State-Level Common Application Policies and College Enrollment

Convening on Direct Admissions

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Research Question

Did the adoption of a state-level common application increase FTE enrollment?

- State-level policy can be instrumental in altering students’ college-going outcomes (Delaney, 2014; Perna & Titus, 2004; St. John, Musoba, & Chung, 2004).
- We hypothesize that college enrollment will increase following the introduction of a state-wide common application system.

Recent common application adopters include Idaho, Iowa, and South Dakota in 2017, with plans for future common applications in Illinois, Colorado, Montana, and Tennessee. We focus on the three oldest state-level common applications.

State	Year	Name	Treated
California	2001	UC Common Application	All UC Campuses (n=9)
Texas	1997	Apply Texas	All TX Public + Some CCs and Privates (n=57)
Wisconsin	1997	Apply Wisconsin	All UW Campuses (n=24)

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Barriers to College Admission

- A myriad of factors contribute to unequal college enrollment and attainment rates, including information constraints (Bound et al., 2010; Long & Riley, 2007; Page & Scott-Clayton, 2015).
- The current college admissions process disadvantages many students—particularly those who are from low-income families (Hoxby & Avery, 2013).
- Many students face “frictions” when applying to college given multiple applications, deadlines, fees, and requirements (Knight & Schiff, 2019).
- Simplifying the admission process (or reducing related barriers) benefits students by increasing college applications and attendance at selective institutions (Hoxby & Turner, 2013; Dynarski et al., 2019).
- A centralized college application may represent a further simplification to increase application and enrollment behaviors.

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Common Applications

- Allow students to use a single application to apply to multiple institutions—simplifying the college-going process by making an application easier, faster, and potentially cheaper.

- Conceptually, this removes a search barrier for students to consider and enroll in college (e.g., Avery & Kane, 2004; DesJardins et al., 2006; Perna, 2006).

- Prior work suggests campus adoptions of the private *Common Application* increased applications and enrollment, and attracted high-achieving and out-of-state students (Knight & Schiff, 2019; Liu et al., 2007).

- No research to date has considered the effect of broad-based, state-level common applications on application behaviors, enrollment, or college choice.

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Methods

Data

- SHEEO (SHEF), supplemented with data from ACS, BLS, Council of State Governments, and the Income Inequality Project
- State-level panel covering academic years 1986-87 through 2015-16
- Adjusted to Consumer Price Index (by respective panel)
- Excludes Nebraska (unicameral)

Methodological Approaches

- Consider a state treated given presence of state-level, multi-college common application
- Employ complementary pre/post comparison designs
- Difference-in-Differences (DID)
    - Models by state, given variation in treatment timing
    - 11-year panels: 6 pre, 1 implementation + 4 post years
        - For TX and WI, 1991-92 to 2001-02; for California, 1995-96 to 2005-06
- Generalized synthetic control method (GSCM)
    - Entire sample over full panel

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DID Strategy

$$\text{FTE}_{st} = \alpha_0 + \beta(\text{Treat} \times \text{Post})_{st} + \gamma\mathbf{X}_{st} + \lambda_s + \sigma_t + \varepsilon_{st}$$

- FTE_{st} is public FTE enrollment for state s in year t.
- β is the coefficient of interest, estimated from $(\text{Treat} \times \text{Post})_{st}$ and taking the value 1 for states with a common application after adoption.
- $\mathbf{X}_{st}$ is a vector of time-variant state controls predictive of enrollment: Gini Coefficient, Unemployment Rate, HS Attainment, BA Attainment, Governor's Party, Legislative Party Proportions (House and Senate), State Appropriations, and Net Tuition/Fee Revenue.
- Estimation conditioned upon state (λ_s) and year (σ_t) fixed effects.

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DID Results

	California	Texas	Wisconsin
Common Application	**72,125***** (8,104)	**24,730*** (9,660)	**7,967***** (2,010)
States	47	48	48
Years	1995-2005	1991-2001	1991-2001
n	517	528	528
Controls	Yes	Yes	Yes
State and Year FE	Yes	Yes	Yes

1. + $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$.
2. All models include state and year fixed effects.
3. Heteroscedastic robust standard errors, clustered at state level (in parentheses).
4. Controls: Gini Coefficient, Unemployment Rate (+), HS Attainment, BA Attainment, Governor's Party, Legislative Party Proportions (House (+) and Senate), State Appropriations (+), and Net Tuition/Fee Revenue (±).
5. All panels exclude Nebraska (unicameral); CA excludes TX and WI (prior state-level common applications); TX and WI exclude one another.
6. Counterfactual: All other states.

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GSCM Strategy

- Goal is to estimate $\beta = \overline{\mathrm{FTE}}_{Treat=1}^{CommonApp} - \widehat{\mathrm{FTE}}_{Treat=0}^{CommonApp}$, but $\widehat{\mathrm{FTE}}_{Treat=0}^{CommonApp}$ is unobservable in the potential-outcomes framework.

- Synthetic control estimates optimal weights w_s^* such that $\overline{\mathrm{FTE}}_{t=0}^{CommonApp} \approx \sum w_s^* \, \overline{\mathrm{FTE}}_{t=0}^{Control}$ in the pre-treatment period ($t = 0$).
  - Weights derived from prediction of FTE_{st} given $\mathbf{X}_{st}$ in the pre-treatment period, making $\overline{\mathrm{FTE}}_{t=0}^{CommonApp} - \sum w_s^* \, \overline{\mathrm{FTE}}_{t=0}^{Control}$ close to 0.
  - Therefore, $\sum w_s^* \, \overline{\mathrm{FTE}}^{Control}$ becomes a suitable counterfactual.

- Then $\beta = \overline{\mathrm{FTE}}_{t=1}^{CommonApp} - \sum w_s^* \, \overline{\mathrm{FTE}}_{t=1}^{Control}$ in the post-treatment period ($t = 1$), taken as the average outcome difference per year between Treatment and Control groups.

- Importantly, allows for variation in treatment timing with multiple treatment units (Krief et al., 2016; Powell, 2018; Xu & Liu, 2018).

- See Abadie et al., 2010; Cunningham, 2018; Rubin & González Canché, 2019 for further detail.

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GSCM Results

	GSCM
Common Application	**64,888*****
	(16,719)
States	49
Years	1986-2015
n	1,470
Controls	Yes
State and Year FE	Yes

1. + $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$.
2. Model includes state and year fixed effects.
3. Standard errors reported in parentheses.
4. Controls: Gini Coefficient, Unemployment Rate (+), HS Attainment, BA Attainment, Governor's Party, Legislative Party Proportions (House and Senate), State Appropriations (+), and Net Tuition/Fee Revenue (+).
5. Panel excludes Nebraska (unicameral).

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Summary of Research

Findings

- Adoption of a state-level common application is positively related to increased FTE enrollment (65,000 students, 9.6%) at public institutions.

Future Research

- Estimates likely *downwardly* biased given not all public colleges participate.
  - With institution-level data, we are exploring application behaviors and enrollment outcomes across student dimensions (ACT/SAT scores, income, race, residency), institutional types, and application designs (i.e., fee-free, supplemental questions).
- Student-level data could explore effects on application behavior, college choice, enrollment, and match.

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Preview: Institution-Level Models

$$\log(y_{\text{it}}) = \alpha_0 + \beta(\text{Treat} \times \text{Post})_{it} + \lambda_i + \sigma_t + \varepsilon_{it}$$

Common Application	CA (UC)	TX (Pooled)	TX (2YR)	TX (4YR)	WI (UW)
FT FT DS Students	1.09 (0.056)	1.09* (0.04)	1.15* (0.05)	0.96 (0.06)	1.15** (0.05)
FTE Enrollment	1.09+ (0.05)	1.04* (0.02)	1.04+ (0.02)	1.03 (0.04)	1.02+ (0.01)
Institutions	446	1,302	833	469	459
Years	1996-2006	1992-2002	1992-2002	1992-2002	1992-2002
n	4,906	14,322	9,163	5,159	5,049
Controls	No	No	No	No	No
College and Year FE	Yes	Yes	Yes	Yes	Yes

1. + $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$.
2. All models include college and year fixed effects.
3. Table reports exp(β) and heteroscedastic robust standard errors, clustered at college level (in parentheses).
4. All panels exclude Nebraska (unicameral); CA excludes TX and WI (prior state-level common applications); TX and WI exclude one another.
5. National counterfactual: CA (all other 4YRs); TX Pooled (all other 2 and 4 YRs); TX 2 YR (all other 2YRs); TX 4YR (all other 4 YRs); WI (all other 4 YRs).

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Policy Recommendations

- The introduction of a common application has a positive effect on enrollment.
  - Promising, low-cost, and viable mechanism to increase enrollment.
- Administrative/technical intervention that can be universally implemented to uniformly benefit students.

States should explore policies related to direct admissions systems (*e.g.*, common applications), regardless of their decision to/to not adopt direct admissions.

States should partner with researchers and policy organizations in the design and evaluation of direct admissions, common application, and related policies.

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