“Credit Supply and the Rise in College Tuition…”
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Clear significance

• Second-largest, fastest-growing category of consumer debt
• Rumblings of student debt inhibiting household formation, homeownership, durable consumption
• National debate about tuition prices and funding for higher education
Motivation from First Principles

• Government often corrects externalities with subsidies.
  – e.g. mortgage interest, rent vouchers, fuel-efficient cars, health insurance
• The effectiveness of these subsidies is limited by the pass-through of the subsidy onto prices.
• Perfect pass-through => no effect of subsidy.
  – (also means there was inelastic demand and so a subsidy was unlikely to raise quantity)
• One subsidy for higher education: positive credit supply shock. Lowers net price (user-cost) of education.
Positive Externalities 101

- Price of Education
- Private Cost
- Social benefit
- Private benefit

Amount of externality

$Q^c$ $Q^*$

Quantity (% Educated)
Effect of a Subsidy on P, Q

Price of Education

Private Cost

Sticker price

Original price

User cost (unobserved)

Private benefit

Subsidized Cost

Q^c

Q^*

Quantity (% Educated)
Subsidies Raise Prices, Lower User Costs

- Subsidy can increase $Q$ above $Q^c$
- Net-of-subsidy user cost is lower than competitive equilibrium price
- Never expected $P$ to be lower by full amount of subsidy—some of subsidy is always captured by supplier because of demand elasticity (not perfectly inelastic).
- Easiest to imagine with Pell Grants, can also do with subsidized loans as decrease in user cost relative to private market
Bennett Hypothesis in Econ-speak

• “...increases in financial aid in recent years have enabled colleges and universities blithely to raise their tuitions, confident that Federal loan subsidies would help cushion the increase...”
  –William Bennett, NYT 1987

• What do Economics First Principles have to say about the plausibility of Dr. Bennett’s claim?

• Yup, makes sense.
This paper: Capture vs. Pass-through

Price of Education

Amount of subsidy

captured by schools
pass-through to students

Private Cost

Subsidized Cost

Private benefit

ΔP

Q^c

Q^*

Quantity (%) Educated
ΔPrice a key policy parameter

• ΔP an important consideration in subsidy cost-benefit analysis

• In real life, we don’t know where Q* is. Amount of pass-through tells us about difference between supply and demand elasticities, an input into Q*.

• Intuitively, if I’m going to subsidize good X, I want to know where my money sticks.

• Heterogeneity has distributional impacts (are subsidies reaching the right people) and regulation of higher education implications (for-profits)

• Given fastest-growing consumer debt segment, important to understand asset prices fueling this increase
Has Federal Student Financial Aid Contributed to Tuition Increases?

• Yes. In a nutshell:
  1. From 2008-2010, caps on grants and loans increased.
  2. This disproportionately affected schools whose student bodies were most constrained by these caps.
  3. Those most affected schools increased their tuition the most.
• For every $1 increase in available subsidized financing, tuition rises by $0.5*(school % at loan limits).
• 15% of students at the typical school max out subsidized loans. For typical school, when caps go up $1,000, tuition prices go up by $75.
Virtues

✓ Undisputedly important topic
✓ Econ 101 intuition
✓ Plausible exogenous variation
✓ Supported by very credible event study
✓ Bonus: Smoking-gun quote from for-profit earnings call
Caution on Interpretation

• Hard to say that “In the short run, higher loan caps can be costly to students...” in aggregate.
• If 20% of students get a $1,000 subsidy and all students face a $100 tuition increase, average student benefits by $100, treated benefit by $900.
  – Clear (but small?) cost to students not receiving max Federal aid: modal student loses $100
• User costs unobserved => size of subsidy for subsidized student loans unobserved
  – Related to interest rate spread between unsubsidized and subsidized
  – Harder to quantify for (extensive) marginal students
Inference

• Small effects => detection should be difficult
• e.g. 2 s.d. change in % students at cap effect on tuition is $150 <= 1.5%
• Apparently large enough sample to detect, but could precision be overstated given DGP?
• What is distribution of # of students within a school?
• Average seems sufficiently high (100) but if there are lots of schools with <40 students per school, may want to try dropping those or bootstrapping students for inference to not overstate precision.
Little things

• IV >> OLS. Section 4.3 says Omitted Variables Bias likely given low R^2. Discuss more. Example OVs?

• Could cite Chetverikov et al. (2015) for quartiles of net tuition strategy

• Figure 8: LHS axis says mean exposure*Delta cap = $500. But mean exposure = 15%, Delta cap in 2008 is $1000. Shouldn’t this be $150?
Next Steps

• ISO Headline: how much of increase in tuition and debt is from 2002-2010 is because of loan supply?

• Is this empirical support for the Bennett hypothesis suggest that this is the most important channel? Or channel #3/5?

• Welfare—how much are students served by increase in supply of Federally subsidized credit?
  – Input: can a calibrated user cost model of higher ed confirm how much user cost has decreased?

• Where (else) is the captured portion of the subsidy going? Administrators? Sports? Fancy dorm rooms? Curing cancer? Undergraduate mentoring grants?
Conclusion

1. We, the people, subsidize lots of things, including higher education.
2. First principles suggest this raises prices and lowers user costs.
3. The amount by which it raises prices is very important for policy, as is heterogeneity in this.
4. This paper: it does raise prices! Typical school tuition went up an extra $75/year because of cap increases.
5. Yes, credit supply shocks show up in asset prices.
6. Think more about aggregate implications of magnitudes and inference.