

For-Profit Higher Education Responsiveness to Price Shocks: An Investigation of Changes in Post 9-11 GI Bill Allowed Maximum Tuitions

Matthew Baird¹ Michael S. Kofoed² Trey Miller³ Jennie Wenger¹

¹RAND

²United States Military Academy

³Association for Institutional Research

NBER Economics of Education Fall Meetings
Cambridge, Massachusetts
November 1, 2018

Disclaimer

The views expressed are those of the authors and do not reflect the position of the United States Military Academy, the Department of the Army, or the Department of Defense.

Bennett hypothesis

- In 1987, William J. Bennett penned an op-ed in the *New York Times* claiming that when the government offers financial aid, colleges will increase their “sticker price” tuition to capture the aid.

Bennett hypothesis

- In 1987, William J. Bennett penned an op-ed in the *New York Times* claiming that when the government offers financial aid, colleges will increase their “sticker price” tuition to capture the aid.
 - ▶ Turner (2014) uses a regression kink to show that institutions reduce merit aid in response to increases in Pell Grant aid.
 - ▶ Long (2004) finds that four year colleges in Georgia increased prices after the introduction of the HOPE scholarship.
 - ▶ Singell and Stone (2007) find limited evidence that Pell Grants induced public universities to increase aid, but did find an effect at private colleges.

For-profit institutions may be particularly susceptible to the Bennett hypothesis

- Federal loans and grants are an essential income stream for for-profit institutions.

For-profit institutions may be particularly susceptible to the Bennett hypothesis

- Federal loans and grants are an essential income stream for for-profit institutions.
- Government estimates that for-profit's revenue is on average over 70 percent from federal loans and grants, compared to 30 percent for non-profit institutions. (Deming *et al.* 2012)

For-profit institutions may be particularly susceptible to the Bennett hypothesis

- Federal loans and grants are an essential income stream for for-profit institutions.
- Government estimates that for-profit's revenue is on average over 70 percent from federal loans and grants, compared to 30 percent for non-profit institutions. (Deming *et al.* 2012)
- 2008: For-profit students were 11 percent of postsecondary population, but 24 percent of Pell grants, 28 percent of unsubsidized Stafford loans, and 25 percent of subsidized Stafford loans (Lau 2014).

For-profit institutions may be particularly susceptible to the Bennett hypothesis

- Federal loans and grants are an essential income stream for for-profit institutions.
- Government estimates that for-profit's revenue is on average over 70 percent from federal loans and grants, compared to 30 percent for non-profit institutions. (Deming *et al.* 2012)
- 2008: For-profit students were 11 percent of postsecondary population, but 24 percent of Pell grants, 28 percent of unsubsidized Stafford loans, and 25 percent of subsidized Stafford loans (Lau 2014).
- Cellini and Goldin (2012) show that for profit colleges that are just barely eligible for Title IV funding have higher tuition rates than those who are not eligible.

For-profit institutions may be particularly susceptible to the Bennett hypothesis

- Federal loans and grants are an essential income stream for for-profit institutions.
- Government estimates that for-profit's revenue is on average over 70 percent from federal loans and grants, compared to 30 percent for non-profit institutions. (Deming *et al.* 2012)
- 2008: For-profit students were 11 percent of postsecondary population, but 24 percent of Pell grants, 28 percent of unsubsidized Stafford loans, and 25 percent of subsidized Stafford loans (Lau 2014).
- Cellini and Goldin (2012) show that for profit colleges that are just barely eligible for Title IV funding have higher tuition rates than those who are not eligible.
- Cellini (2010) finds that the number of institutions increased as certain financial aid programs increased in California.

For-profit institutions may be particularly susceptible to the Bennett hypothesis

- Federal loans and grants are an essential income stream for for-profit institutions.
- Government estimates that for-profit's revenue is on average over 70 percent from federal loans and grants, compared to 30 percent for non-profit institutions. (Deming *et al.* 2012)
- 2008: For-profit students were 11 percent of postsecondary population, but 24 percent of Pell grants, 28 percent of unsubsidized Stafford loans, and 25 percent of subsidized Stafford loans (Lau 2014).
- Cellini and Goldin (2012) show that for profit colleges that are just barely eligible for Title IV funding have higher tuition rates than those who are not eligible.
- Cellini (2010) finds that the number of institutions increased as certain financial aid programs increased in California.
- Cellini and Turner (2018) use tax data to show that for-profit students do worse in the labor market.

Veterans are more likely to be in for-profit institutions

Veterans are more likely to be in for-profit institutions

- Around 3-16 percent of veterans in school are at for-profits, compared to 1-5 percent for non-veterans (Steele, McGovern, Buryk 2013).

Veterans are more likely to be in for-profit institutions

- Around 3-16 percent of veterans in school are at for-profits, compared to 1-5 percent for non-veterans (Steele, McGovern, Buryk 2013).
- Barr (2015) shows that PGIB benefits increased college enrollment of separated veterans 15-20 percent and shifted enrollment more towards 4-year institutions

Google Search: “For-Profit Veterans”

About 6,380,000 results (0.43 seconds)

How For-Profit Colleges Target Military Veterans (and Your ...
time.com/money/3573216/veterans-college-for-profit/ ▶ Time +
If the relationship between for-profit colleges and military veterans is a controversial one, the law that motivated the controversy is not. The new G.I. Bill, passed ...

How Pricey For-Profit Colleges Target Vets' GI Bill Money ...
www.motherjones.com/politics/...gi-bill-for-profit-colleges ▶ Mother Jones +
Last winter, the Department of Veterans Affairs tasked its newly hired blogger, a cantankerous Iraq vet named Alex Horton, with investigating the website ...

Military Veterans, For-Profit Colleges, and the 90/10 Loophole
www.theatlantic.com/...profit-college-veterans.../396731/ ▶ The Atlantic +
Jun 24, 2015 - For nearly two decades, the federal government has barred for-profit colleges from relying entirely on its coffers for their revenues.

For-profit colleges are using the GI Bill to make money off ...
www.latimes.com/...la-4-for-profit-colleges-gi-bill-2... ▶ Los Angeles Times +
Aug 18, 2015 - One crucial source of revenue, however, has remained a constant: military veterans. For-profit colleges have collected \$8.2 billion from the ...

For-profit colleges aggressively target veterans for ...
www.washingtonpost.com/...for-profit-colleges-aggre... The Washington Post +
Jun 25, 2015 - When it comes to enrolling veterans and their families, there is only upside for for-profit colleges. Men and women who serve in the military ...

Vets snared in for-profit college collapse want GI ... - Politico
www.politico.com/...veterans-gi-bill-for-profit-colleges-119697 ▶ Politico +
Jul 2, 2015 - The collapse of for-profit Corinthian Colleges has been a calamity for Afghanistan and Iraq veterans who not only lost their chance at a college ...

Senator slams for-profit college for 'deceiving' veterans ...
nypost.com/...senator-slams-for-profit-college-for-deceiv... ▶ New York Post +
Jul 1, 2015 - The University of Phoenix's ability to recruit veterans should be halted pending an investigation of its cozy relationship with the Pentagon, ...

For-profit schools targeted again over GI Bill payouts
www.militarytimes.com/...veterans/...vets/...profit-colleges.../29160377/ ▶
Jun 23, 2015 - Bill would restrict some for-profit schools from receiving GI Bill funds. ...
For-profit colleges are under fire again on Capitol Hill, with veterans ...

Veterans Are Most Vulnerable To For-Profit College ... - Forbes
www.forbes.com/...veterans-are-most-vulnerable-to-for-profit-col... ▶ Forbes +
Nov 12, 2014 - Though military veterans are the most vulnerable to for-profit college marketing fraud, they are the least protected.

This Veterans Day, Help a Vet Avoid a GI Bill For-Profit ...

Old "GI Bill.com"

GI Bill.com Because you earned it.



Sign up for our GI Bill Newsletter:

Enter Email Here

Subscribe

Home | New GI Bill | Education Benefits | GI Bill Rates | WAVE | Online Schools | FAQ | Blog | News | Military - Friendly Colleges



You earned it.
How this site works
Find the right school for you.

✓ ----- GIBill Schools -----

American Military University
Strayer University
Grantham University
Virginia College
Walden University
Kaplan University
DeVry University
University of Phoenix
Westwood College
Art Institute Online
Full Sail University - Online
The Art Institutes
American InterContinental University Online
Southwest Florida College
Argosy University

Making Sense of It All

> **GI Bill 2.0: Am I Affected?**

On Aug. 1, 2011, a series of changes to the Post-9/11 GI Bill took effect. Find out what those changes could mean for you.

> **Put Your Benefits to Work: GI Bill School Finder**

Search for schools where you can use your GI Bill benefits.

> **Military Education Benefits 101**

Make sure you're getting the most out of your benefits by learning about them.

> **From the Armed Forces to the Workforces: The Military to Civilian Transition**

See where your fellow veterans are working, and learn

Latest News

SEPTEMBER 02, 2011

[VA Lists Ships Exposed to Agent Orange](#)

AUGUST 30, 2011

[VA Hopes to Engage Public in Health Care Innovation](#)

AUGUST 26, 2011

[Defense Department Prepares for Hurricane Irene](#)

[More Latest News >>](#)



<http://e1.cdn.qns>

New “GI Bill.com”

UNITED STATES
DEPARTMENT OF VETERANS AFFAIRS



GIBill.com

As the result of a legal settlement, the award of the GIBill.com domain name to VA is a victory for all Veterans and the GI Bill. VA is committed to protecting the educational opportunities Veterans have earned through their service.

You will be automatically redirected to www.benefits.va.gov/gibill in 10 seconds. If you aren't forwarded to the new page: [click here](#).

Our contribution

- We exploit a policy change that creates intertemporal and interspatial exogenous variation in GI Bill benefits
- We compare positive vs. negative changes in benefits
- The policy also creates variation in the magnitude of the change
- We use a set of difference-in-difference estimators to find that for-profit colleges increase their “sticker price” tuition by \$500 in a state where PGIB increased with a ‘pass-through’ rate of 1 percent.

Why study the Post 9/11 GI Bill?

- The Post 9/11 GI Bill (PGIB) represented one of the largest expansions of financial aid.
- In 2011, the first year of the program, students at for-profit universities claimed 36.5 percent of PGIB dollars while they represented 23.3 percent of students (Harkin Report).
- Unclear if for-profit institutions are a net benefit for service members and veterans.

Montgomery GI Bill vs Post 9-11 GI Bill

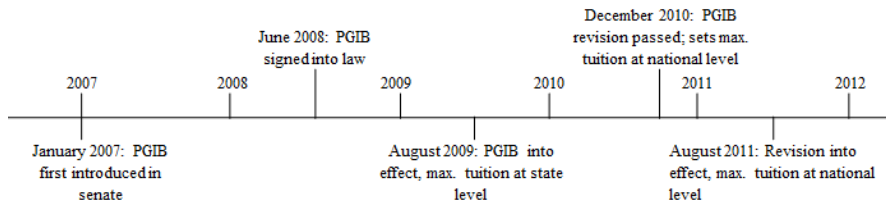
- Montgomery GI bill:

- ▶ Requires active opting in and service member payments
- ▶ Benefit payments made directly to service members for tuition and fees at a standard level, \$1,321/month in 2008

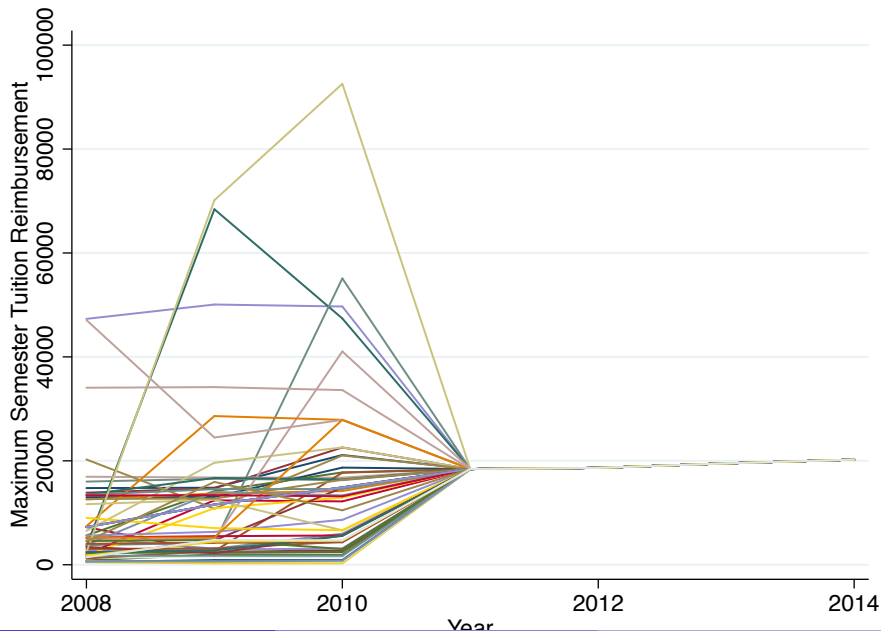
- PGIB

- ▶ Everyone opted in and no payments needed
- ▶ Tuition payments made to institutions, caps initially varied by state
- ▶ Wide variation: Delaware as low as \$665 for the entire term in 2008, while Colorado was set at \$43,035
- ▶ In 2010, a revision of PGIB was passed, one element of which changed the state-by-state maximum tuition to a universal national maximum tuition rate of \$17,500/year

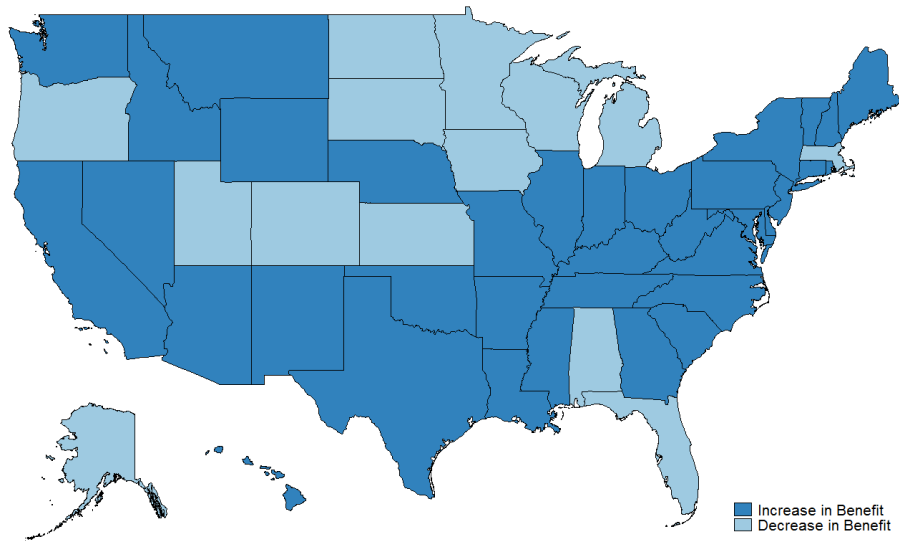
Timeline of PGIB



There is large state variation in maximum tuition benefits



The location of states that saw increases or decreases in the maximum tuition benefits is spread-out

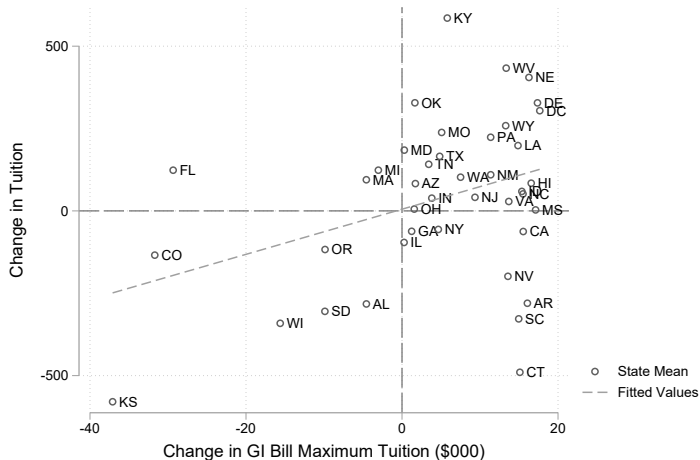


Summary statistics: IPEDS data (2003-2013)

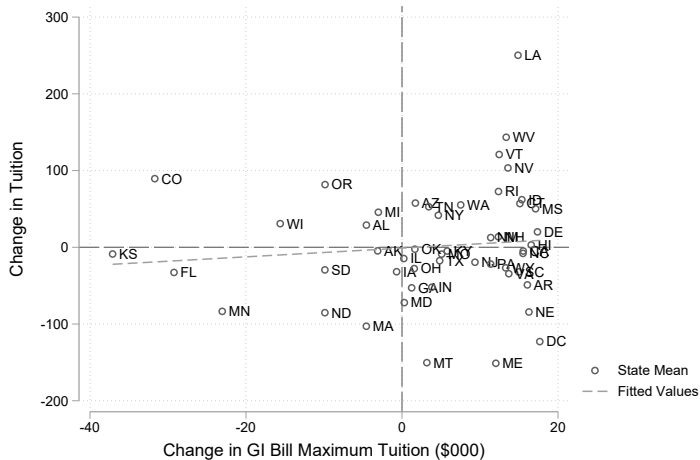
	(1)	(2)	(3)
	For-Profit	Public	Private
Tuition	14,671.89 (5,331.14)	3,840.37 (2,640.76)	19,698.74 (10,653.16)
Enrollment	1,139.09 (8541.32)	12,562.82 (85,112.06)	5645.18 (33,668.16)
Positive (1/0)	0.775 (0.417)	0.785 (0.411)	0.778 (0.416)
Δ in Benefit	1,668 (16,492)	2,583 (14,589)	3,499 (12,589)
Observations	11,483	19,101	17,102

Standard Deviations in Parentheses

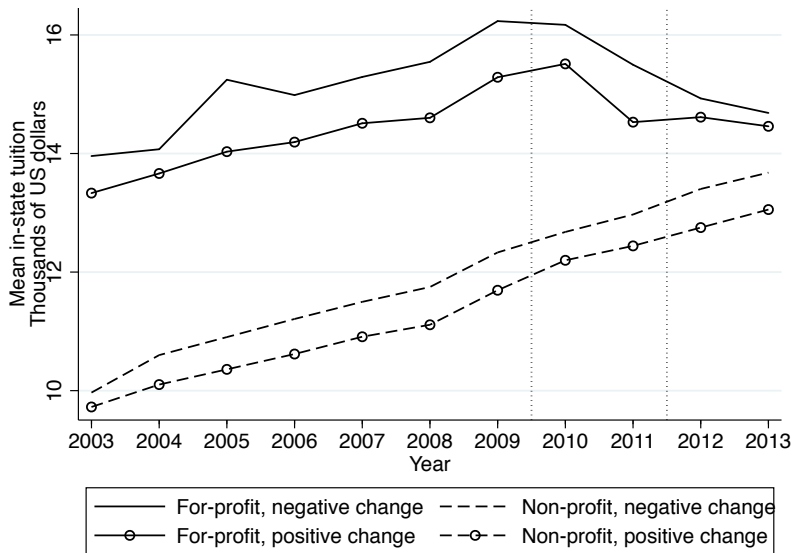
Scatterplot: For-profit Colleges



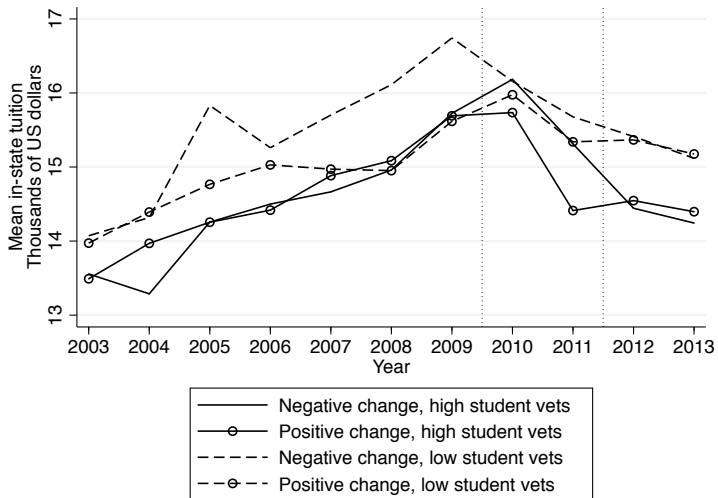
Scatterplot: Public Colleges



Trends in tuition



Tuition Rates by Direction and % Veteran in County



Econometric model

Fixed effect difference in differences estimator as well as triple difference (for-profit versus non-profit)

$$Y_{jst} = \beta_0 + \beta_1 T_{st} \times Post2011 + \gamma_t + \alpha_j + \epsilon_{jst}$$

Y_{jst} is an outcome of interest (tuition, $\ln(\text{tuition})$, enrollments) for institution j , in state s , during year t .

T_{st} is the measure of treatment

- The change in maximum tuition from the state level to the federal level
- An indicator for the change being positive

Additional controls: time and institution fixed effects and several county-level controls including $\log(\text{population})$, poverty rate, average income, state unemployment rate, and degree granting status.

Results: log tuition

	(1)	(2)	(3)	(4)	(5)	(6)
	All	Non-profit 4-year	<4-year	All	For-profit 4-year	<4-year
Pos. X Post 2011	0.009* (0.005)	-0.001 (0.004)	0.020* (0.010)	0.029** (0.012)	0.045*** (0.010)	0.001 (0.026)
Institution FE	X	X	X	X	X	X
Control variables	X	X	X	X	X	X
Observations	15,637	9,921	5,716	5,709	3,172	2,537
R-squared	0.221	0.220	0.271	0.060	0.131	0.059

Results: tuition

	(1)	(2)	(3)	(4)	(5)	(6)
	All	Non-profit 4-year	<4-year	All	For-profit 4-year	<4-year
Pos. X Post-2011	-87.643* (46.197)	-67.216 (62.026)	-36.967 (51.549)	460.899** (181.171)	655.722*** (168.439)	-135.773 (425.407)
Institution FE	X	X	X	X	X	X
Control variables	X	X	X	X	X	X
Observations	15,637	9,921	5,716	5,709	3,172	2,537
R-squared	0.220	0.291	0.100	0.075	0.135	0.080

Results: tuition dosage (per \$100,000)

	(1)	(2)	(3)	(4)	(5)	(6)
	All	ln(Tuition) 4-year	<4-year	All	Tuition 4-year	<4-year
Diff. X Post 2011	0.064** (0.030)	0.073*** (0.027)	0.026 (0.068)	1018.197** (468.349)	1062.027** (467.303)	-71.970 (1045.519)
Institution FE	X	X	X	X	X	X
Control Variables	X	X	X	X	X	X
Observations	5,709	3,172	2,537	5,709	3,172	2,537
R-squared	0.059	0.126	0.059	0.074	0.132	0.080

Results: triple difference

	(1)	(2)	(3)	(4)	(5)	(6)
	All	Tuition 4-year	<4-year	All	log(Tuition) 4-year	<4-year
For-profit	690.725 (545.647)	841.310 (601.333)	468.851*** (88.632)	0.066** (0.029)	0.055* (0.031)	0.056*** (0.012)
For-profit X Pos.	-648.298 (566.025)	-613.863 (712.829)	-985.294*** (142.132)	-0.043 (0.035)	-0.054 (0.051)	0.001 (0.015)
For-profit X Post-2011	-1.7e+03*** (157.873)	-2.0e+03*** (127.444)	-992.291** (408.930)	-0.111*** (0.010)	-0.120*** (0.008)	-0.099*** (0.026)
For-profit X Pos. X Post-2011	425.223** (186.735)	315.324* (180.396)	410.957 (442.591)	0.005 (0.012)	0.025** (0.010)	-0.018 (0.029)
Institution FE	X	X	X	X	X	X
Control Variables	X	X	X	X	X	X
Observations	21,346	13,093	8,253	21,346	13,093	8,253
R-squared	0.076	0.149	0.027	0.123	0.144	0.152

Results: enrollment

	(1)	(2)	(3)	(4)	(5)	(6)
	All	Non-profit 4-year	<4-year	All	For-profit 4-year	<4-year
Pos. X Post-2011	6.496 (7.215)	9.384 (8.167)	10.113 (13.852)	-15.294** (7.251)	-51.523** (24.613)	-2.974 (3.712)
Institution FE	X	X	X	X	X	X
Control variables	X	X	X	X	X	X
Observations	19,365	11,444	7,921	16,658	3,510	13,148
R-squared	0.004	0.009	0.021	0.008	0.022	0.013

Robustness checks

- We look at for-profit institutions that were either at or above the maximum GI Bill benefit since these schools were already capturing the entire benefit.
- One limitation of our data is that we cannot see the number of veterans in an institution, but we can estimate county-level rates using ACS
 - ▶ IPEDS starting collecting data on veterans in 2014, we are reluctant to use these data since it is post-treatment and many for-profits were shutdown during this time period.

Above the maximum tuition, for-profit colleges

	(1)	(2)	(3)
	All	4-year	<4-year
Pos. X Post-2011 X Above Max.	-0.023** (0.012)	-0.036*** (0.012)	0.011 (0.028)
Pos. X Post-2011	0.035*** (0.013)	0.059*** (0.012)	-0.001 (0.026)
Institution FE	X	X	X
Control variables	X	X	X
Observations	5,350	3,020	2,330
R-squared	0.059	0.137	0.060

Log tuition results, by local veteran density

	(1) All	(2) 4-year	(3) <4-year
Pos. X Post-2011	0.025* (0.015)	0.053*** (0.016)	-0.049 (0.031)
Post-2011 X Top 50	-0.008 (0.021)	0.026* (0.015)	-0.100** (0.051)
Pos. X Post-2011 X Top 50	0.008 (0.023)	-0.018 (0.021)	0.105** (0.053)

Summary

- We use variation in direction and magnitude of the re-authorization of the Post 9/11 GI Bill.
- For-profit universities in states where the PGIB went up, increased their “sticker price” tuition by \$460 or 2.5 percent.
- Pass-through rate of 1%-1.5% for a policy that only affects a fraction of students
- Public universities may have increased their tuition by a smaller amount, no change at private colleges.
- Findings driven by schools with tuition rates below the previous maximum benefit.
- Some decrease in enrollments

Thank You!