A Diverse View on Board Diversity

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Why board diversity

- At the core of corporate governance, boards guide strategic direction and oversight.
- **Economic Advantage:** Diversity introduces varied perspectives, spurring innovation, and facilitating robust decision making.
- **Social Impact:** Promotes social upward mobility and equity by providing diverse role models and maximizing participation.
- **Combined Benefit:** Mirrors stakeholder diversity, fostering trust, expanding talent pools, and opening new business avenues.
- External pressure on board diversity ranges from soft targets (e.g., "The Big Three" campaigns on gender diversity on corporate boards) to law/regulation-mandated quotas (e.g., Californian gender quota law in 2018, the Nasdaq board diversity rules in 2022).

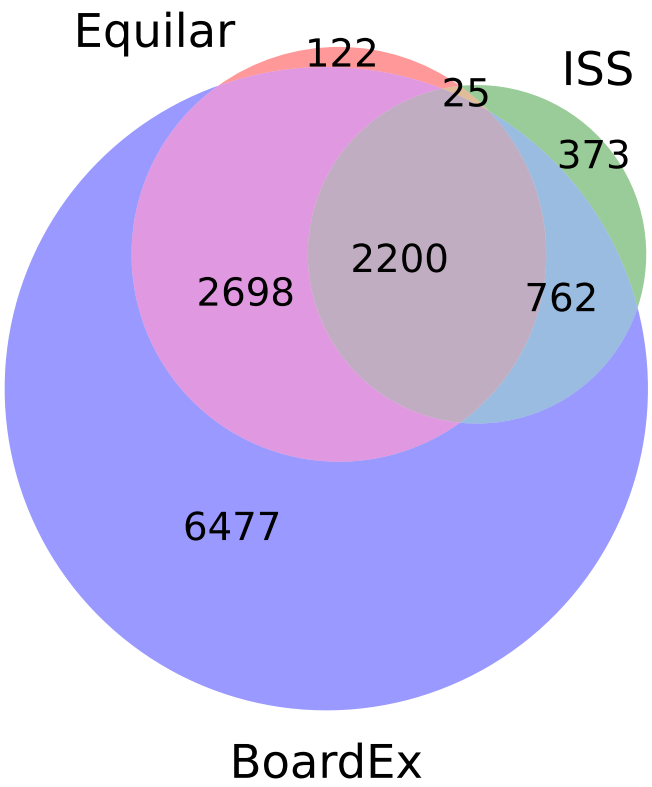
Goal of Research

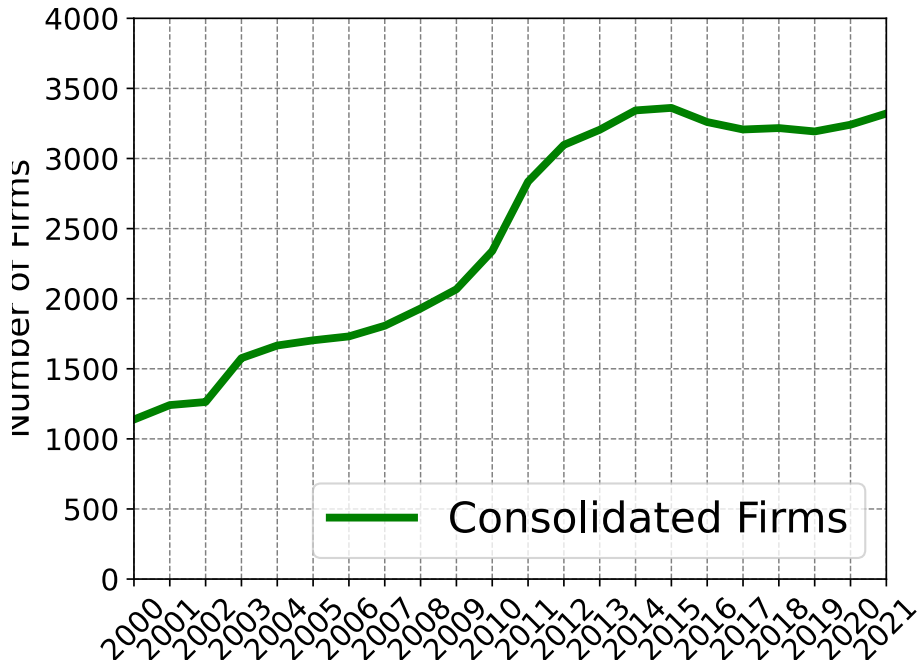
- A large and growing literature on board diversity. Existent research predominantly centers on demographic attributes, particularly gender and race/ethnicity.
- This study: Acknowledges that the concept of "diversity" is inherently diverse.
  - Presents comprehensive and granular information about multidimensional diversity by merging three leading board database, supplemented by additional information collection.
  - Assesses the complementarity and trade-offs among dimensions of diversity in terms of demographics (gender, race/ethnicity), experience, skills, and viewpoints.
- Provides one mechanism for the much-discussed issue "partisan realignment" of American business (Hersh and Shah (2023)).
- Showcases the contribution of different dimensions of board diversity in directing firms during Covid.

Data sources

- Create the most comprehensive director-level dataset to date with information filling and gap bridging in combining three leading board databases. A master database of 5,453 unique firms and 52,284 directors for 2000-2021, including 36,286 new director entries during the sample period.
- **BoardEx**: Primary database for board governance research, growing from 1,557 to 8,608 U.S. public firms. Board and individual director information, including education, achievements, and employment history.
- **BoardEdge by Equilar**: Covers 3,475 to 3,673 firms, in-depth bios for all, race/ethnicity classification for 16% of directors.
- **Institutional Shareholder Services (ISS)**: Directors from S&P 1500 firms, demographic data, including race/ethnicity for 64% of directors.

Master database: Venn diagram and coverage over time





Demographic Diversity Measures

- **Gender Diversity:** %*Female* grows from 9.2% to 26.2% during the study period. Missing data imputed via first names, pronouns, etc., resulting in complate coding.
- **Racial and Ethnic Diversity:** %*AAPI*, %*Black*, and %*Hispanic* increased from 6.6%, 1.6%, and 1.4% to 11.0%, 4.0%, and 7.2% respectively.
  - Training data is the partial information from ISS and Equilar.
  - Training algorithm based on *NamePrism* (based on names); *Ethnicolor* (pre-trained on U.S. Census data) and *DeepFace* (Google Picture API) for ethnic probabilities.
  - A machine-learning based ensemble model achieved 93% precision in out-of-sample tests.

Experience and skill diversity

- Measures constructed based on dynamic bio information from the Equilar, ISS, and SEC filings, using up-to-date natural language processing (NLP) models. *Diversity* is one minus similarity or HHI measures.
- **Experience Diversity**: Based on textual similarity among directors' bios, with context and content filtering. BERT and TF-IDF similarities average 0.47 and 0.12, with a correlation of 0.43.
- **Skill Diversity**: Mapping directors to a set of predefined executive skills (including Leadership, Law, Regulation/Government, Marketing, Finance/Accounting, Operation, Technology, and Academics) based on keywords, with a cap of two skills per director.
  - Over half possess Finance/Accounting skills, followed by Leadership expertise.
  - Skill diversity measure averages at 0.61.

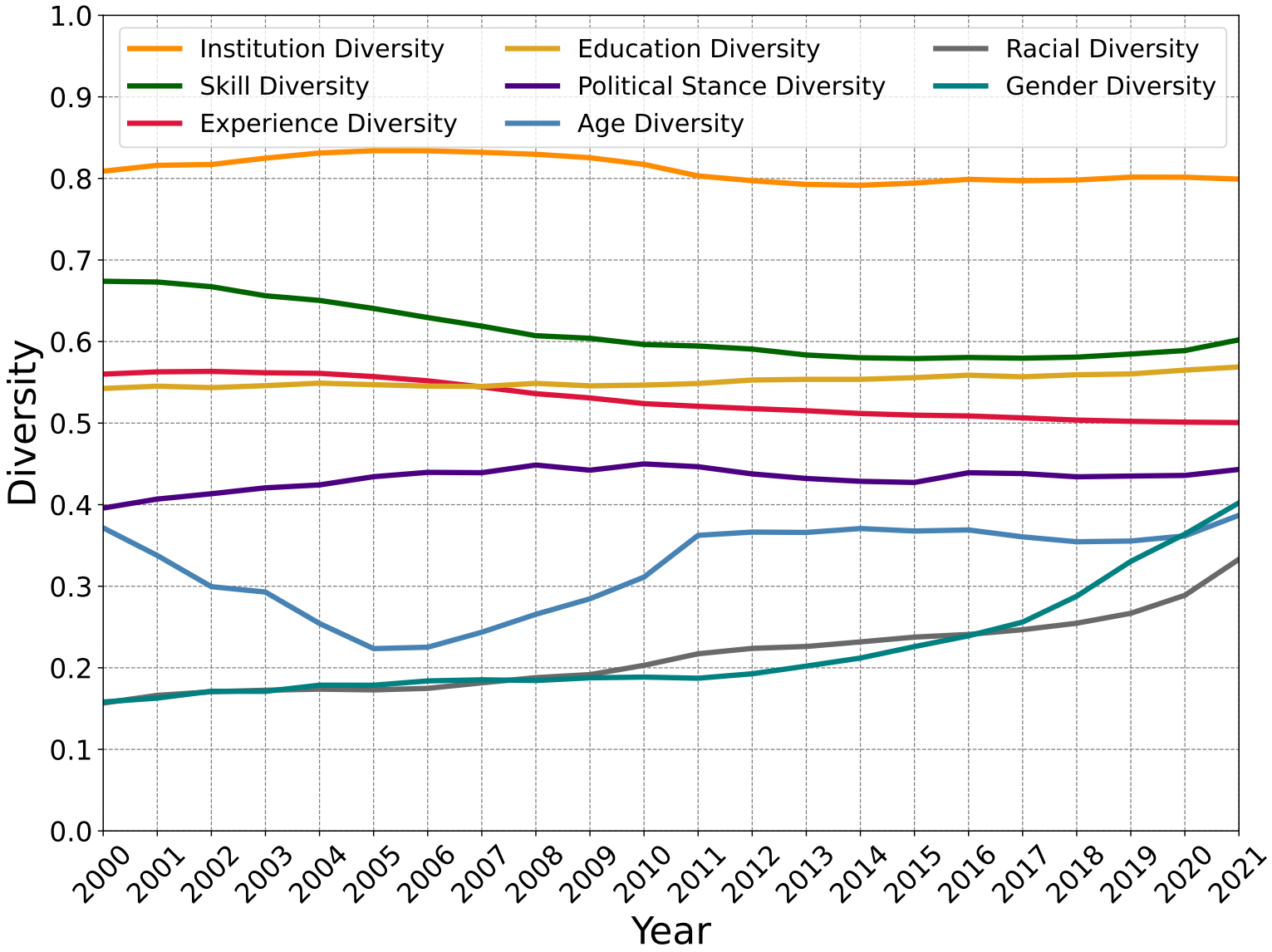
Institutional diversity

- Director appointments often come from education and professional networks, a "Rolodex" effect that subtly influences board diversity.
  - Alumni from elite universities and top organizations (e.g., McKinsey, GE, Goldman Sachs) often carry distinct perspectives and approaches inherited from these institutions.
- **Institutional Diversity:** An inverse measure of pairwise shared education and employment backgrounds among board members. Average stands at 0.81.
- **Education Diversity:** Apply the same formula on ten types of education institutions. Average value is 0.53.
- Both measures signifies a "small world" effect, a less visible aspect of board diversity.

Viewpoint diversity

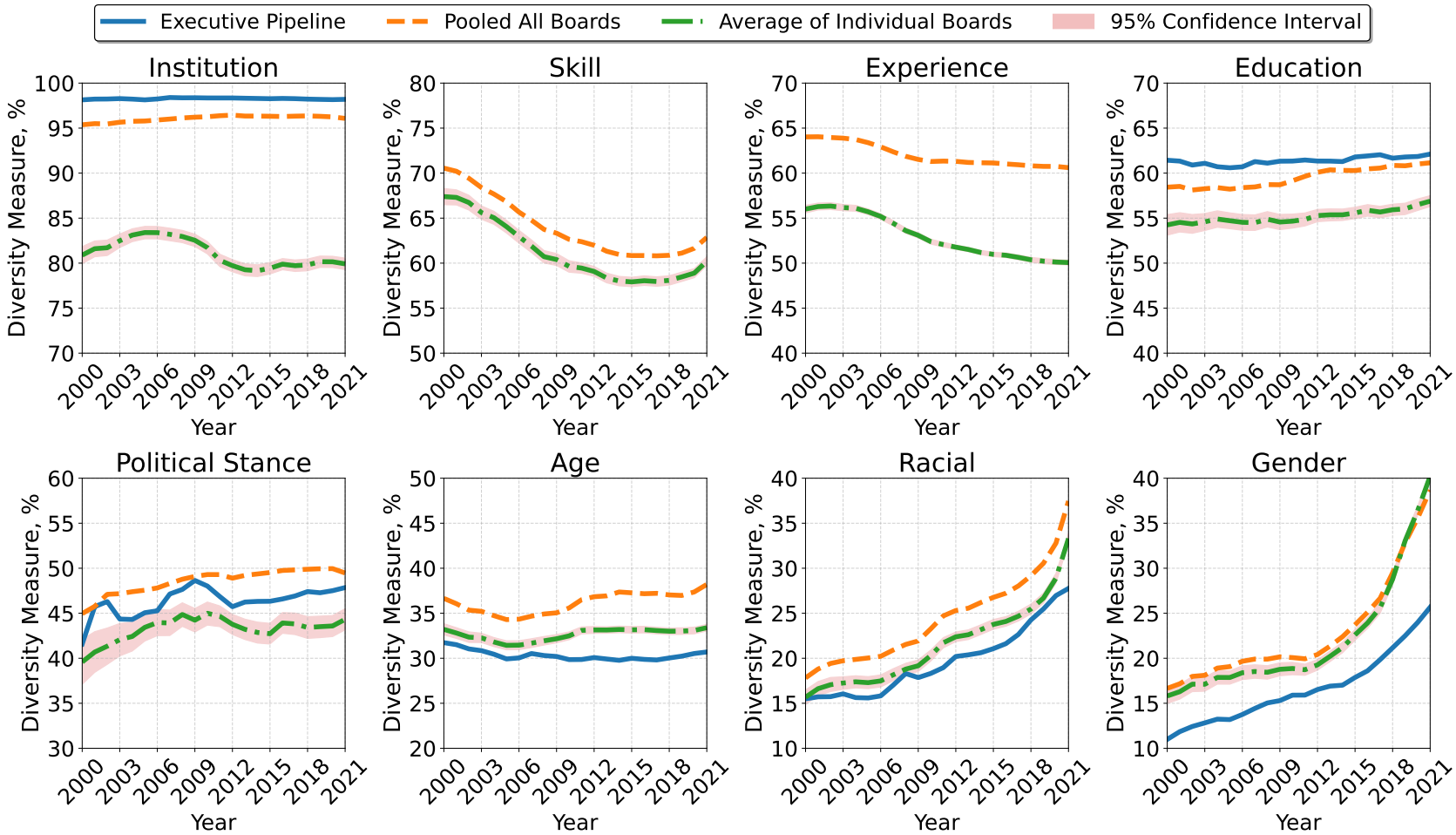
- Build on generational experiences and political stances that shape individual values and perspectives.
- **Age Diversity:** Range-normalized standard deviation, a proxy for perspectives from macro social-economic experience (Malmendier and Nagel, 2011, 2015).
- **Political Diversity:** Political stance reflects individual values that could impact reasoning and decision making.
  - Assessed through FEC-tracked political contributions to federally registered political committees.
  - Democratic or Republican based on comparing contribution to both sides, with a moving window of last ten years.
  - One minus the adjusted HHI is 0.46.

Time series of diversity



Macro vs. micro diversity

Diversity at the individual board level vs. all-boards pooled level.



Correlations among high-dimensional diversity

	Experience Diversity (1)	Skill Diversity (2)	Political Diversity (3)	Racial Diversity (4)	Education Diversity (5)	Institution Diversity (6)	Age Diversity (7)	Gender Diversity (8)
(1) Experience	1.000							
(2) Skill	0.224	1.000						
(3) Political	0.009	-0.017	1.000					
(4) Racial	-0.088	0.013	0.028	1.000				
(5) Education	-0.033	-0.022	-0.001	0.022	1.000			
(6) Institution	0.167	0.061	0.019	-0.071	0.151	1.000		
(7) Age	0.008	0.030	-0.013	0.022	0.005	-0.073	1.000	
(8) Gender	-0.034	0.024	0.042	0.131	-0.018	0.063	-0.143	1.000

Does demographic diversity contribute to professional diversity

- Cross-sectional regression at the new director level (in the year of joining).
- Mostly yes, with the exception of education diversity (overall negative) and political diversity (overall no effect).
- Similar effects whether new directors are added for replacement or expansion.

	ΔPolitical Stance Diversity (1)	ΔExperience Diversity (2)	ΔSkill Diversity (3)	ΔEducation Diversity (4)	ΔInstitution Diversity (5)	ΔAge Diversity (6)
Female	0.0194	0.203***	0.264***	-0.0689***	0.128***	0.0128***
	(0.0141)	(0.0126)	(0.0127)	(0.0121)	(0.0125)	(0.00429)
Black	0.0152**	0.0442***	0.0487***	-0.0251***	0.00794*	0.00527***
	(0.00602)	(0.00498)	(0.00517)	(0.00479)	(0.00479)	(0.00170)
AAPI	-0.00238	0.0375***	0.0239***	0.00760	-0.000749	0.0237***
	(0.00568)	(0.00620)	(0.00550)	(0.00543)	(0.00577)	(0.00216)
Hispanic	0.00472	0.0483***	0.0163***	0.00962**	0.00298	0.00433***
	(0.00542)	(0.00539)	(0.00548)	(0.00488)	(0.00432)	(0.00156)
Observations	30,882	36,000	36,000	35,928	35,995	36,000
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Age Control	Yes	Yes	Yes	Yes	Yes	No

Democratic- and Republic-leaning boards

Republican- (Democratic-)leaning boards are more inclined to include minority directors with differing (the same) political views.

	ΔPolitical Diversity (1)	ΔExperience Diversity (2)	ΔSkill Diversity (3)	ΔEducation Diversity (4)	ΔInstitution Diversity (5)	ΔAge Diversity (6)
Republican leaning						
Female	0.180***	0.201***	0.266***	-0.0739***	0.113***	0.0245***
	(0.0220)	(0.0182)	(0.0187)	(0.0180)	(0.0175)	(0.00643)
Black	0.0906***	0.0258***	0.0558***	-0.0181**	0.0133**	0.00421*
	(0.0101)	(0.00707)	(0.00785)	(0.00744)	(0.00642)	(0.00248)
AAPI	0.0275**	0.0609***	0.0306***	0.0254***	0.00613	0.0256***
	(0.0109)	(0.00970)	(0.00991)	(0.00848)	(0.00892)	(0.00359)
Hispanic	0.0132	0.0591***	0.0253***	0.0117	0.0209***	0.00730***
	(0.00848)	(0.00836)	(0.00887)	(0.00750)	(0.00656)	(0.00243)
Observations	14,738	16,844	16,844	16,812	16,844	16,844
Democratic leaning						
Female	-0.150***	0.213***	0.258***	-0.0569***	0.138***	0.00638
	(0.0199)	(0.0203)	(0.0204)	(0.0199)	(0.0211)	(0.00656)
Black	-0.0618***	0.0580***	0.0384***	-0.0217***	0.0151*	0.00617**
	(0.00666)	(0.00822)	(0.00802)	(0.00749)	(0.00830)	(0.00270)
AAPI	-0.0342***	0.0298***	0.0177**	-0.00674	0.00307	0.0236***
	(0.00692)	(0.00870)	(0.00785)	(0.00833)	(0.00874)	(0.00318)
Hispanic	-0.00343	0.0432***	0.00828	0.00815	-0.00444	0.00237
	(0.00860)	(0.00924)	(0.00824)	(0.00850)	(0.00731)	(0.00252)
Observations	10,669	12,328	12,328	12,312	12,328	12,328
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes

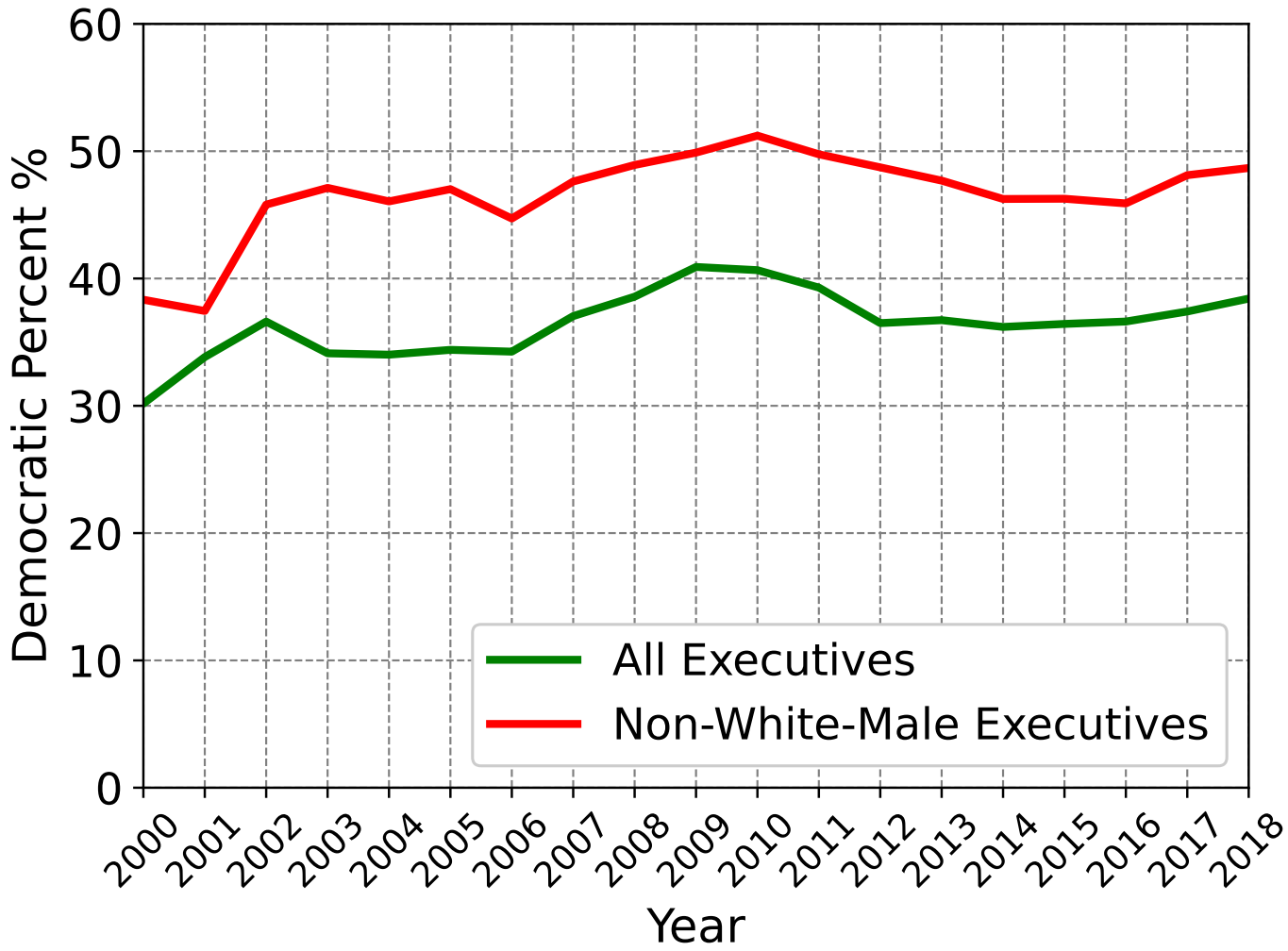
Dem- and Rep-leaning boards, continued

	(New Director is Political Minority)			
	(1)	(2)	(3)	(4)
Female	0.0415***	0.208***	0.207***	0.157***
	(0.0102)	(0.0125)	(0.0126)	(0.0113)
Black	0.000685	0.274***	0.273***	0.185***
	(0.0161)	(0.0173)	(0.0174)	(0.0160)
AAPI	-0.0185	0.208***	0.207***	0.110***
	(0.0224)	(0.0295)	(0.0296)	(0.0280)
Hispanic	0.0138	0.0556	0.0552	-0.00184
	(0.0271)	(0.0364)	(0.0366)	(0.0328)
DemMaj	-0.0178*	0.170***	0.169***	0.0995***
	(0.00969)	(0.0116)	(0.0116)	(0.00981)
Female × DemMaj		-0.362***	-0.362***	-0.258***
		(0.0187)	(0.0188)	(0.0168)
Black × DemMaj		-0.589***	-0.588***	-0.410***
		(0.0258)	(0.0259)	(0.0237)
AAPI × DemMaj		-0.418***	-0.413***	-0.220***
		(0.0398)	(0.0400)	(0.0361)
Hispanic × DemMaj		-0.105**	-0.107**	-0.0246
		(0.0532)	(0.0534)	(0.0466)
Observations	14,590	14,590	14,496	14,200
Industry FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Firm Controls	No	No	Yes	Yes
Diversity Controls	No	No	No	Yes

- *DemMaj* is dummy for boards with more Democratic-leaning directors than Republican ones.
- Because both types of boards are more likely to admit new directors who are demographic minority, diversity movement led to "bluer boards."
- One hypothesis is that minority director candidates are majority liberal, hence the relation is supply-driven.

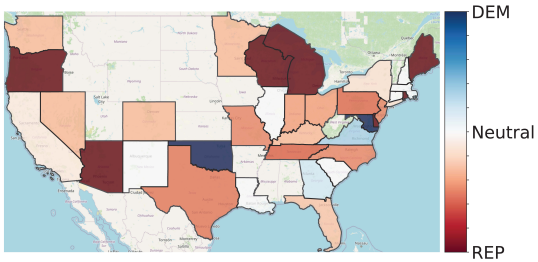
Demographic-minority executives are politically diverse

Political stance of ExecuComp. About 75% of the directors are corporate executives, therefore, ExecuComp executives serve as a proxy for the pool of director candidates.

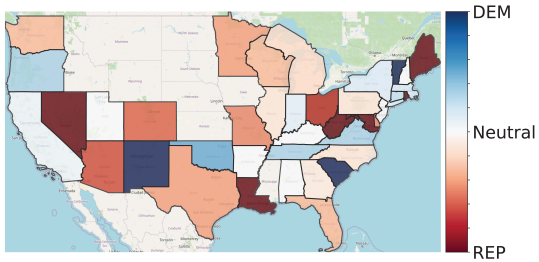


Supply of minority executives with diverse political views by cycle-state

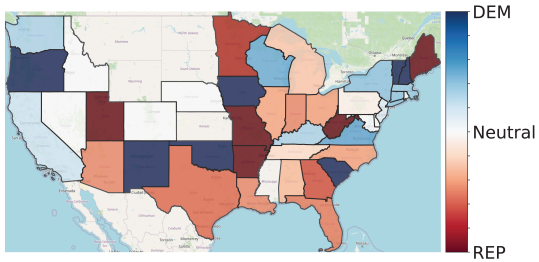
- Political Stance among Minority or Female executives across years.



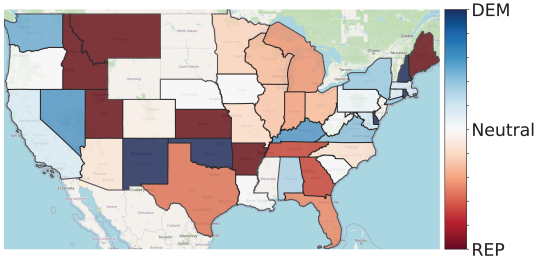
Year 2000



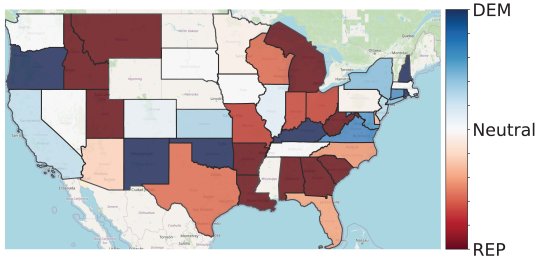
Year 2004



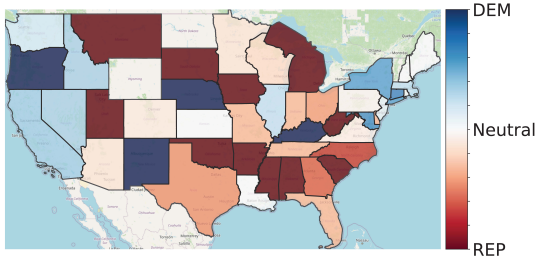
Year 2008



Year 2012



Year 2016



Year 2018

Test the talent supply hypothesis: State-firm political leaning double sorting

Regression at the new director level (during the year of addition).

	ΔPolitical Stance Diversity			
	(1)	(2)	(3)	(4)
Female	0.180***	-0.139***	0.172***	-0.151***
	(0.0323)	(0.0474)	(0.0305)	(0.0221)
Black	0.0882***	-0.0568***	0.0978***	-0.0619***
	(0.0143)	(0.0148)	(0.0143)	(0.00772)
AAPI	0.00928	-0.0554***	0.0350**	-0.0280***
	(0.0162)	(0.0174)	(0.0147)	(0.00760)
Hispanic	0.0181	-0.0236*	0.00801	0.00364
	(0.0139)	(0.0140)	(0.0107)	(0.0104)
Observations	6,712	2,557	7,998	8,074
Industry FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
State	Rep	Rep	Dem	Dem
Firm Leaning	Rep	Dem	Rep	Dem

Test the talent supply hypothesis: Response to local supply

Do firms respond to the supply of candidates with diverse political views?

	ΔPolitical Stance Diversity							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Female	0.171***	-0.148***	0.168***	-0.145***	0.142***	-0.154***	0.165***	-0.148***
	(0.0242)	(0.0257)	(0.0239)	(0.0258)	(0.0241)	(0.0258)	(0.0237)	(0.0248)
Black	0.0705***	-0.0577***	0.0730***	-0.0591***	0.0717***	-0.0623***	0.0736***	-0.0612***
	(0.0112)	(0.00945)	(0.0111)	(0.00947)	(0.0114)	(0.00976)	(0.0110)	(0.00906)
AAPI	0.0283**	-0.0355***	0.0281**	-0.0356***	0.0225*	-0.0367***	0.0277**	-0.0359***
	(0.0127)	(0.00877)	(0.0126)	(0.00880)	(0.0125)	(0.00920)	(0.0126)	(0.00861)
Hispanic	0.00863	0.00858	0.00812	0.00823	0.00942	-0.000770	0.00820	0.00442
	(0.00906)	(0.0108)	(0.00897)	(0.0108)	(0.00936)	(0.0117)	(0.00879)	(0.0110)
%Dem (Non white-male)–State	0.0198**	-0.00135						
	(0.00869)	(0.0129)						
%Dem–State			0.0184*	-0.0119				
			(0.00977)	(0.0123)				
%Dem (Non white-male)–Industry					0.00831	-0.00339		
					(0.00848)	(0.0112)		
%Dem–Industry							0.00956	0.00689
							(0.00843)	(0.0113)
Observations	11,771	7,487	11,984	7,518	10,419	6,856	11,943	7,503
Industry FE	Yes	Yes	Yes	Yes	No	No	No	No
State FE	No	No	No	No	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm Leaning	Rep	Dem	Rep	Dem	Rep	Dem	Rep	Dem

Do diverse directors fit in: Insights from Departures

- Departing to a "better" position means joining a firm at least 25% larger by market cap or moving to a higher seniority role, vice versa.
- Departures to "lesser" positions are unlikely to be desired, while departure to "better" positions could be a sign of human capital in high demand.
- Coefficients are "odds ratio,' with the unit being the neutal value.

	(1)			(2)		
	Better Positions	No Information	Lesser Positions	Better Positions	No Information	Lesser Positions
Female	1.086**	0.742***	0.150***	1.101**	0.716***	0.155***
	(0.0439)	(0.0150)	(0.0335)	(0.0455)	(0.0147)	(0.0350)
Black	1.226***	1.047*	0.431***	1.248***	1.017	0.425***
	(0.0836)	(0.0287)	(0.0933)	(0.0855)	(0.0284)	(0.0934)
AAPI	1.106	1.320***	0.870	1.079	1.328***	0.820
	(0.0846)	(0.0575)	(0.186)	(0.0874)	(0.0579)	(0.187)
Hispanic	1.087	1.032	0.519**	1.061	0.946	0.515**
	(0.117)	(0.0512)	(0.160)	(0.117)	(0.0443)	(0.165)
Age	0.964***	1.046***	0.969***	0.965***	1.046***	0.969***
	(0.00162)	(0.00129)	(0.00332)	(0.00168)	(0.00134)	(0.00347)
ΔExperience Diversity				1.151***	1.183***	1.056
				(0.0181)	(0.00919)	(0.0452)
ΔPolitical Stance Diversity				1.008	1.004	0.925
				(0.0141)	(0.00598)	(0.0459)
ΔSkill Diversity				0.932***	1.049***	1.025
				0.0144)	(0.00669)	(0.0440)
ΔInstitution Diversity				0.931***	0.956***	0.777***
				(0.0153)	(0.00707)	(0.0334)
ΔEducation Diversity				1.034**	1.015**	1.044
				(0.0154)	(0.00640)	(0.0440)
Observations	471,133	471,133	471,133	449,558	449,558	449,558
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm Control	Yes	Yes	Yes	Yes	Yes	Yes

Event studies to sharpen inferences

- Answering the question "whether and which diversity matters" for firm outcomes is a challenge as board composition is endogenous.
- A series of McKinsey studies (since 2015) show "diversity wins," but large sample empirical correlations have been mixed (Green and Hand, 2021).
- We rely on three exogenous events (Californian gender quota, George Floyd, and Covid) to demonstrate
  - Trade-offs: Does a largely exogenous increase in one dimension of diversity come at benefit/cost of diversity along other dimensions.
  - Real impact: Crises present unique challenges that demand astute leadership and decision-making, hence an opportunity to assess whether and which diversity matters.

Potential trade-offs among different dimensions of diversity

- California board gender quota law in 2018 led to an average relative increase of 1.1 female directors among "non-compliant" CA-headquartered boards during 2019-2020.
  - The full sample trend was 0.46 additional female director.
- Following George Floyd's murder in 2020, there was an increase of 0.25 black director per board on average.
  - The effect was significantly stronger (0.43 more) among boards without Black director.
- Both events allow us to examine changes in diversity along *other* dimensions for an inference of potential trade-offs.

Is there a trade off among different dimensions of diversity?

Key coefficients from difference-in-difference regressions based on the two diversity shocks, with firm characteristics, firm & year fixed effects included as controls.

	(1)		(2)	
	California Shock (2019): Noncompliant firms		Floyd Shock (2020): No Black Directors	
	Coefficient	t-stat	Coefficient	t-stat
Gender Diversity	0.120***	15.326	0.0119***	3.480
Racial Diversity	0.0022	0.356	0.0305***	9.385
Experience Diversity	0.0007	0.346	0.0001	0.0598
Skill Diversity	0.0239***	4.079	-0.0002	-0.0855
Age Diversity	-0.0082	-0.197	0.0376*	1.918
Political Stance Diversity	0.0029	0.191	0.0008	0.127
Education Diversity	-0.0007	-0.0829	-0.0020	-0.564
Institution Diversity	0.0249***	2.936	-0.0023	-0.563
Firm controls		Included		
Year & Firm Fixed effects		Included		
Observations		10,922		

Board diversity and crisis management: Case of COVID-19

Dependent variable: DGTW (size, B/M, momemtum, and liquidity) adjusted return during the Feburary-March in 2020.

	(1)	(2)	(3)	(4)	(5)	(6)
Gender Diversity	-0.0258				-0.0160	-0.0201
	(0.0213)				(0.0224)	(0.0231)
Racial Diversity	0.0219				0.0269*	0.0242
	(0.0159)				(0.0161)	(0.0161)
Experience Diversity		0.0771**			0.0815**	0.0864**
		(0.0343)			(0.0345)	(0.0347)
Skill Diversity		0.0247			0.0368**	0.0352**
		(0.0173)			(0.0179)	(0.0179)
Age Diversity			0.00195		0.00111	0.00103
			(0.00299)		(0.00304)	(0.00316)
Political Diversity			-0.00826		-0.00726	-0.00615
			(0.0102)		(0.0102)	(0.0102)
Education Diversity				-0.0165	-0.00879	-0.00959
				(0.0136)	(0.0139)	(0.0138)
Institution Diversity				0.0195	0.0230*	0.0217
				(0.0132)	(0.0136)	(0.0136)
Technology skill						0.0376**
						(0.0177)
Female below 50						0.0112
						(0.0557)
Market Cap	0.00177	0.00155	0.00121	0.00112	0.00187	0.00169
	(0.00147)	(0.00139)	(0.00145)	(0.00139)	(0.00154)	(0.00154)
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,414	2,414	2,297	2,410	2,296	2,296
R-squared	0.256	0.258	0.263	0.256	0.27	0.272

Conclusion

- Based on a newly constructed comprehensive database of board directors, this study provides multidimensional perspectives on board diversity.
- Demographic diversity has improved, while advancement in diversifying boards by experience, skills, institutional backgrounds, and political viewpoints has mostly been stagnant.
- Demographic diversification has been associated with more homogeneous political viewpoints on Democratic-leaning boards and more diverse viewpoints on Republican-leaning boards, both leading to "bluer" boards.
- Event studies underscore the importance of experience and skill diversity of boards, and the trade-off among different dimensions of diversity.