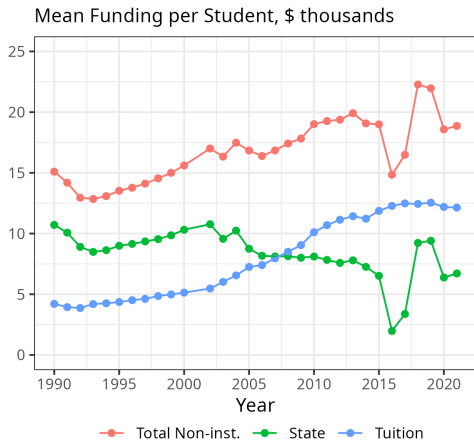


**Higher Ed's
Financial Roller
Coaster**

State support is too often caught in boom or bust cycles. That volatility destabilizes the sector.

Trends in US Higher Education

Figure: Average Illinois University Funding.



This process in Illinois, 2015:

1. Democrat state legislature plans annual budget
2. Sends to Republican governor, then bargaining went nowhere
3. 2016 fiscal year starts with no budget, state staff furloughed etc.

⇒ Partisan disagreements led to Illinois public universities being stiffed in 2016.

Shifts in State Funding

Estimate causal effects using **Shift-Share IV for state funding** → **faculty** (Deming Walters 2017, Chakrabarti Gorton Lovenheim 2020).

1. Exploit different rates of historical reliance on state funding between universities, in 1990–1993
2. Interacted with state-wide changes in higher education funding.

$$\mathbf{IV} = \underbrace{\sum_{\tau=0}^3 \frac{1}{4} \left(\frac{\text{State Funding}_{i,1990+\tau}}{\text{Total Revenues}_{i,1990+\tau}} \right)}_{1. \text{ Base reliance on state funding, 1990–1993}} \times \underbrace{\left(\frac{\text{Total State Funding}_{s(i),t}}{\text{Student Population}_{s(i),t}} \right)}_{2. \text{ State-wide higher ed funding shifts}}$$

Intuition:

- ▶ State-wide shifts in higher ed funding affect universities that rely on state funding more
- ▶ State-wide shifts in higher ed funding come from population shifts + changing budget priorities — not one campus' actions.

Shifts in State Funding

Estimate causal effects using **Shift-Share IV for state funding** → **faculty** (Deming Walters 2017, Chakrabarti Gorton Lovenheim 2020).

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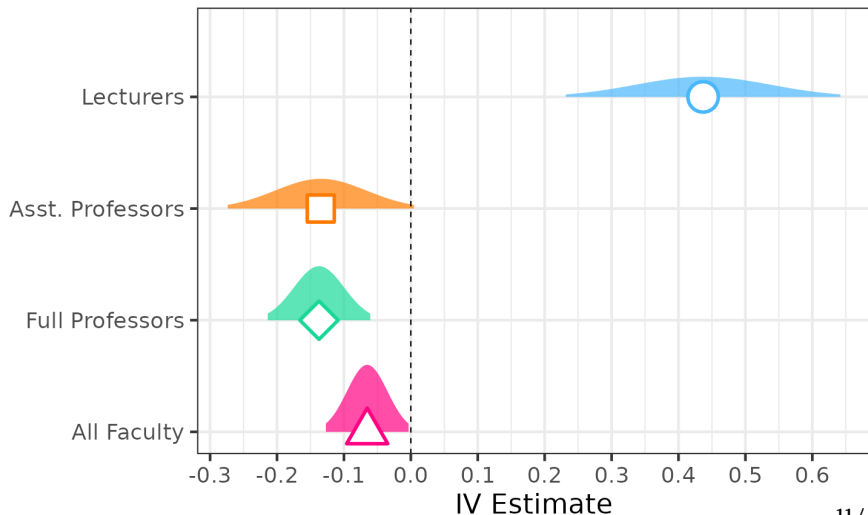
Strong instrument for yearly public university state funding:

- ▶ $-\$1,000$ per student funding shift-share → $-\$1,176$ state funding
- ▶ -10% per student funding shift-share → -9.77% state funding.

Shifts in State Funding — Effects on Faculty

Shift–Share IV Results for the average public university:

- 10% state funding per student $\rightarrow \approx 4.4\%$ more lecturers / students.
- 10% state funding per student $\rightarrow \approx 1.4\%$ fewer professors / students.

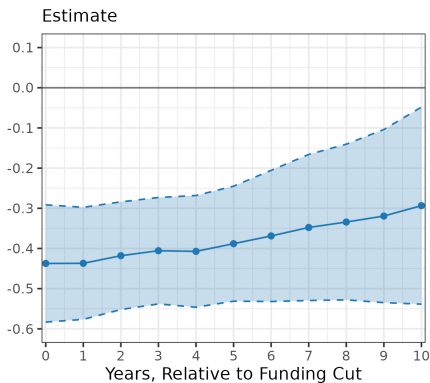


Shifts in State Funding — Effects on Faculty

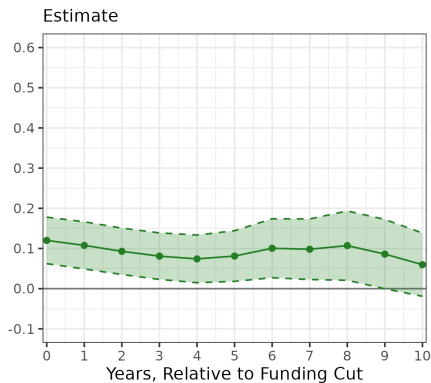
⇒ Stagnating state funding, and increasing reliance on lecturers.

Substitution effects are long-lasting → medium-term elasticities:

(a) Non-tenure Track (lecturers).



(b) Tenured (Full Professors).



Mechanism for Faculty Substitution

Stagnating state funding led to substitution towards lecturers, at US public universities, but unclear how these effects come about.

- ▶ Are **faculty let-go** by their universities?
- ▶ Are **faculty leaving voluntarily**, following pay cuts?
- ▶ Are **faculty poached by other universities** e.g., after promotion limits at their current university?

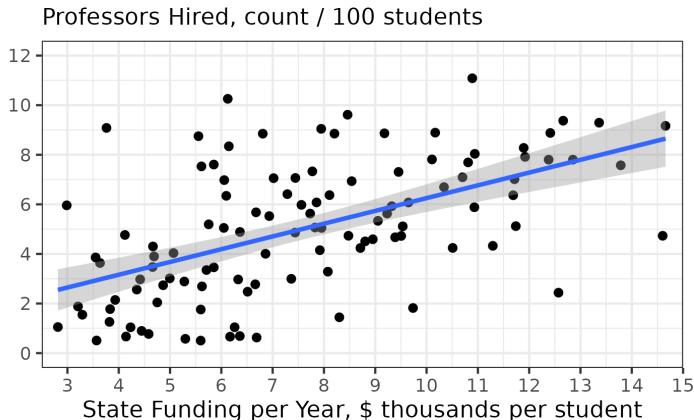
To briefly summarise effects of state funding cuts on faculty, using data on all Illinois public uni staff 2011–2021:

- ▶ **No detected effect of state funding cuts** on follow-on salaries, exit rates, or promotions among Illinois faculty
- ▶ These data represent those who are already faculty
⇒ i.e., **incumbent faculty** unaffected by state funding cuts.

Mechanism for Faculty Substitution

Condundrum: how can substitution effects happen?

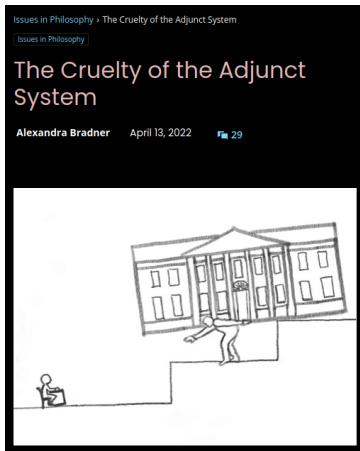
⇒ limits **faculty hiring**, supported by hiring data.



Auxiliary data on professor hiring from Wapman Zhang Clauset Larremore (2022) for USA public universities 2011–2021.

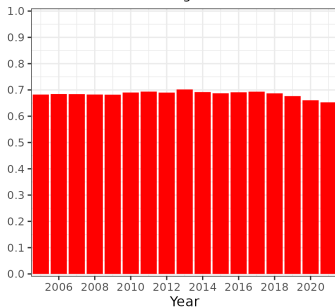
Conclusion

Are lecturers a bad thing? No, but many are over-worked, under-paid...



(a) Part-time Rate, Lecturers at Public Unis

Percent of Lecturers Working Part-time



Implies that public universities (who educate the majority of US higher ed students) make long-lasting personnel decisions based on yearly funding cuts. While instruction salaries are $< 30\%$ of total spending....