

Community College Governance Structures & State Appropriations for Student Financial Aid

Lindsey Hammond

Sean Baser

Alex Cassell

Institute of Higher Education | University of Georgia

June 7, 2019

36th Annual SFARN Conference

Presentation Overview

- ☐ **Background**
- ☐ **Literature Review**
- ☐ **Conceptual Framework**
- ☐ **Research Question**
- ☐ **Methodology**
- ☐ **Findings**
- ☐ **Implications**

Purpose

To explore the broader governance contexts in which community colleges are embedded to understand their relationship to state appropriations and financial aid

Community Colleges in HE

- Beacons of access for historically underserved & post-traditional students
- Serve the local economy
- Leveraged to achieve state & local attainment and economic objectives

Literature Review

HE Governance Reforms

- Four-year sector has fluctuated in centralization
- CCs steady shift toward centralization (Tollefson, 2009; Thelin, 2014)

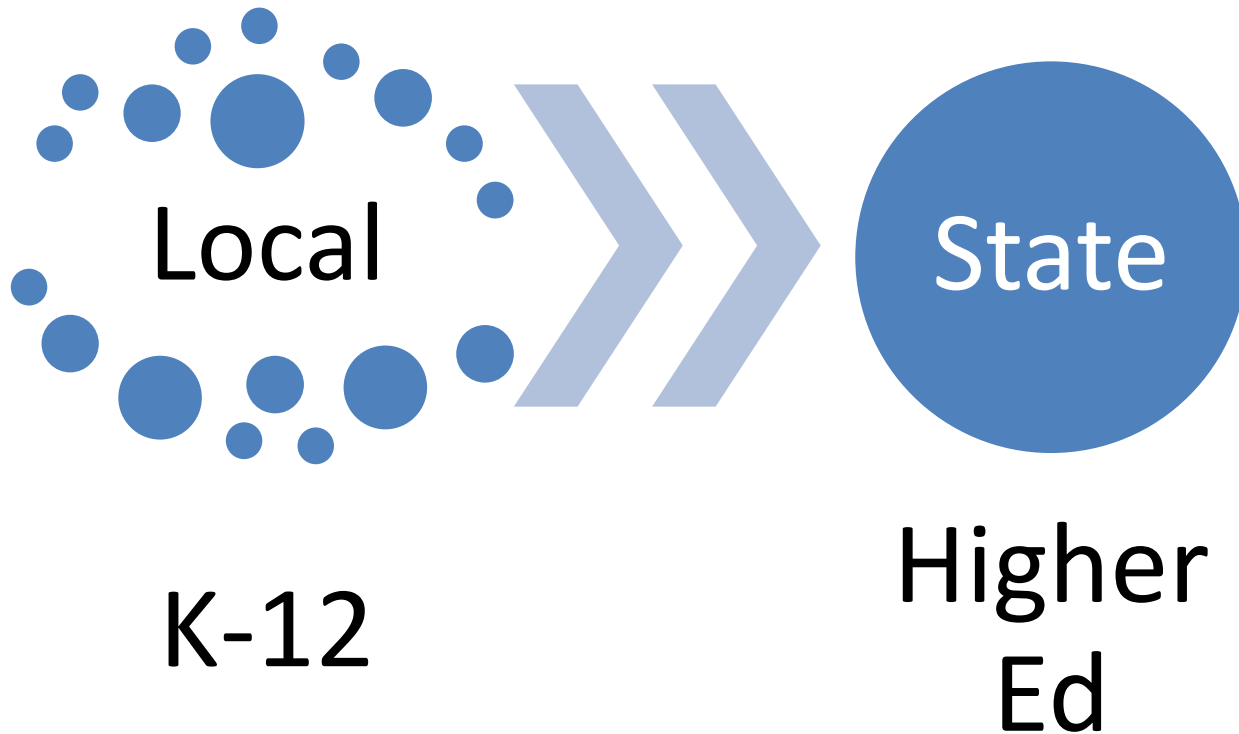
Governance Structures & HE Finance

- Governance structures influence financial policy (Tandberg, 2013)
- Most studies are positioned in 4-year context (Hearn & Griswold, 1994; Hearn & McLendon, 2012; McLendon, Tandberg, & Hillman, 2014; Tandberg & Ness, 2011; Tandberg, 2013; Zumeta, 1992, 1996)
- CC scholars in the 90s focused on relationship between state appropriations and financial aid (Fonte, 1993; Garrett, 1992-1993; Ingram & Tollefson, 1996)

Literature Review

Community College Context

Literature Review



Literature Review

Table 1. Document analysis results—State-level community college governance structures (2011–2014).

“Rational” Model: coordinating board for community colleges separate from K–12 & universities (23)	Community colleges same coordinating board as K–12, separate from Universities (4)	Community colleges same coordinating board as universities (12)	Coordination for community colleges under a university governing board (5)	No state coordinating board (6)
California	Alabama	Arkansas	Alaska	Arizona
Colorado	Iowa*	Idaho	Hawaii	Indiana
Connecticut	Michigan*	Illinois	Maine	New Jersey
Delaware	South Dakota	Kansas	Minnesota	New Mexico
Florida		Missouri	New York	Pennsylvania
Georgia		Montana		Washington
Kentucky		Nebraska*		
Louisiana		Nevada		
Maryland		North Dakota		
Massachusetts		Ohio		
Mississippi**		Oklahoma*		
New Hampshire		Utah		
North Carolina				
Oregon				
Rhode Island*				
South Carolina				
Tennessee				
Texas				
Vermont				
Virginia				
West Virginia				
Wisconsin				
Wyoming*				

*State where community college’s governing board acts as a coordinating board. Wisconsin has the U-Wisconsin Centers and an area and vocational technical system.

**Mississippi: has an independent agency.

Literature Review

Table 2. Survey results—State-level community college governance structures by state (2015).

Coordinating/governing board for CCs separate from K–12 & univ.(19)	Same coordinating/governing board as K–12, but separate from univ. (2)	Same coordinating/governing board as univ. (17)	Coordination for CC governance falls beneath a univ. coordinating/governing board (3)	No state-level coordinating or governing board (4)
Alabama	Iowa	Arkansas	Idaho	Maryland
California	Florida	Connecticut	Indiana	Michigan
Colorado		Hawaii	Montana	Pennsylvania
Delaware		Kansas		South Dakota
Georgia		Massachusetts		
Illinois		Minnesota		
Kentucky		Missouri		
Louisiana		Nebraska		
Maine		Nevada		
Mississippi		New Mexico		
New Hampshire		Ohio		
New Jersey		Oklahoma		
North Carolina		Oregon		
South Carolina		Rhode Island		
Virginia		Tennessee		
Washington		Texas		
West Virginia		Utah		
Wisconsin				
Wyoming				

Literature Review

Table 3. Type of community college coordinating/governing body by state.

State governing board (14)	State coordinating council (1)	Association of community college presidents (6)	Association of community college trustees (3) (3)	Combination of any of the above (6)	Other, please specify (15)
Alabama	West Virginia	Arkansas	Nebraska	California	Delaware
Colorado		Idaho	Tennessee	Georgia	Florida
Connecticut		Massachusetts	Wyoming	Kentucky	Illinois
Hawaii		Maryland		Ohio	Iowa
Indiana		Missouri		Oregon	Kansas
Louisiana		Pennsylvania		South Carolina	Michigan
Maine					Minnesota
Nevada					Mississippi
New Hampshire					Montana
North Carolina					New Jersey
Rhode Island					New Mexico
Utah					Oklahoma
Virginia					South Dakota
Washington					Texas
					Wisconsin

Literature Review

Table 5.1. Percentage of Income from Various Sources for Public Two-Year Colleges, 1918–2010

Source	1918 ¹	1930 ¹	1942 ¹	1950 ¹	1959	1975	1980	1990	2000	2010
Tuition and fees	6	14	11	9	11	15	15	18	20	16
Federal funds	0	0	2	1	1	8	5	5	6	23 ²
State funds	0	0	28	26	29	45	60	48	45	30
Local funds	94	85	57	49	44	24	13	18	20	18
Private gifts and grants	0		0	0	0	1	1	1	1	1
Sales and services	N.A.	N.A.	N.A.	N.A.	12	6	3	7	5	4
Other	0	2	2	2	2	1	3	3	4	8

¹ Includes local junior colleges only.

² Eighty-two percent of federal funds to community colleges in 2010 consisted of nonrecurring, nonoperating economic stimulus grants. The remainder (4 percent of total revenues) came in the form of traditional federal grants, contracts, and appropriations.

Sources: Starrak and Hughes, 1954; Medsker and Tillery, 1971; NCES *Digests*, 1990–2011.

Conceptual Framework – Policy Ecology

Socioeconomic Context

Demographic: Population size, age group distribution, growth rate, density, % of color, # of cities over one million population, etc.

Educational: educational attainment levels, postsecondary enrollment rate, etc.

Economic: gross state product (GSP), GSP per capita, GSP per capita growth, median per-capita income, unemployment rate, etc.

Organizational and Policy Context

Organizational Ecology: # and the proportional distribution of institutions by control and level, student migration patterns, # and strength of research institutions in the state

Agency Analytic Capacity: # and nature of analytic staff researchers, financial analytics, and resources.

Policy Postures: Nature of postsecondary funding, tuition, and enrollment policies in the state

State Policy Decisions in Postsecondary Education

Politico-Institutional Context

Governance Arrangements: Governing Board, Planning Agency, etc.

Appointment Characteristics for State Agency Head: Appointed by governor, board, or legislature, term stagger, term length

Political Ideology: state ideology tendencies

Gubernatorial Characteristics: alignment with legislature, constitutional authority

Legislative Characteristics: legislative professionalism, session timing, etc.

Partisanship: legislative/gubernatorial party affiliations and strength, electoral cycle, etc.

Interest group Climate: Interest group density, strength, coordination, etc.

In-state intermediary organizations: Research and advocacy entities located in the state

External Context

Policy/Practice Emulation and Avoidance: states may learn from other states' experiences with policy/practice choices, thus informing and ideally improving their policy choices

State competitors: Other states, both current peers and national peers, may make moves that compel states to act in policy arenas

State Networking: Through regional and national interstate associations, state leaders establish contacts and relationships that can smooth collaboration and improve outcomes

Federal Influences: Federal policies shape decisions on student aid, research, and workplace operations, and SHEEOs may be responsible for interpreting and implementing federal initiatives, rules and regulations

National Intermediary Organizations: SHEEOs and other state leaders may be lobbied and influenced through contacts with national intermediary foundations and initiatives (e.g., the Lumina Foundation, the Gates Foundation, and the Complete College America)

Conceptual Framework – Policy Ecology

Socioeconomic Context

- The socioeconomic context of a states is a driver of state higher education decision-making and policymaking.
 - **Our measures:** Income Inequality, State Population, Unemployment Rate

Organizational & Policy Context

- Wide variation exists among the states in the organization, governance, and finance of higher education. Composed of three components: the organizational ecology, agency analytic capacity, and policy postures.
 - **Our measures:** Share of students in CCs, state appropriations per FTE, Grant Aid, Tuition & Fees at two- and four-year colleges

Conceptual Framework – Policy Ecology

Politico-institutional Context

- The political conditions and institutional arrangements of a state influence higher education decisions.
 - **Our measures:** State citizen ideology, Governor Power, Percent of Legislature identified as Democrat

External Context

- States and institutions are often impacted by external factors outside their border. Diffusion from other states, intermediary organizations, or intervention from the federal government
 - **Our measures:** None. Focus is on the internal characteristics of the state.*

Research Questions

The research question driving this analysis is:

1. What, if any, relationship exists between community college governance structures and allocation of merit aid, need-based aid, and state appropriations for higher education writ large?

Research Method

Data Collection

- **Panel Dataset:** 2004-2015
- **Data:** IPEDS, NASSGAP, SHEF, WICHE, U.S. Census

Community College Governance Variable

- Dichotomous variables by governance type (Katsinas, 1996; Fletcher & Friedel, 2016; Tollefson, Garrett, and Ingram, 1999)
- Utilized ECS and state websites to identify the year and type of change
- Vetted the IV against internet searches
- Note: this schema does not include measures to compare the relative power of an organizing body (i.e. coordinating versus governing board powers)

Research Method

2015 taxonomy of community college governance structures

Coordinating/ governing board for CCs separate from K-12 & 4- year. (19)	Same coordinating/gove rning board as K- 12 but separate from 4-year (2)	Same coordinating/gove rning board as 4- year (22)	Coordination for CC governance falls under a P-20 board (1)	Coordination for CC governance falls beneath a 4- year coordinating/gove rning board (3)	No state-level coordinating or governing board (3)
Alabama California Colorado Delaware Georgia Illinois Kentucky Louisiana Maine Mississippi New Hampshire New Jersey North Carolina South Carolina Virginia Washington West Virginia Wisconsin Wyoming	Iowa Florida	Arkansas Connecticut Indiana Kansas Massachusetts Maryland Michigan Minnesota Missouri Montana Nebraska Nevada New Mexico North Dakota Ohio Oklahoma Oregon Rhode Island Tennessee Texas Utah Vermont	Idaho	Alaska Hawaii New York	Arizona Pennsylvania South Dakota

Research Method

Data Analysis

- Two-Way Fixed Effects Techniques
- Best accounts for panel structure of data (Hausman Test > RE & F-test > one-way FE)
- 1) Two-Way FE
- 2) Two-Way FE w/ Governance Interaction Terms
- 3) Split Samples

Research Method

Data Analysis

$$(1) \textit{AppropsFTE}_{it} = \alpha + \beta_1 CCg_{it} + \beta_2 PEC_{it} + \mu_i + \delta_i + \eta_t + \varepsilon_{it}$$

$\textit{AppropsFTE}_{it}$:	Dollar amount of appropriations per FTE (merit, need, or all appropriations) for an individual state i in year t
β_1 :	Regression coefficients corresponding to one of the six categorical variables created to represent state governance arrangements for community colleges
β_2 :	Regression coefficients corresponding to control variables from the policy ecology framework
μ_i :	Constant for the states
δ_i :	State effects term
η :	Time effects term
ε_{it} :	A random error term for state i at time t

Research Method

Data Analysis

$$(2) \text{ AppropsFTE}_{it} = \alpha + \beta_1 CCg_{it} + \beta_2 PEC_{it} + \beta_3 CCg_{it} * PEC_{it} + \mu_i + \delta_i + \eta_t + \varepsilon_{it}$$

AppropsFTE_{it} :	Dollar amount of appropriations per FTE (merit, need, or all appropriations) for an individual state i in year t
β_1 :	Regression coefficients corresponding to one of the six categorical variables created to represent state governance arrangements for community colleges
β_2 :	Regression coefficients corresponding to control variables from the policy ecology framework
β_3 :	Regression coefficients corresponding to interaction terms between the governance variable and policy ecology controls
μ_i :	Constant for the states
δ_i :	State effects term
η :	Time effects term
ε_{it} :	A random error term for state i at time t

Table 1. Outcome Variable: **Need-based Aid per FTE**

Variable Name	(1)	(2)	(3)		(4)		(5)	(6)
	Centralized CC Governance Separate from K-12 & 4-year	No Centralized CC Governance	**Two-way Fixed Effects Models with Interaction Terms for Centralized CC Governance Separate from K-12 & 4-year		Two-way Fixed Effects Models with Interaction Terms for No Centralized CC Governance		Only Includes States with Centralized CC Governance	Only Includes States with No Centralized CC Governance
			Main Effects	Interaction Effects	Main Effects	Interaction Effects		
<i>Independent Variable</i>								
CC Governance	-175.627** (53.257)	98.040*** (25.735)		-16.800 (318.145)		2361.347*** (608.894)	0.000 (.)	0.000 (.)
<i>Socioeconomic Context</i>								
Income inequality measure (Gini Coefficient)	3.437 (3.283)	3.355 (3.604)	2.935 (3.318)	0.000 (.)	2.79 (3.632)	0.356 (5.587)	3.752 (6.212)	-0.412 (6.164)
State population (logged)	0.000*** (0.000)	0.000*** (0.000)	0.000*** (0.000)	0 (0.000)	0.000*** (0.000)	0 (0.000)	0.000+ (0.000)	0.000 (0.000)
Unemployment Rate	17.949* (6.795)	18.496* (7.105)	12.123+ (6.240)	-16.961** (6.211)	19.056* (7.286)	0.758 (6.591)	11.057 (10.859)	36.629 (20.125)
<i>Organizational & Policy Context</i>								
Share of Students in CCs	-31.041 (216.180)	-6.882 (216.592)	169.512 (152.941)	765.728 (684.863)	-27.416 (231.746)	502.422 (474.156)	-910.239 (780.097)	-2.1e+03** (347.180)
State appropriations per FTE	0.000 (0.008)	0.002 (0.009)	0.002 (0.009)	-0.032* (0.012)	0.002 (0.009)	0.004 (0.009)	-0.003 (0.015)	-0.051 (0.039)
Grant Aid (Sum)	-0.000** (0.000)	-0.000** (0.000)	-0.000* (0.000)	-0.000* (0.000)	-0.000** (0.000)	0 (0.000)	-0.000 (0.000)	-0.000 (0.000)
Tuition & Fees at Four-years (Sum)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000* (0.000)
Tuition & Fees at Two-years (Sum)	-0.000 (0.000)	-0.000 (0.000)	-0.001** (0.000)	-0.001 (0.000)	-0.000 (0.000)	0.001 (0.001)	0.000 (0.001)	0.002+ (0.001)
<i>Politico-institutional Context</i>								
State Citizen Ideology	0.02 (0.384)	0.027 (0.381)	0.127 (0.447)	-0.671 (0.728)	0.076 (0.417)	-0.455 (0.321)	-0.263 (0.501)	-0.518+ (0.199)
Governor Power	-16.285 (84.380)	-1.002 (98.767)	-51.544 (75.037)	-68.024 (159.107)	-0.387 (104.565)	213.422+ (110.341)	38.126 (165.341)	76.077 (85.470)
Percent of Legislature (Democrat)	-0.707 (16.729)	0.109 (16.855)	32.668 (23.212)	96.919 (68.219)	0.221 (17.449)	88.151+ (45.706)	-8.902 (18.898)	-68.616 (29.586)
R2	0.035	0.037		0.031		0.017	0.001	0.392
F-Test				0.000		0.848		
Sample Size	600	600	600		600		231	40

Notes. Standard errors in Standard errors in parentheses
+ p<.10, * p<.05, ** p<.01, *** p<.001
All models contain fixed effects for year and state.
Models (5) and (6) are split based on whether or not there is any sort of centralizing state level structure or not to further explore the relationships between the policy ecology variables and appropriations without the moderating governance variable in light of the significance discovered in Models (2) and (4).

Table 2. Outcome Variable: **Merit-based Aid per FTE**

Variable Name	(1)	(2)	(3)		(4)		(5)	(6)
	Centralized CC Governance Separate from K-12 & 4-year	No Centralized CC Governance	**Two-way Fixed Effects Models with Interaction Terms for Centralized CC Governance Separate from K-12 & 4-year		Two-way Fixed Effects Models with Interaction Terms for No Centralized CC Governance		Only Includes States with Centralized CC Governance	Only Includes States with No Centralized CC Governance
			Main Effects	Interaction Effects	Main Effects	Interaction Effects		
<i>Independent Variable</i>								
CC Governance	12.153 (41.761)	12.153 (41.761)	88.645 (245.858)		265.698 (779.171)		0.000 (.)	0.000 (.)
<i>Socioeconomic Context</i>								
Income inequality measure (Gini Coefficient)	6.137 (5.317)	6.137 (5.317)	5.826 (5.232)	0.000 (0.000)	6.471 (5.696)	0.356 (5.587)	4.345 (3.581)	1.463 (5.863)
State population (logged)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	0.000 (0.000)
Unemployment Rate	14.086** (4.858)	14.086** (4.858)	22.609** (7.322)	-16.961** (6.211)	15.006** (5.067)	0.758 (6.591)	3.06 (7.727)	-9.82 (4.233)
<i>Organizational & Policy Context</i>								
Share of Students in CCs	319.672 (369.813)	319.672 (369.813)	257.185 (355.509)	765.728 (684.863)	308.33 (375.132)	502.422 (474.156)	1569.389* (700.097)	-335.26 (163.402)
State appropriations per FTE	-0.005 (0.010)	-0.005 (0.010)	0.006 (0.009)	-0.032* (0.012)	-0.006 (0.011)	0.004 (0.009)	-0.032* (0.015)	0.012 (0.011)
Grant Aid (Sum)	-0.000 (0.000)	-0.000 (0.000)	-0.000+ (0.000)	0 (0.000)	-0.000 (0.000)	0 (0.000)	0.000 (0.000)	-0.000 (0.000)
Tuition & Fees at Four-years (Sum)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)
Tuition & Fees at Two-years (Sum)	0.000 (0.000)	0.000 (0.000)	0.000 (0.001)	-0.001 (0.001)	0.000 (0.000)	0.001 (0.001)	-0.000 (0.000)	-0.000 (0.001)
<i>Politico-institutional Context</i>								
State Citizen Ideology	0.401 (0.402)	0.401 (0.402)	0.626 (0.602)	-0.671 (0.728)	0.448 (0.428)	-0.455 (0.321)	0.01 (0.381)	-0.569 (0.277)
Governor Power	-69.182 (73.222)	-69.182 (73.222)	-69.924 (78.829)	-68.024 (159.107)	-68.915 (78.114)	213.422+ (110.341)	-65.723 (124.321)	252.063 (167.430)
Percent of Legislature (Democrat)	-29.105 (26.509)	-29.105 (26.509)	-74.049 (59.673)	96.919 (68.219)	-30.746 (27.061)	88.151+ (45.706)	4.806 (17.891)	17.866 (19.613)
R2	0.008	0.008		0.000		0.002	0.017	0.017
F-Test				0.001		0.9998		
Sample Size	600	600		600		600	231	40

Notes. Standard errors in Standard errors in parentheses
+ p<.10, * p<.05, ** p<.01, *** p<.001
All models contain fixed effects for year and state.
Models (5) and (6) are split based on whether or not there is any sort of centralizing state level structure or not to further explore the relationships between the policy ecology variables and appropriations without the moderating governance variable in light of the significance discovered in Models (2) and (4).

Table 3. Outcome Variable: State Appropriations per FTE

	(1)	(2)	(3)		(4)		(5)	(6)
	Centralized CC Governance Separate from K-12 & 4-year	No Centralized CC Governance	**Two-way Fixed Effects Models with Interaction Terms for Centralized CC Governance Separate from K-12 & 4-year		Two-way Fixed Effects Models with Interaction Terms for No Centralized CC Governance		Only Includes States with Centralized CC Governance	Only Includes States with No Centralized CC Governance
Variable Name								
Independent Variable								
Coordinating/Governing Board for CCs separate from K-12 & 4-year	-423.007 (318.352)	57.419 (537.537)	-6.9e+03*** (1,680.494)		-1.0e+04** (3,411.546)			
Socioeconomic Context								
Income inequality (Gini Coefficient)	10.94 (25.146)	10.108 (25.751)	1.204 (20.561)	0.905*** (0.041)	12.095 (28.911)	30.525 (53.347)	47.767 61.093	49.72255 (49.722)
State population (logged)	-0.000 (0.000)	-0.000 (0.000)	0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	0.000 (0.000)	-.0004048 0.000	-0.00074 (0.000)
Unemployment Rate	-195.838** (61.684)	-196.732** (63.229)	-154.658* (64.880)	10.773 (23.293)	-178.137** (65.092)	-48.414 (48.367)	-82.76249 (101.735)	113.5527* (24.306)
Organizational & Policy Context								
Share of Students in CCs	-2.70E+03 (2,460.096)	-2.60E+03 (2,416.274)	-2.70E+03 (2,986.109)	5328.328+ (3,098.040)	-3.10E+03 (2,364.770)	8.31E+03 (5,023.711)	-8088.032 (3604.715)	7054.055 (5,442.328)
Grant Aid (Sum)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000* (0.000)	0.000 (0.000)	-0.000** (0.000)	0.000 (0.000)	0.000000717 (0.000)
Tuition & Fees at Four-years (Sum)	-0.000 (0.001)	-0.000 (0.001)	0.001 (0.001)	-0.002* (0.001)	-0.000 (0.001)	0.002* (0.001)	-0.001 (0.002)	0.000698 (0.000)
Tuition & Fees at Two-years (Sum)	-0.004* (0.002)	-0.004* (0.002)	-0.002 (0.002)	0.002 (0.003)	-0.005* (0.002)	-0.009** (0.003)	-0.007 (0.005)	-0.0041576 (0.004)
Politico-institutional Context								
State Citizen Ideology	0.528 (2.685)	0.614 (2.669)	0.813 (2.655)	-1.338 (2.355)	1.46 (2.738)	-4.392 (3.099)	2.13216 (4.952)	-2.468742 (2.665)
Governor Power	-661.872 (801.619)	-629.342 (794.306)	92.929 (551.682)	275.351 (636.451)	-857.879 (840.896)	4975.965* (2,474.346)	-2636.473 (2106.372)	1916.292 (1416.49)
Percent of Legislature (Democrat)	-117.715 (105.551)	-111.309 (104.566)	0.577 (149.587)	-102.934 (161.363)	-92.708 (98.793)	440.242 (311.924)	-140.2824 (91.403)	187.8448 (198.12)
R2	0.055	0.058		0.276		0.104	0.003	0.188
F-Test				0.000		0.000		
Sample Size	600	600		600		600	231	40

Notes. Standard errors in Standard errors in parentheses

+ $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$

All models contain fixed effects for year and state.

Models (5) and (6) are split based on whether or not there is any sort of centralizing state level structure or not to further explore the relationships between the policy ecology variables and appropriations without the moderating governance variable in light of the significance discovered in Models (2) and (4).

Findings

State Appropriations

- No clear relationship

Merit-based Aid

- No clear relationship

Need-based Aid

- Centralization – maybe decrease in need-based aid/FTE of ~ \$175
- No Governance – increase in need-based aid/FTE of ~ \$100

Implications

- Despite findings, we suggest further research is needed rather than drawing a conclusion that community college governance is not a significant boundary-spanner
- Future research should expand and explore the relationship between board power
- More work to understand relationships and networks among two-year and four-year boards and state leaders
- More longitudinal data; dynamic panel models to account for endogeneity in financial variables

Questions



References

- Allison, P. D. (2009). *Fixed effects regression models* (Vol. 160). Thousand Oaks, CA: SAGE Publications.
- Angrist, J. D., & Pischke, J.-S. (2009). *Mostly harmless econometrics: An empiricist's companion*. Princeton, NJ: Princeton University Press.
- Cohen, A. M., Brawer, F. B., & Kisker, C. B. (2013). *The American community college*. San Francisco, CA: Jossey-Bass.
- Dougherty, K. J. (1994). *The contradictory college: The conflicting origins, impacts, and futures of the community college*. Albany: State University of New York Press.
- Fletcher, J. A., & Friedel, J. N. (2017). Typology of state-level community college governance structures. *Community College Journal of Research and Practice*, 41(4-5), 311-322. doi:10.1080/10668926.2016.1251355
- Friedel, J. N., Killackey, J., Miller, E., & Katsinas, S. G. (2014). *Fifty state systems of community colleges, fourth edition (mission, governance, funding, and accountability)*. Johnson City, TN: Overmountain Press.
- Fonte, R. W. (1993). The impact of state financing and regulation on the local orientation of community colleges. *Community College Review*, 21(1), 4-14. doi:10.1177/009155219302100102
- Garrett, R. L. (1992). Degree of centralization of governance of state community college systems in the United States, 1990. *Community College Review*, 20(1), 7-13. doi:10.1177/009155219202000102
- Garrett, R. L. (1993). A profile of state community college system characteristics and their relationship to degrees of centralization. *Community College Review*, 20(5), 6-15. doi:10.1177/009155219302000502
- Hearn, J. C., & Griswold, C. P. (1994). State-level centralization and policy innovation in us postsecondary education. *Educational Evaluation and Policy Analysis*, 16(2), 161-190.
- Hearn, J. C., & McLendon, M. K. (2012). Governance research: From adolescence toward maturity. In M. Bastedo (Ed.), *The organization of higher education managing colleges for a new era* (pp. 45-85). Baltimore, MD: The John Hopkins University Press.
- Hearn, J. C., & Ness, E. C. (2017). The ecology of state-higher education policymaking in the us. In D. Palfreyman, T. Tapper, & S. Thomas (Eds.), *Towards the private funding of higher education: Ideological and political struggles* (pp. 19-47). London, UK: Routledge.
- Hillman, N. W., & Orians, E. L. (2013). Community colleges and labor market conditions: How does enrollment demand change relative to local unemployment rates? *Research in Higher Education*, 54(7), 765-780. doi:10.1007/s11162-013-9294-7
- Ingram, W. G., & Tollefson, T. A. (1996). Local autonomy is alive and well: The results of a national study on locations of effective decision-making authority in state community college systems. *Community College Journal of Research and Practice*, 20(2), 133-150. doi:10.1080/1066892960200203
- Jaquette, O., & Parra, E. (2016). The problem with the delta cost project database. *Research in Higher Education*, 57(5), 630-651. doi:10.1007/s11162-015-9399-2
- Lowry, R. C. (2001). Governmental structure, trustee selection, and public university prices and spending: Multiple means to similar ends. *American Journal of Political Science*, 45(4), 845-861. doi:10.2307/2669328
- McLendon, M. K. (2003). State governance reform of higher education: Patterns, trends, and theories of the public policy process. In J. C. Smart (Ed.), *Higher education: Handbook of theory and research* (pp. 57-143). Dordrecht: Springer Netherlands.
- McLendon, M. K., Deaton, R., & Hearn, J. C. (2007). The enactment of reforms in state governance of higher education: Testing the political instability hypothesis. *The Journal of Higher Education*, 78(6), 645-675. doi:10.1080/00221546.2007.11772075
- McLendon, M. K., & Hearn, J. C. (2007). Incorporating political indicators into comparative state study of higher education policy. In K. M. Shaw & D. E. Heller (Eds.), *State postsecondary education research: New methods to inform policy and practice* (pp. 11-36). Sterling, VA: Stylus.
- McLendon, M. K., Tandberg, D. A., & Hillman, N. W. (2014). Financing college opportunity: Factors influencing state spending on student financial aid and campus appropriations, 1990 through 2010. *The ANNALS of the American Academy of Political and Social Science*, 655(1), 143-162. doi:10.1177/0002716214540849
- Ness, E. C., Hearn, J. C., & Rubin, P. G. (2018). SHEEO and intermediary organizations. In D. A. Tandberg, B. A. Sponsler, R. W. Hanna, & J. P. Guilbeau (Eds.), *The state higher education executive officer and the public good: Developing new leadership for improved policy, practice, and research* (pp. 163-192). New York, NY: Teachers College Press.
- Tandberg, D. A. (2013). The conditioning role of state higher education governance structures. *The Journal of Higher Education*, 84(4), 506-543. doi:10.1080/00221546.2013.11777300
- Tandberg, D. A., & Ness, E. C. (2011). State capital expenditures for higher education: "Where the real politics happens". *Journal of Education Finance*, 36(4), 394-423. Retrieved from <http://www.jstor.org/stable/23018118>
- Thelin, J. R. (2014). *A history of American higher education* (Second Edition. ed.). Baltimore: Johns Hopkins University Press.
- Tollefson, T. A. (1996). *Emerging patterns in state level community college governance: A status report*. Retrieved from <https://files.eric.ed.gov/fulltext/ED437076.pdf>
- Tollefson, T. A. (2009). Community college governance, funding, and accountability: A century of issues and trends. *Community College Journal of Research and Practice*, 33(3-4), 386-402. doi:10.1080/10668920802580481
- Tollefson, T. A., & Fountain, B. E. (1992). *Forty-nine state systems*. Washington D.C.: American Association of Community Colleges.
- Willet, J. B., & Murnane, R. (2010). *Methods matter: Improving causal inference in educational and social science research*. New York, NY: Oxford University Press.
- Zumeta, W. (1992). State policies and private higher education: Policies, correlates, and linkages. *The Journal of Higher Education*, 63(4), 363-417. doi:10.2307/1982119
- Zumeta, W. (1996). Meeting the demand for higher education without breaking the bank: A framework for the design of state higher education policies for an era of increasing demand. *The Journal of Higher Education*, 67(4), 367-425. doi:10.1080/00221546.1996.11780267