

Welfare Effects of Tuition Price Regulation

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This policy brief is based on the working paper “Price Regulation in Centralized College Admission Systems ” by Advait R. Aiyer.

Objective:

This study investigates the welfare effects of government price regulation within a centralized college admissions system. The research leverages a 2019-20 policy change in a prominent Indian state that increased tuition prices for private engineering colleges by an average of 20% while leaving caste-based tuition subsidies fixed. By examining the interplay between regulated prices and institutional investment, the paper reveals how price controls can unintentionally trigger quality markdowns and exacerbate socioeconomic segregation, particularly when institutions possess significant market power. These findings suggest that regulatory instruments that fail to account for endogenous institutional responses can inadvertently reduce overall welfare and widen inequalities. They may penalize students who pay out-of-pocket while allowing dominant colleges to capture rents without commensurate improvements in educational quality.

The Challenge:

Not unlike most developing countries today, India's higher education landscape has witnessed a sizable shift toward private provision in the past two decades. In the state under study, private colleges account for 95% of supply and around 90% of total enrollment in engineering colleges. In this market, students belong to three main caste groups: Scheduled Castes and Tribes (SC/ST), Backward Castes (BC), and General Population (GEN), whose demographic shares and subsidies shape both affirmative action policies and effective tuition payments.

SC/ST students constitute roughly 20% of all admission candidates, receiving 20% reserved seats; they are fully federally funded throughout the period and face zero out-of-pocket cost for any program. BC students make up about 50% of the student body and hold 30% reserved seats; they receive a fixed state tuition subsidy of ₹35,000. Lastly, GEN students, who constitute the remaining 30% of students and face no reservation benefits, are ineligible for subsidies and always pay the full regulated tuition price.

Because the 2019–20 price revision increased tuition across most colleges while subsidies remained fixed, BC and GEN students (80% of the student population) ex-

perienced significant post-policy increases in out-of-pocket expenses. Crucially, however, the reform did not apply a uniform increase. The state government fixed college-specific prices, generating substantial heterogeneity in the net price change faced by students. This creates a policy tension in centralized admissions systems. When effective prices rise more in some institutions than others, especially when subsidies are flat, students may re-sort across programs or exit the market altogether. This alters peer composition and potentially increases socioeconomic segregation in the student body.

At the same time, heterogeneous price fixation can reshape competitive incentives on the supply side. Colleges with stronger demand and greater market power may be able to absorb higher regulated prices without needing to upgrade quality, allowing additional revenue to be retained as economic rent rather than translated into educational investment. Lower-market-share colleges, by contrast, may face stronger pressure to respond on quality to attract students displaced by net price increases elsewhere.

The resulting challenge for regulators is to balance affordability and equity goals with quality and competition concerns. Effective policies should anticipate that colleges will respond strategically, leveraging their existing market power, to the incentives embedded in any price-setting rule.

Questions and Approach:

The paper asks three interlinked questions:

1. Enrollment and access: How did tuition-price increases alter overall enrollment patterns and cohorts' caste composition?
2. Institutional incentives: When regulated prices rise, do colleges pass through the extra revenue into educational quality (e.g., teacher compensation)? Does this depend on pre-policy market power (proxied by pre-period enrollment share)?
3. Welfare consequences: Who gains and who loses once we account for students' preferences, price changes, and quality responses?

On the demand side, the analysis uses administrative records from the centralized

test between 2015–16 and 2020–21 that include student demographics, entrance exam scores, submitted rank-ordered program preference lists, assignment outcomes, enrollment decisions, and realized out-of-pocket payments. On the supply side, it combines the state government’s college-specific tuition orders with AISHE, NIRF, AICTE¹ records, and college financial statements. These sources are used to build a 2017–18 to 2020–21 panel of college quality and infrastructure measures, with *salary per teacher* as the primary measure of quality.

Methodologically, the paper uses an event-study difference-in-differences design that contrasts colleges with larger versus smaller regulated price increases over time to estimate effects on enrollment and out-of-pocket payments. It then incorporates market structure by examining results across pre-policy enrollment-share quartiles and by estimating a triple-difference specification that interacts price changes, market share, and the post period to test whether quality responses differ with market power. To quantify welfare and competitive benchmarks, it estimates a rank-ordered logit model of student choice in centralized admissions and a college quality-choice model under fixed prices, and computes welfare changes using compensating variation.

Findings:

1. Tuition price increases led to enrollment declines and altered cohort composition.

The policy increased tuition by an average of 20%, raising out-of-pocket expenses for about 80% of students (GEN and BC). SC/ST students are federally funded and continued to attend private engineering college for free during the period under study. Consistent with this incidence, enrollment declines are driven by the groups facing higher net prices, namely GEN and BC, with little change in SC/ST enrollment. By 2020–21, the average program with an above-median price change enrolled about 3 fewer BC students and 4 fewer GEN students relative to programs with below-median price changes.

Students who leave this market differ from those who remain, reshaping post-policy

¹The All India Survey of Higher Education (AISHE) and National Institute Ranking Framework (NIRF) are datasets collected by the Ministry of Education in India. All India Council for Technical Education (AICTE) also maintains records of college-level variables for standard approval procedures.

cohort composition. GEN students are typically the wealthiest and highest-ability, and the post-policy decline in GEN enrollment is concentrated among top achievers, contributing to lower average peer quality and increased segregation in programs with larger price increases. BC students are, on average, wealthier than SC/ST but still relatively poor and affirmative-action eligible, and their response reflects both higher out-of-pocket costs and constrained outside options, since leaving the state can mean losing subsidy eligibility and affirmative-action status.

Given the demographics of students who leave, colleges with greater market share experienced a sharp decline in average incoming student quality coupled with increasingly segregated cohorts, whereas low market-share colleges experienced some enrollment gains driven by poorer students.

2. Market power dictates the “Price-to-Quality” passthrough.

The study finds a stark divergence in institutional quality response based on pre-policy market share.

- High Market-Share Colleges (Top Quartiles): These institutions leveraged their brand inelasticity to pass through a 27% price increase while simultaneously reducing quality investments (e.g., hiring fewer PhD faculty and relying on less experienced staff).
- Low Market-Share Colleges (Bottom Quartiles): Facing more elastic demand, these colleges were incentivized to compete; they increased quality (measured by teacher salary and infrastructure) by 12–13% to attract students.
- The “Quality Markdown” Effect: Structural models indicate that in a price-regulated world, profit-maximizing colleges are incentivized to leverage their market power to lower educational quality below a competitive benchmark. These effects play out in theory and in practice.

3. The policy caused an overall welfare decline driven by the negative “price effect”.

Welfare estimates (compensating variation) show that the BC and GEN groups experienced net welfare losses of ₹220 million and ₹196 million, respectively. While SC/ST students saw a marginal welfare gain (₹12 million) due to improved relative access and quality improvements, the aggregate effect on the system was negative.

Policy Implications:

For India

1. **Coordinate price fixation with subsidy design:** When regulated prices are fixed at higher levels while subsidies remain flat, the policy mechanically raises out-of-pocket costs for the majority of students. A basic safeguard is to index subsidies to regulated prices, or to update subsidy amounts on the same schedule as price fixation so that “affordability” does not erode by construction.
2. **Link approved price increases to verifiable quality investment:** If the state is fixing higher prices, it can also specify what qualifies as acceptable use of the additional revenue. Approvals can be conditioned on audited, trackable inputs such as teacher compensation, faculty qualifications, and instructional capacity. This shifts the policy from allowing higher prices to requiring quality improvements that are observable and enforceable. Faculty wage bills account for anywhere between 60-80%+ of a college’s total outlay (in this market) so ensuring quality standards are met with regard to faculty hiring and pay would be an ideal starting point.
3. **Regulate with market structure in mind:** Uniform rules can have non-uniform effects when colleges differ in market power. Dominant colleges may be able to sustain demand without upgrading quality, while fringe colleges face stronger pressure to compete. A practical response is tiered oversight, such as stricter quality conditions, tighter monitoring, or slower permitted increases for consistently high market-share institutions.
4. **Improve net-price transparency at the point of choice:** Because students submit preferences after seeing posted regulated prices, small differences in information and framing can drive sorting. Publishing a standardized “net price by caste category” alongside quality indicators could make the admissions process more legible and reduce distortions that come from opaque pricing and uneven information.

For International Context

1. **Beware of “one-size-fits-all” regulation:** Similar challenges face countries with mixed public–private systems such as: Brazil, Kenya, and Mexico, where price controls or subsidies risk entrenching market leaders. In centralized or highly reg-

ulated systems, administered prices affect who applies, who enrolls, and where students sort. Price regulation should be designed as part of overall market design, not as a standalone consumer-protection tool. Regulatory design should account for market power heterogeneity across institutions.

2. **Expect endogenous institutional responses and design for them:** Policies that change regulated prices alter colleges' incentives. Without explicit quality requirements, higher regulated prices can raise revenues without improving educational inputs. Rules should specify the accountability mechanism, not just the price schedule.
3. **Target policy instruments to clearly defined objectives:** In developing countries, regulators are effectively choosing how to trade off three margins: access (net prices students face), quality (inputs colleges can finance), and fiscal burden (who pays). Keeping administered prices low can protect enrollment but may leave colleges without the resources to maintain staffing and instructional quality. Allowing higher administered prices can expand colleges' financing capacity, but if subsidies are not adjusted it raises net prices for price-exposed students and can reduce access and increase stratification. A coherent policy therefore pairs instruments with objectives: use net-price support (indexed subsidies or targeted aid) when the goal is access; use quality-linked approvals and audits when the goal is quality; and make the financing incidence explicit (state vs households vs cross-subsidies) to avoid shifting costs onto the groups policy is meant to protect.

Conclusion

Government-regulated tuition prices can protect affordability, but they also reshape sorting and colleges' incentives in centralized admissions markets. When price fixation raises net costs for price-exposed students and dominant colleges face weak competitive pressure to upgrade quality, the policy can increase stratification and reduce welfare. Effective regulation therefore requires aligning administered prices with subsidy policy and enforcing quality-linked accountability, especially where market power is concentrated.

[Read full study](#)

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Themes

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