



Corporate Politics

The Rise of Partisan Polarization in Firms, 1980-2018

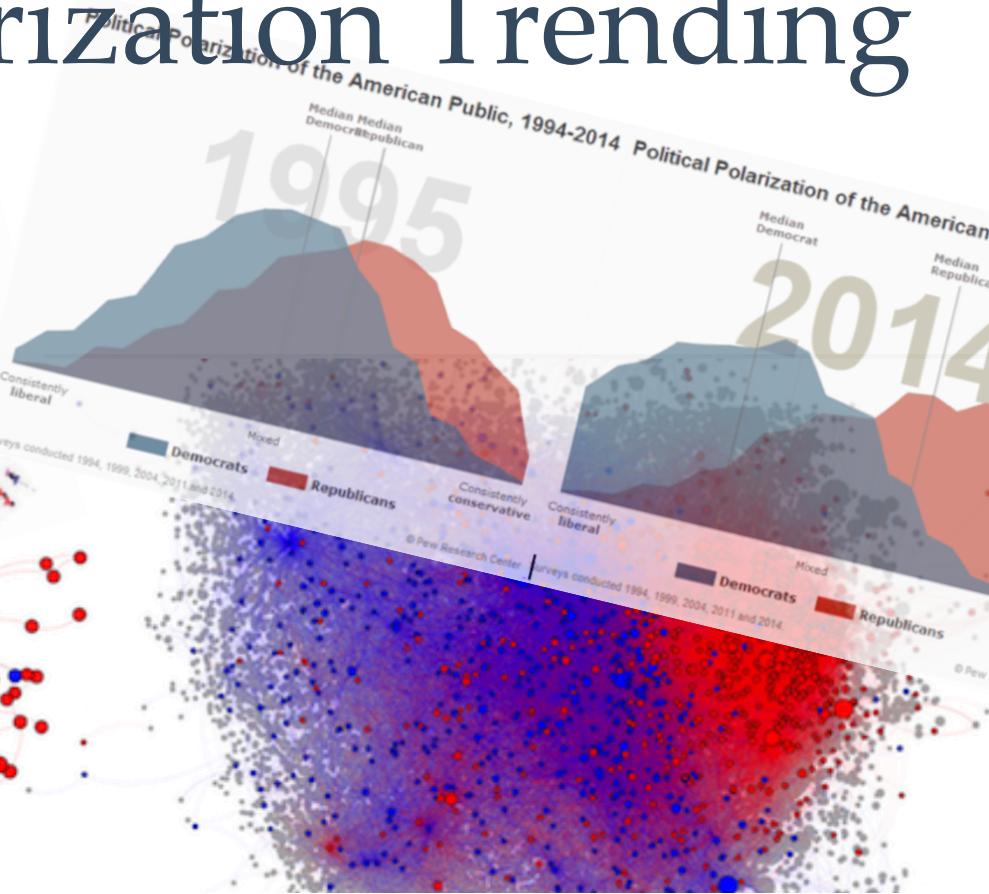
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FEAR AND
LOATHING
ACROSS
PARTY LINES:
NEW EVIDENCE ON
GROUP POLARIZATION

Polarization Trending



What is Partisan Polarization and How Does it Relate to Firms?

Partisan Polarization in the American Firm?

- *Partisan polarization* refers to the phenomenon whereby individuals sort into discrete and increasingly homogeneous political factions (Fiorina and Abrams 2008; Lee 2015).
- Related to *affective polarization* or feelings of hostility toward those of the opposing party (Iyengar and Westwood 2015).

Firms and Political Partisanship

- Increasingly, matching a firm's cultural or social context can influence not only hiring behavior (Rivera 2012; Rivera and Tilcsik 2016) but also decisions to terminate employees (Goldberg et al. 2016; *c.f.* King et al. 2010).
- In the workplace, individuals are reluctant to share political views, at least when they conflict with the majority perspective (Cowan and Baldassarri 2018), in part, because of the negative stigma attached to partisan out-groups (Iyengar and Westwood 2015). This creates the appearance but not necessarily the reality of partisan homogeneity.
- Such trends suggest partisanship might infiltrate the workforce, *but in what ways*, has the partisan composition of firms shifted?

Motivating Questions

Motivating Questions

- To what extent does partisan polarization or party sorting emerge in the American corporation?
- Can the emergence of firms as political actors be detected through the collective partisan identity of its actor members?
- Are such measures of partisanship associated with firm behavior?

Methods

Methods – High Level Overview

- Data Sources: (1) Federal Election Commission (FEC) Data on Individual Campaign Contributions to Political Committees
- Data Processing: Data (ETL) Pipeline in Python and SQLite to Determine Individual Partisanship by Firm and Occupation Level
- Analysis: Dynamic Time Warping Hierarchical Cluster Analysis, Post-Clustering Analyses in combination with MSCI Environmental, Social, and Governance Data Analysis

ETL Pipeline Python and SQLite

Federal Election
Commission Data



Determine Party Identities
of Political Committees Per
Election Cycle



Build FEC Tables with
Individual Contribution
Election Cycles



SQL Filter of Individual
Contributions for
Requested Companies



Python, RegEx Quality
Control of Companies and
Employer Occupations



Determine Individuals by
Firm and Election Cycle



All FEC Data Collected

Table 1. Descriptive Statistics of FEC Data Tables, 1980-2018

FEC Table	Total Observations	Years Covered
Committees	218,482	1980-2018
Candidates	95,807	1980-2018
Linkages	50,775	2000-2018
Itemized Records	9,584,743	1980-2018
Contributions to Candidates	5,122,434	1980-2018
Individual Contributions	54,314,410	1980-2018
Operating Expenditures	10,677,8490	1980-2018

Primary FEC Tables Used

Table 1. Descriptive Statistics of FEC Data Tables, 1980-2018

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ETL Pipeline Python and SQLite

Federal Election Commission Data



Determine Party Identities of Political Committees Per Election Cycle



ELECTION CYCLE
Build FEC Tables with Individual Contribution Election Cycles



SQL Filter of Individual Contributions for Requested Companies



Python, RegEx Quality Control of Companies and Employer Occupations



Determine Individuals by Firm and Election Cycle

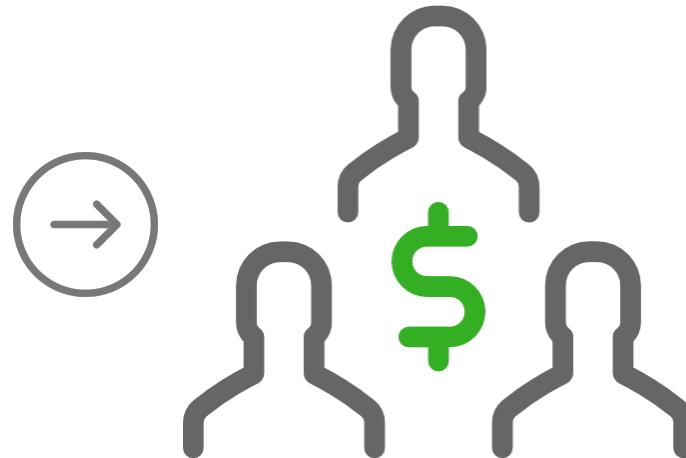


What Party is Associated with an Individual Contribution?

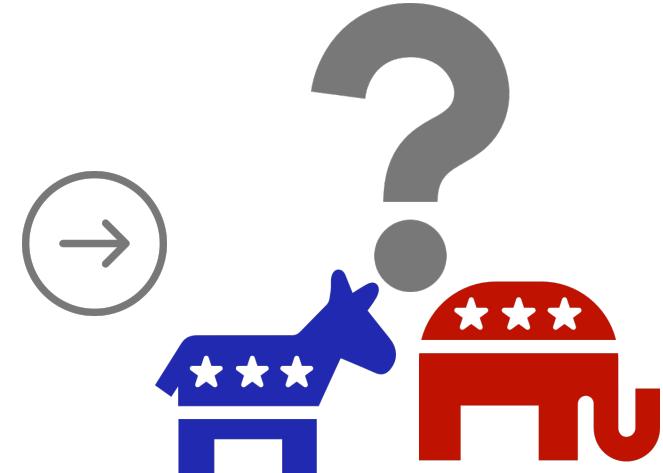
Individual Contributions



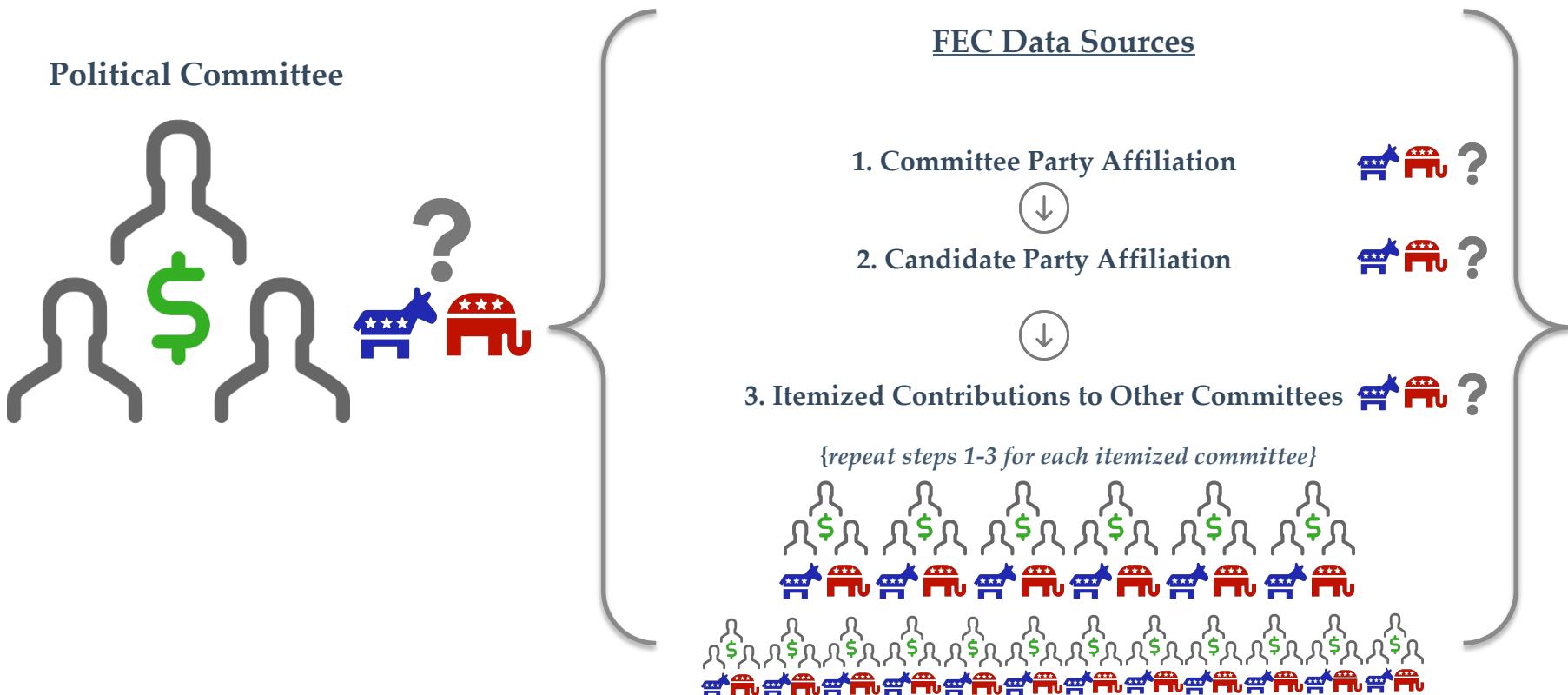
Political Committee



Partisanship



Determining the Partisan Profile of a Political Committee



ETL Pipeline Python and SQLite

Federal Election
Commission Data



Determine Party Identities
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Build FEC Tables with
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SQL Filter of Individual
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Python, RegEx Quality
Control of Companies and
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Determine Individuals by
Firm and Election Cycle



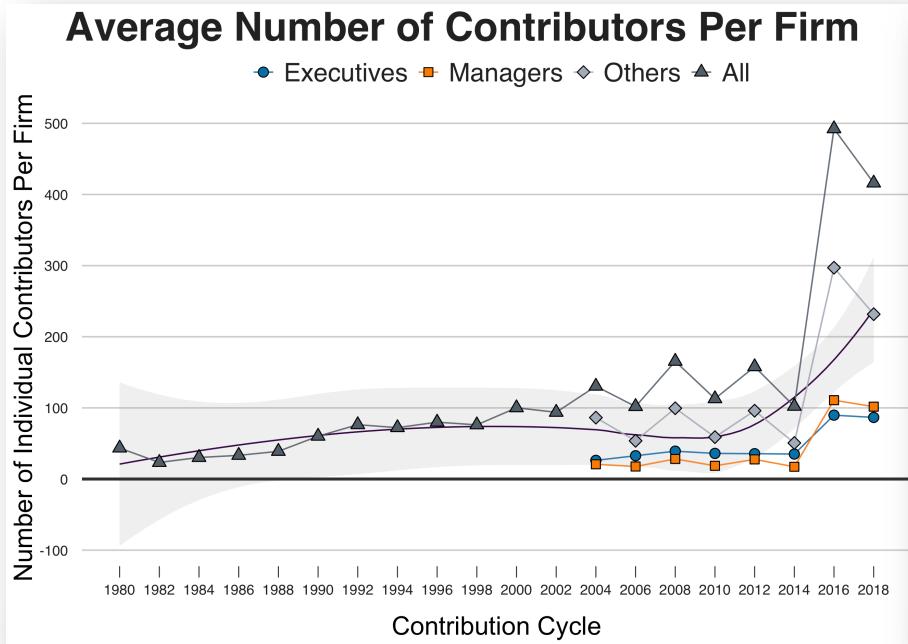
Data for Fortune 400 Companies

Data for Filtered Fortune 400 Companies, Post Quality Control (ETL) 1980-2018

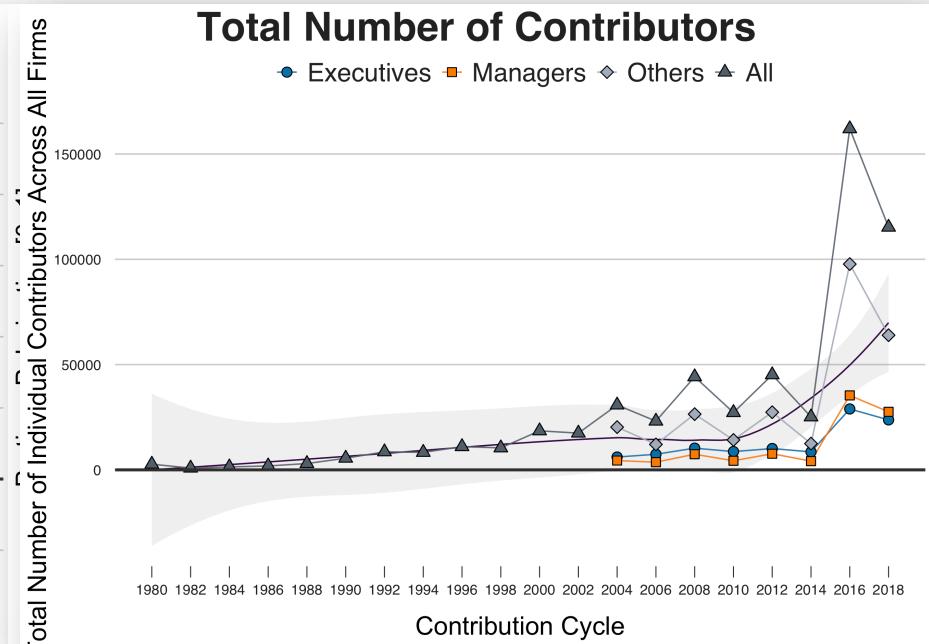
Data Level	Total Observations	Years Covered
Individual Contributions	3,863,893	1980-2018
Individuals x Firm x Election Cycle	562,473	1980-2018
Firms	336	1980-2018

Increasing Individual Contributors Since 2014

Average Individuals Per Firm



Total Individual Contributors



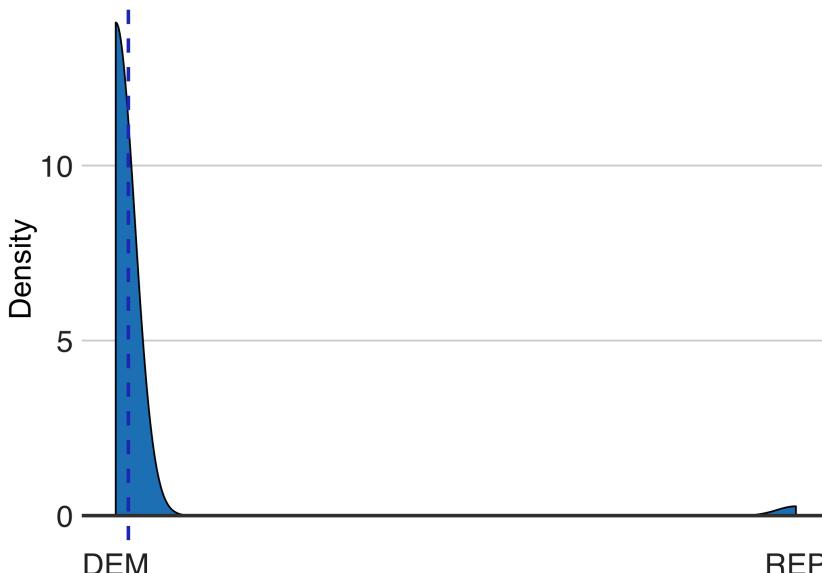
The Rise of Partisan Polarization in Firms?

Measuring Partisan Polarization

Partisan Polarization = $\left((1 - \text{Var}[X]) \times |\text{Skew}[X]| \times \ln(\text{Kurt}[X] + 10) \right)$,
where $X = \text{Party ID or Partisan Polarization}$

Alphabet (Google) - 2018

Partisan Polarization = 28.5



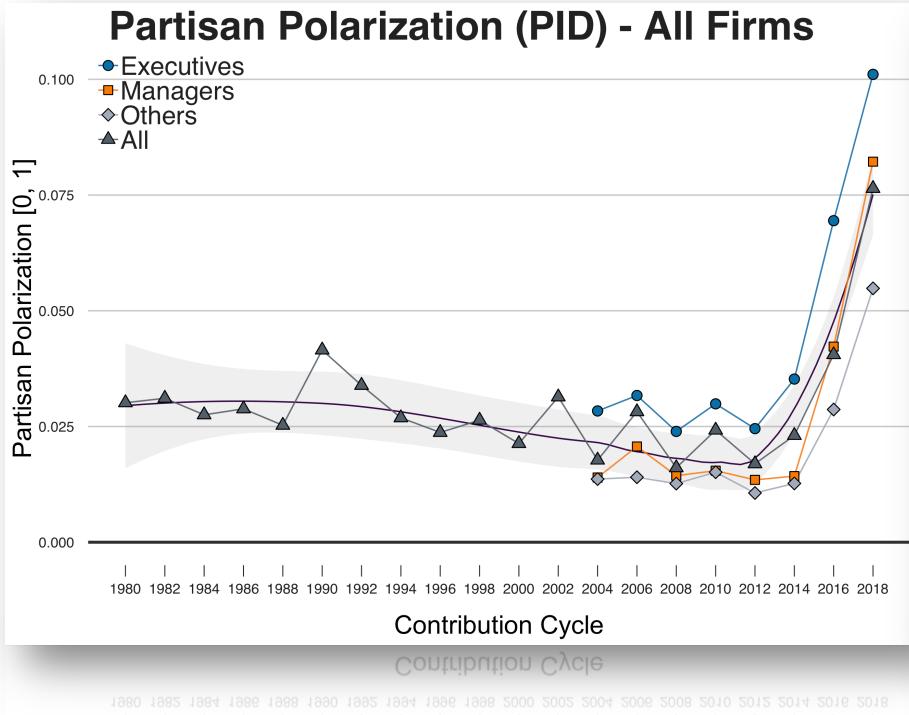
Marathon Petroleum - 2018

Partisan Polarization = 136.4

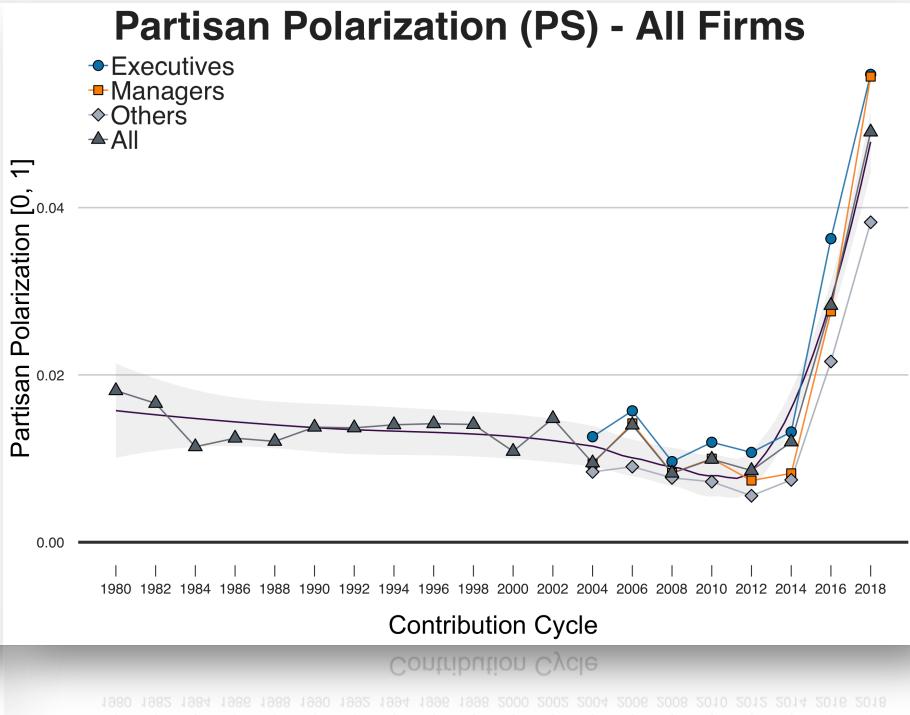


Partisan Polarization in Fortune 400 Firms, 1980-2018

Partisan Polarization (Party ID)



Partisan Polarization (Partisan Score)



Can We Classify Discrete Types of Partisan Firms?

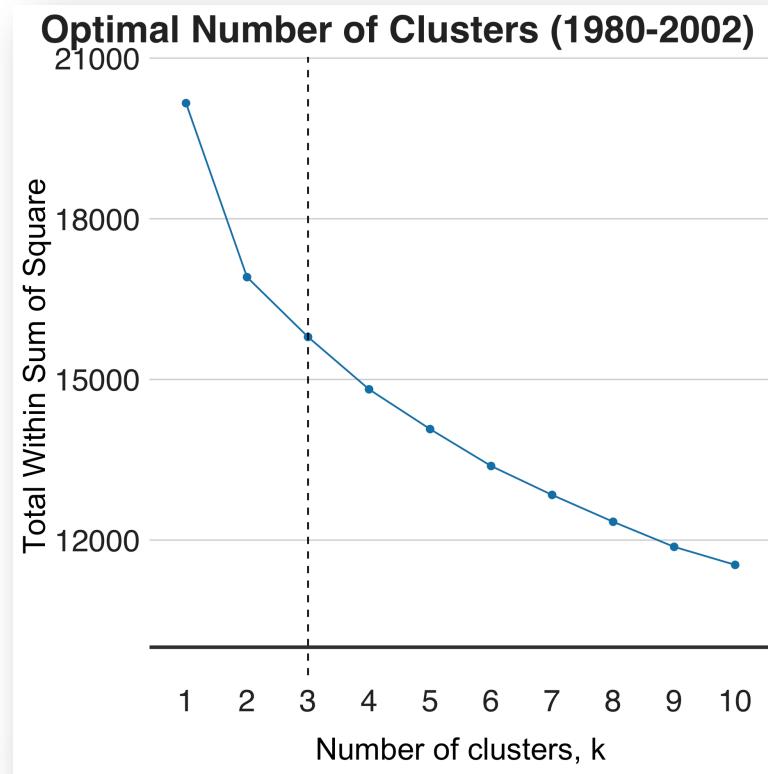
Dynamic Time Warping – Hierarchical Cluster Analysis

- Hierarchical Cluster Analysis: (AGNES/DIANA) Used in Sociological Studies of Emergence (Powel and Sandholtz 2012; Ruef 2000)
- Dynamic Time Warping: A model-free dissimilarity measure that can minimize a temporal mapping across a matrix of multivariate time series (Bernd and Clifford 1994; Montero and Vilar 2014).
- Clustering is unsupervised and the number of clusters must be specified.

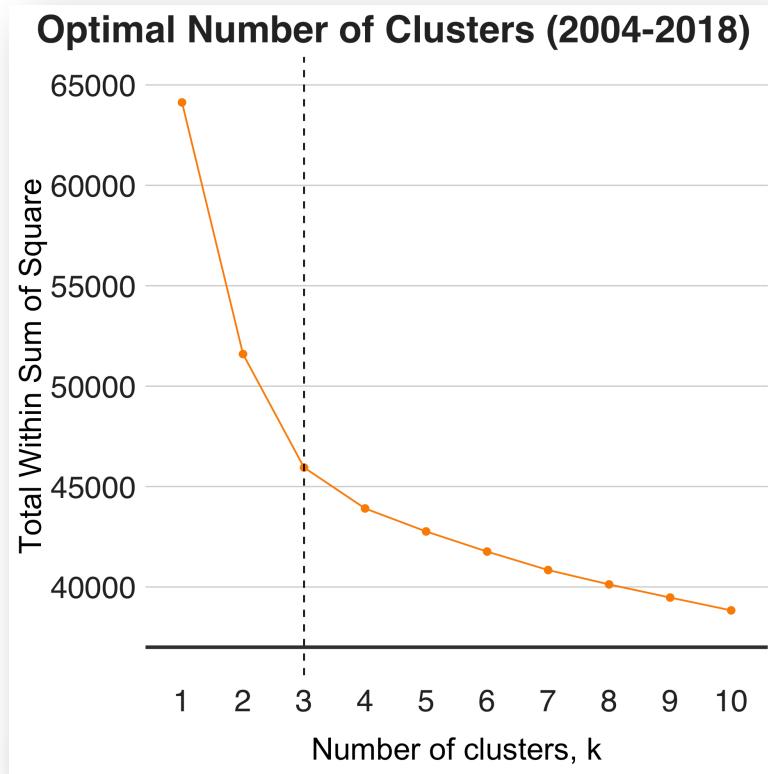
AGNES Models: Optimal Number of Clusters

AGNES Models Run Using Ward Method

AGNES 1980-2002



AGNES 2004-2018

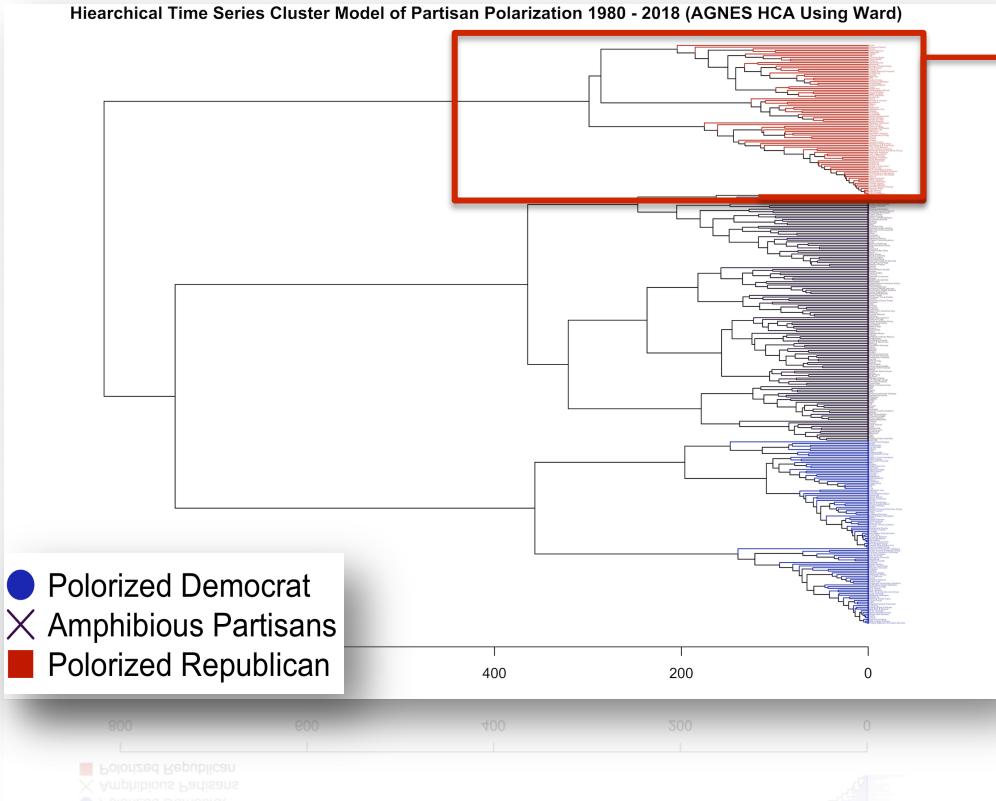


Dynamic Time Warping Hierarchical Clustering Algorithm Selection, 1980-2018

Model Coefficients

HCA Method	Model 1	Model 2	Model 3
AGNES, UPGMA	0.656	0.646	0.705
AGNES, WPGMA	0.703	0.688	0.753
AGNES, Single Linkage	0.622	0.608	0.707
AGNES, Complete Linkage	0.807	0.8	0.848
AGNES, Ward's Method	0.921	0.919	0.916
Diana	0.763	0.751	0.819

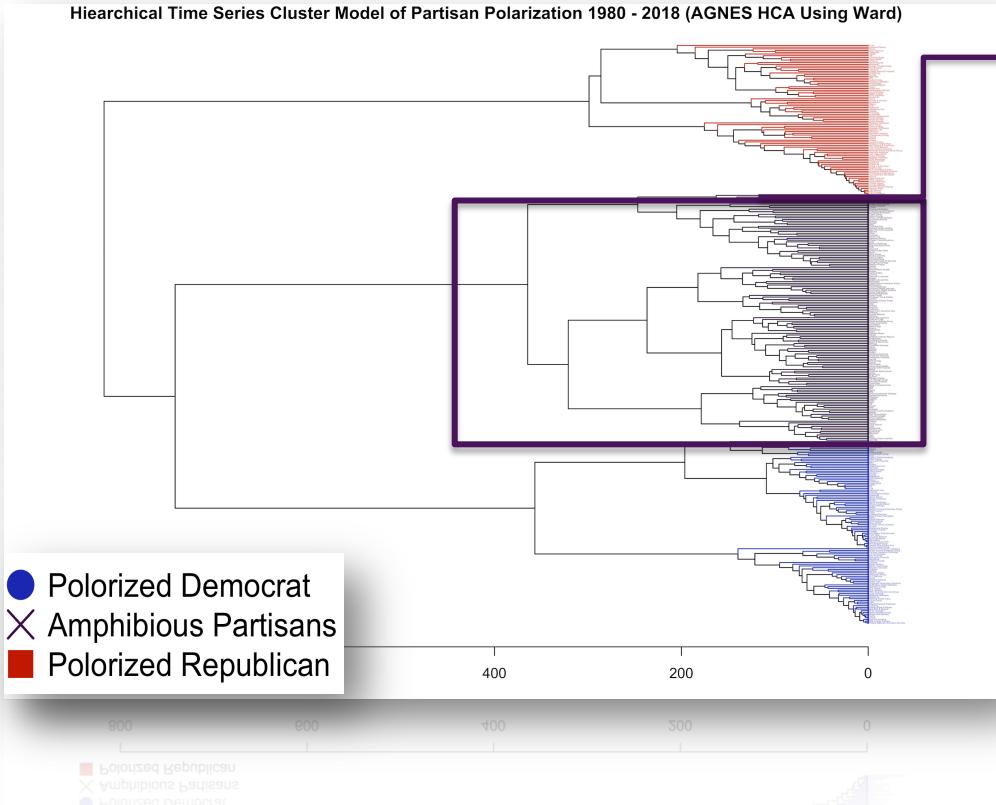
Dynamic Time Warping AGNES-Ward Model: 1980-2018



→ **Republican Firms include:**

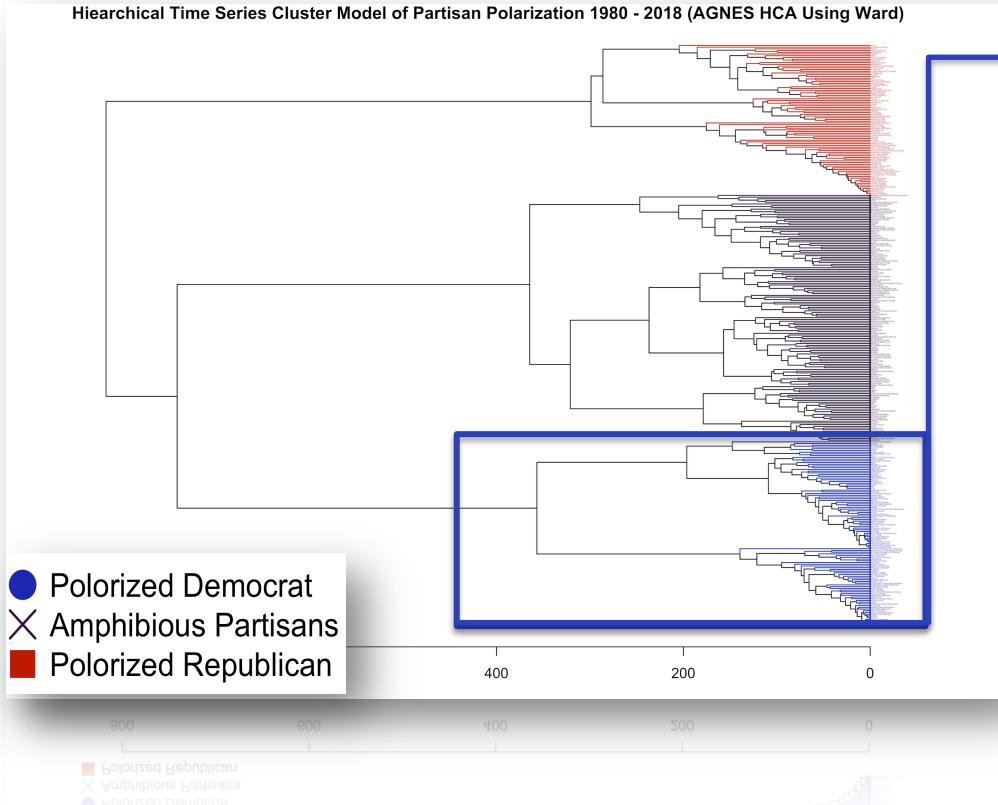
- Marathon Petroleum
- Marathon Oil
- Exxon Mobil
- Anadarko Petroleum
- Monsanto
- Dean Foods
- Hormel Foods
- Caterpillar
- Home Depot
- USAA

Dynamic Time Warping AGNES-Ward Model: 1980-2018



- **Amphibious Firms include:**
- General Mills
 - Coca-Cola
 - Hershey
 - McDonalds
 - Goldman Sachs
 - J.P. Morgan Chase
 - General Electric
 - Ford Motor
 - Boeing
 - American Airlines
 - Wal-Mart
 - Kroger

Dynamic Time Warping AGNES-Ward Model: 1980-2018



- **Democratic Firms include:**
- Alphabet (Google)
 - Apple
 - Netflix
 - Tesla
 - Nike
 - Disney
 - Starbucks
 - Whole Foods
 - Estee Lauder
 - Ralph Lauren
 - Macy's
 - Salesforce

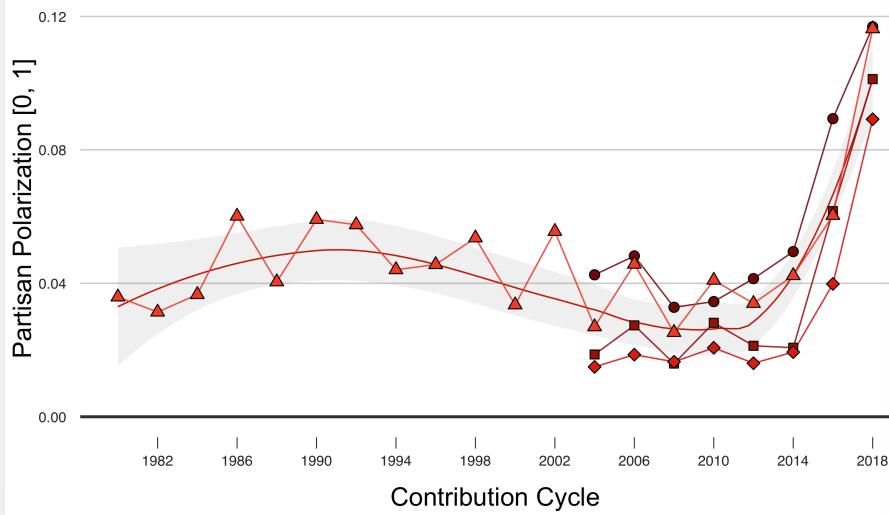
Partisan Polarization: Republican Firms

Dynamic Time Warping, Agnes-Ward Model 1980-2018 with Post-Model Partisan Validation

Partisan Polarization (Party ID)

Partisan Polarization Republican Firms (PID)

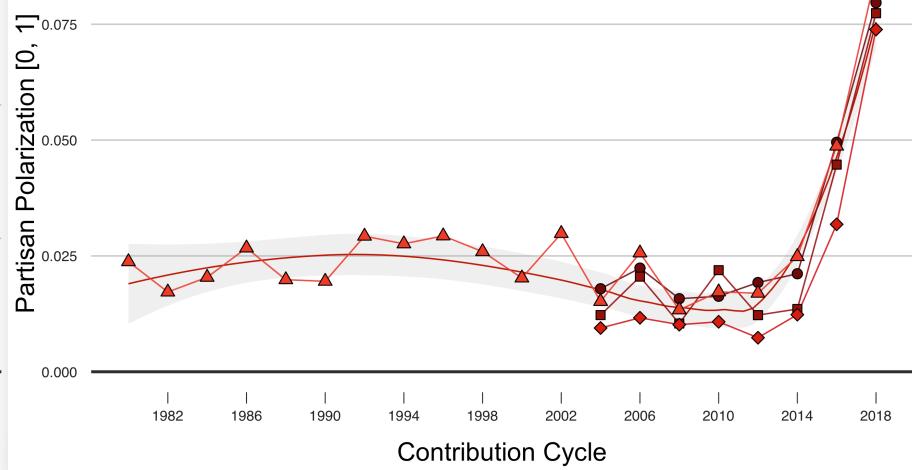
• Executives ■ Managers ♦ Others ▲ All



Partisan Polarization (Partisan Score)

Partisan Polarization Republican Firms (PS)

• Executives ■ Managers ♦ Others ▲ All



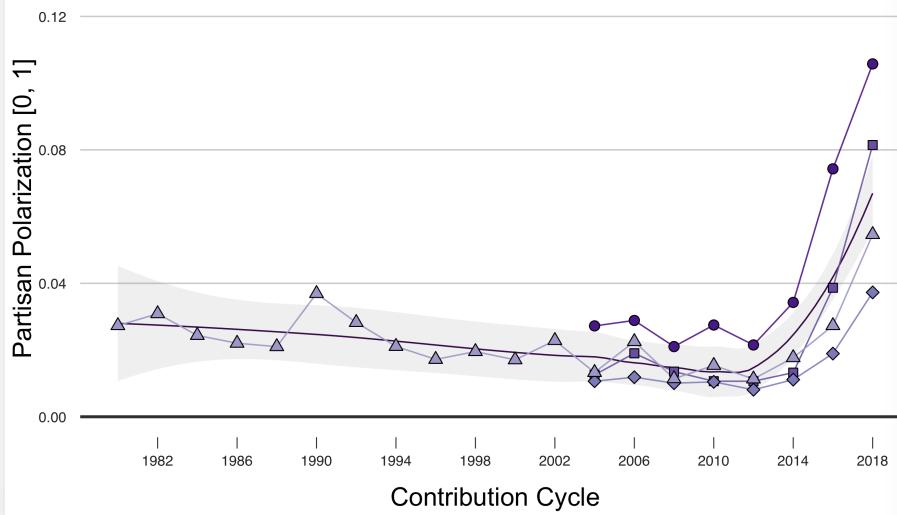
Partisan Polarization: Amphibious Firms

Dynamic Time Warping, Agnes-Ward Model 1980-2018 with Post-Model Partisan Validation

Partisan Polarization (Party ID)

Partisan Polarization Amphibious Firms (PID)

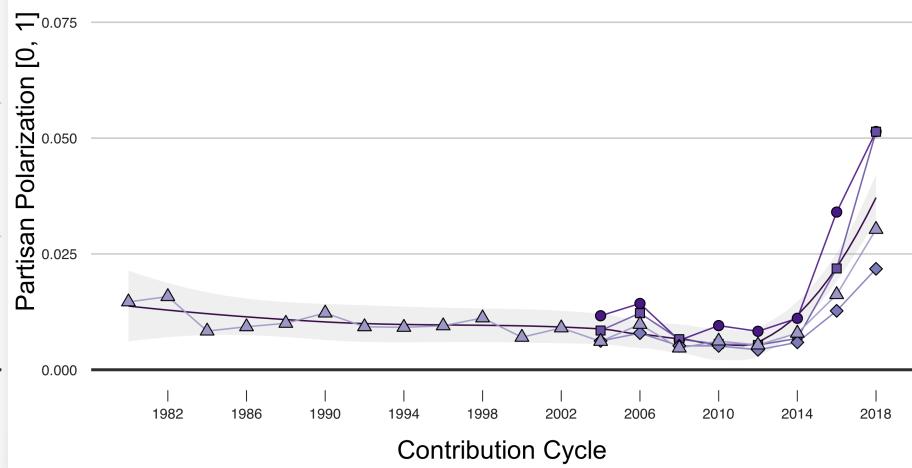
- Executives
- Managers
- ◆ Others
- ▲ All



Partisan Polarization (Partisan Score)

Partisan Polarization Amphibious Firms (PS)

- Executives
- Managers
- ◆ Others
- ▲ All



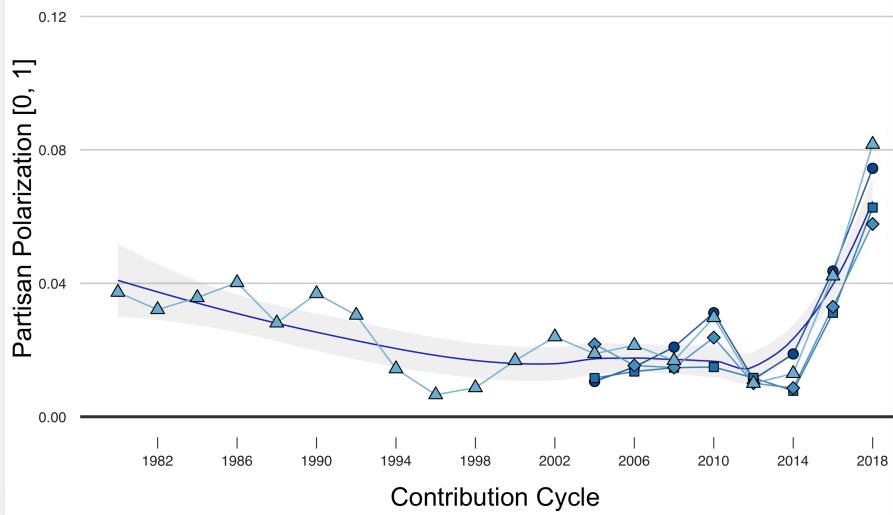
Partisan Polarization: Democratic Firms

Dynamic Time Warping, Agnes-Ward Model 1980-2018 with Post-Model Partisan Validation

Partisan Polarization (Party ID)

Partisan Polarization Democratic Firms (PID)

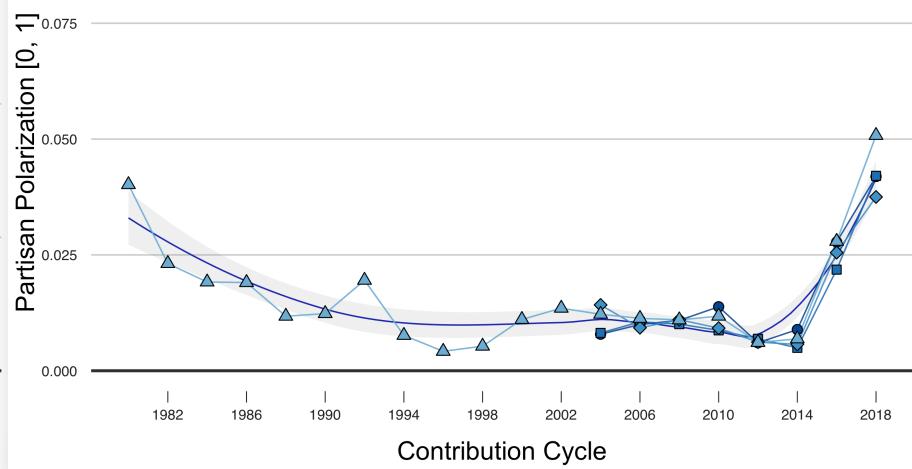
• Executives ■ Managers ♦ Others ▲ All



Partisan Polarization (Partisan Score)

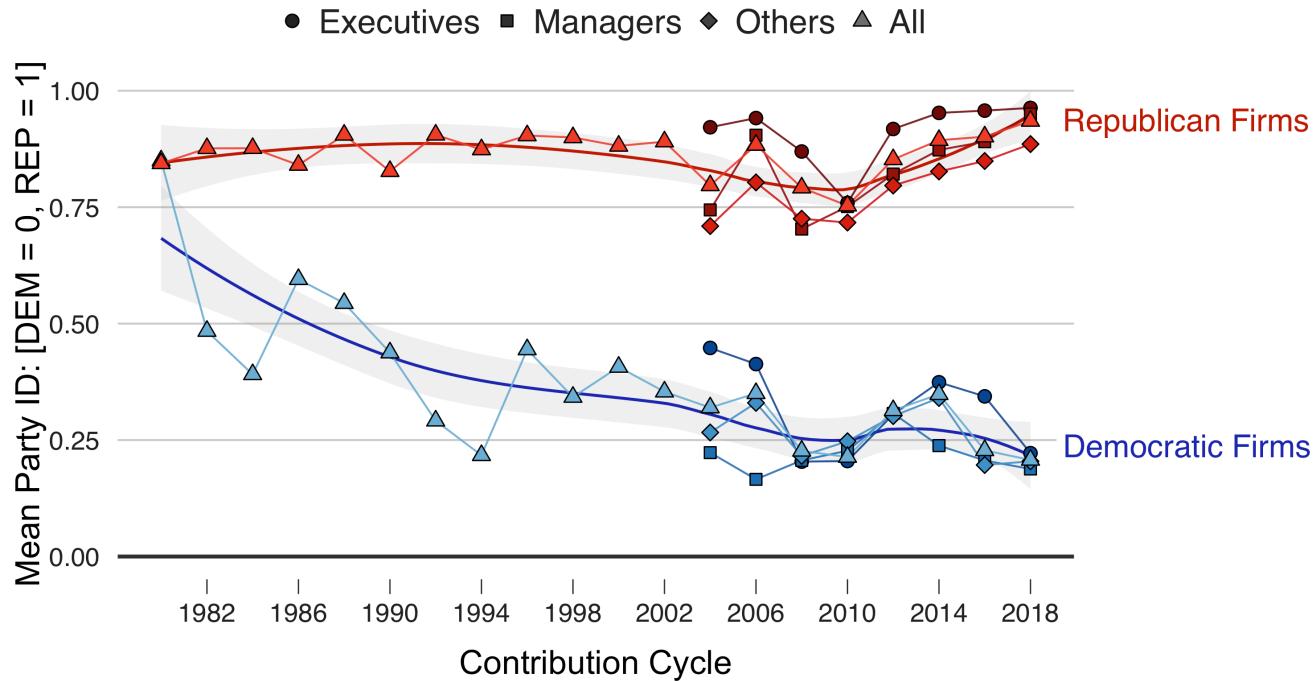
Partisan Polarization Democratic Firms (PS)

• Executives ■ Managers ♦ Others ▲ All

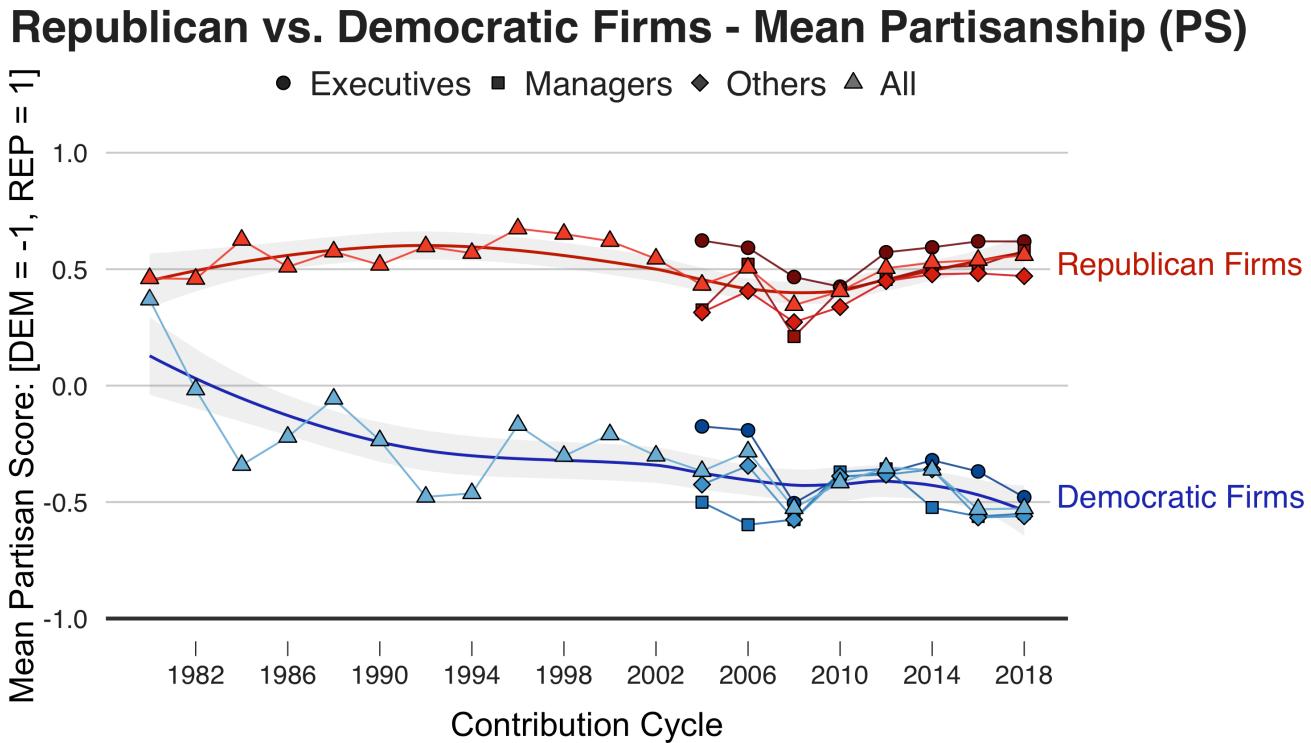


Growing Partisan Polarization Between Firms

Republican vs. Democratic Firms - Mean Partisanship (PID)



Growing Partisan Polarization Between Firms



Growing Partisan Polarization Between Firms

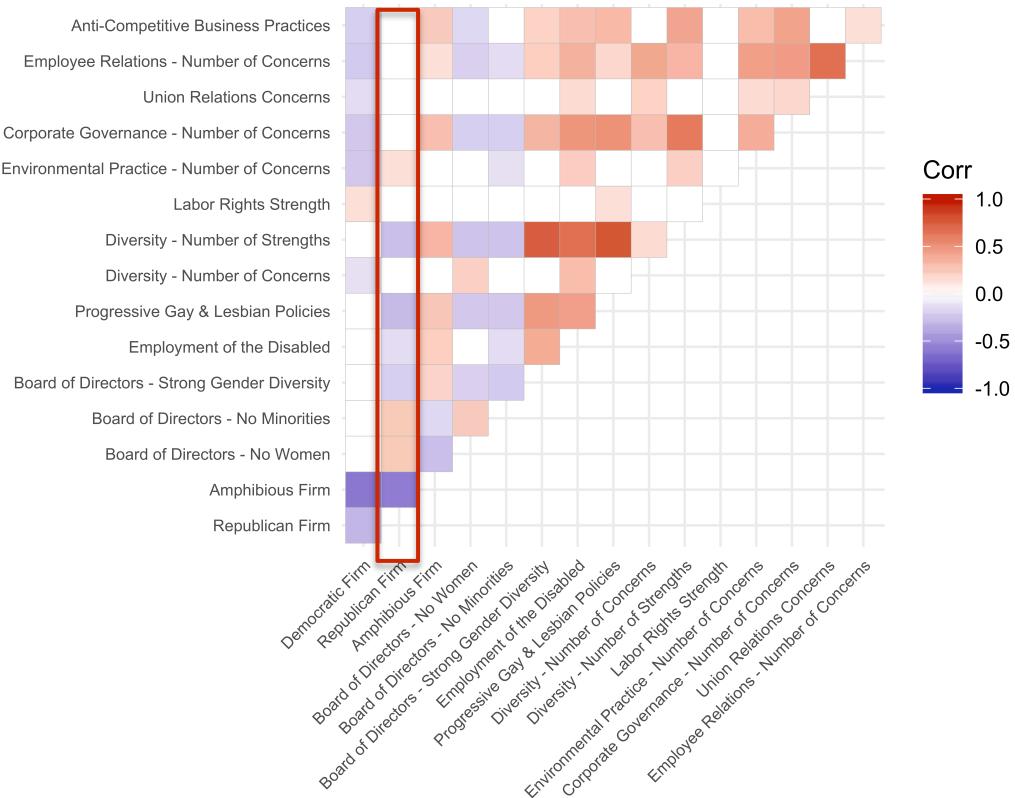
Amphibious Firms - Mean Partisanship (PS)



Is Employee Partisanship Associated with Firm Behavior?

MSCI Environmental, Social, and Governance Ratings vs. Dynamic Time Warping HCA Classified Firm Types

Significant Correlations, HCA Clustered Firms and MSCI Data, 1991-2016



Republican Firms:

Significant positive correlation with

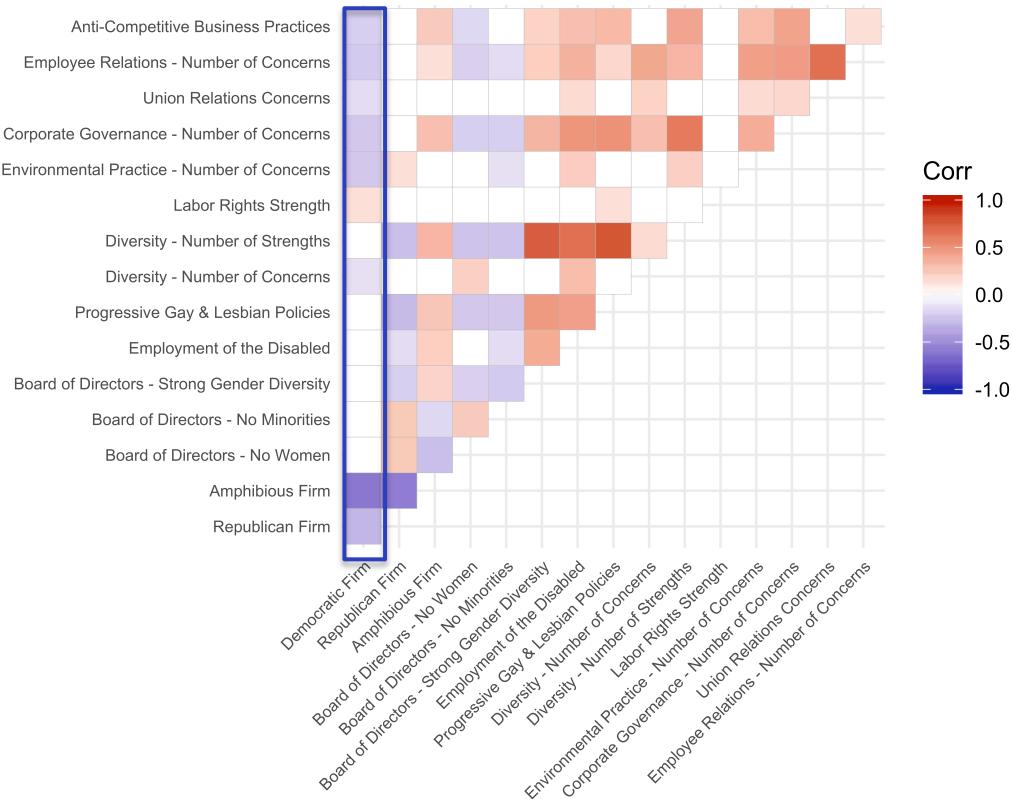
- Number of Environmental Practice Concerns
- No Minorities on Board of Directors
- No Women on Board of Directors

Significant negative correlation with

- Number of Diversity Strengths
- Progressive Gay or Lesbian Policies
- Employment of the Disabled
- Board of Directors – Strong Gender Diversity

MSCI Environmental, Social, and Governance Ratings vs. Dynamic Time Warping HCA Classified Firm Types

Significant Correlations, HCA Clustered Firms and MSCI Data, 1991-2016



Democratic Firms:

Significant positive correlation with

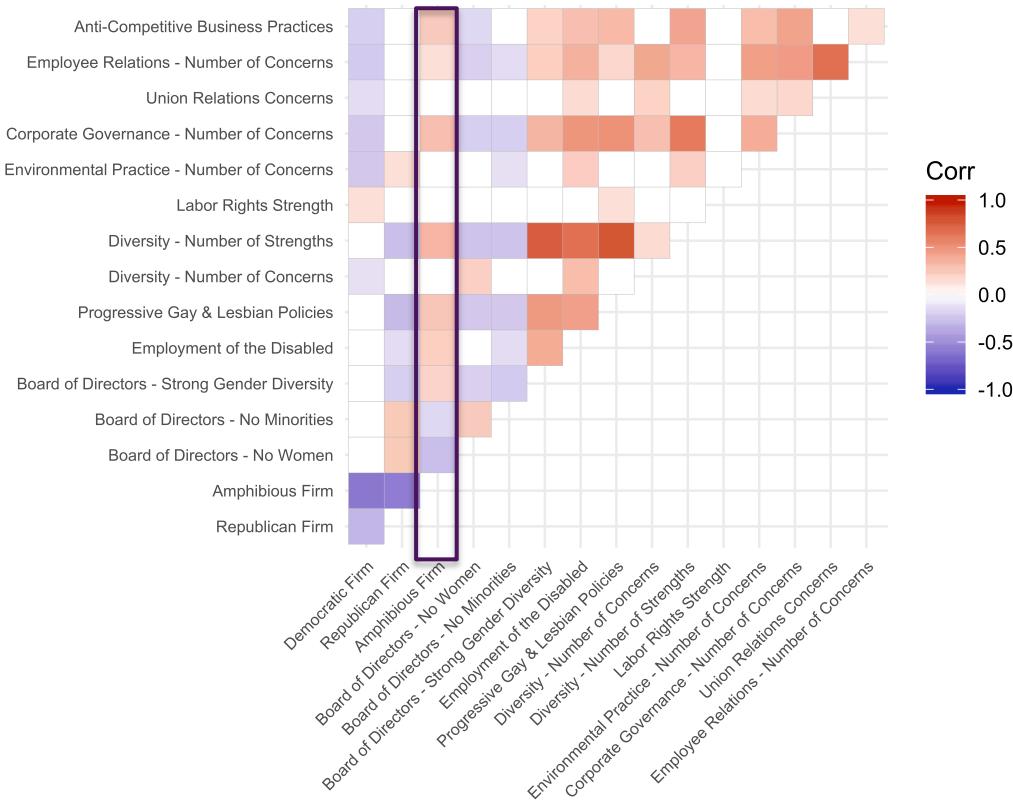
- Labor Rights Strength

Significant negative correlation with

- Anti-Competitive Business Practices
- Number of Employee Relations Concerns
- Union Relations Concerns
- Corporate Governance Concerns
- Environmental Practice Concerns
- Diversity Concerns

MSCI Environmental, Social, and Governance Ratings vs. Dynamic Time Warping HCA Classified Firm Types

Significant Correlations, HCA Clustered Firms and MSCI Data, 1991-2016



Amphibious Firms:

Significant positive correlation with

- Anti-Competitive Business Practices
- Number of Employee Relations Concerns
- Corporate Governance Concerns
- Environmental Practice Concerns
- Number of Diversity Strengths
- Progressive Gay and Lesbian Policies
- Employment of the Disabled
- Board of Directors – Gender Diversity

Significant negative correlation with

- Board of Directors – No Minorities
- Board of Directors – No Women

Conclusions

- Partisan polarization across firms has increased, particularly after 2014 during the 2016 election cycle.
- Firms can be classified as democrat, republican, or amphibious firms, and these classifications translate to discrete firm behaviors.
- *A number of mechanisms might explain these changes.* Long run changes might be explained by selection and discrimination mechanisms (affective polarization), but short term rapid gains are perhaps better explained by the activation of existing employee partisanship.
- *Further research on both fronts should be considered.*



Thank You



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Appendix Slides:

Fortune 100

Data for Fortune 100 Companies

Data for Filtered Fortune 100 Companies, Post Quality Control (ETL) 1980-2018

Data Level	Total Observations	Years Covered
Individual Contributions	2,709,772	1980-2018
Individuals x Firm x Election Cycle	396,502	1980-2018
Firms	106	1980-2018

Hierarchical Clustering Algorithm Selection

HCA Used To Study Organizational Emergence (Powell and Sandholtz 2012)

HCA Evaluation, 1980-2002

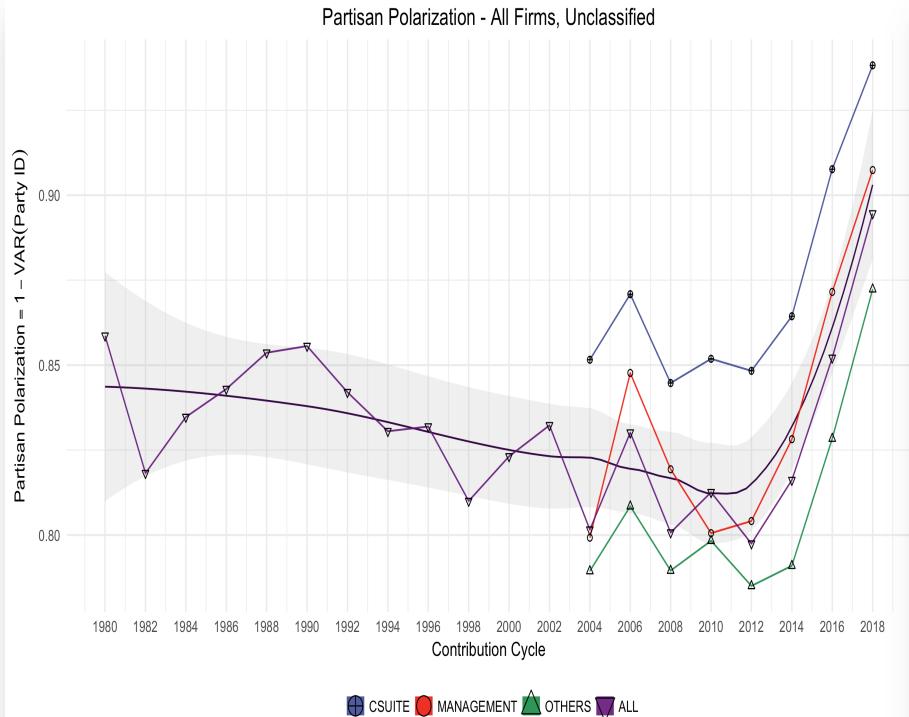
Model, Method	Coefficient
DIANNA	0.65
AGNES, UNGMA	0.53
AGNES, WPGMA	0.57
AGNES, Single Linkage	0.49
AGNES, Complete Linkage	0.67
AGNES, Ward's Method	0.84

HCA Evaluation, 2004-2018

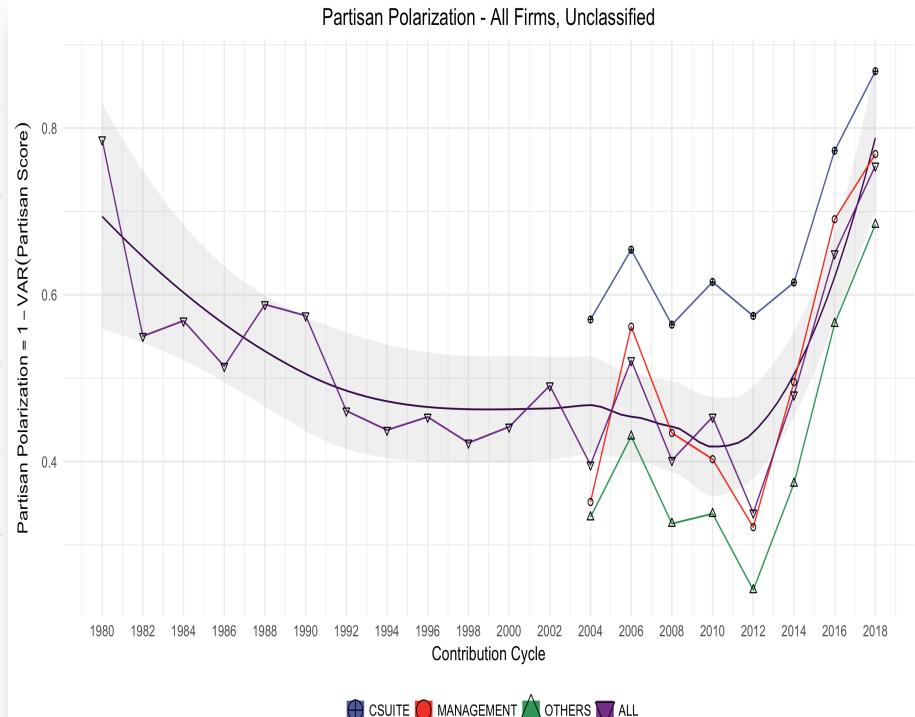
Model, Method	Coefficient
DIANNA	0.67
AGNES, UNGMA	0.49
AGNES, WPGMA	0.54
AGNES, Single Linkage	0.45
AGNES, Complete Linkage	0.70
AGNES, Ward's Method	0.88

Partisan Polarization (Using Variance) in Fortune 100 Firms, 1980-2018

Partisan Polarization (Party ID)



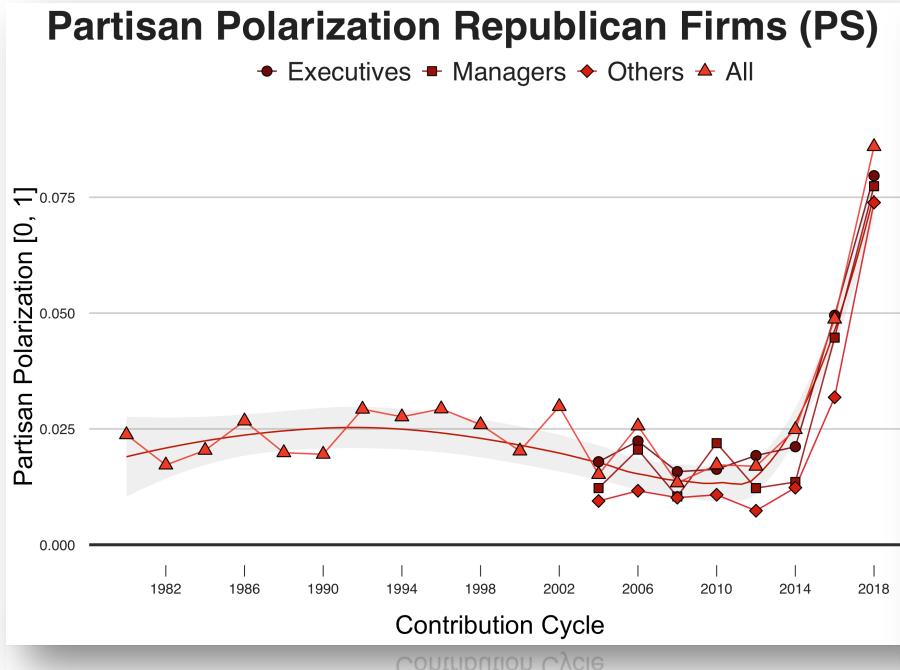
Partisan Polarization (Partisan Score)



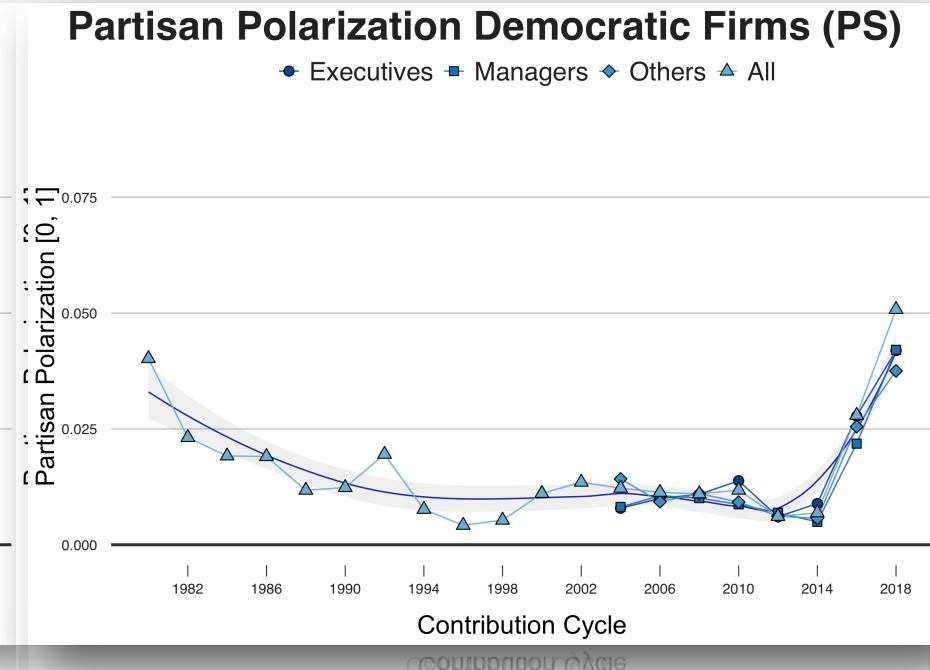
Explaining the Rise in Partisan Polarization

Activation of Partisanship Starting 2014-2016?

Republican Polarization (Partisan Score)

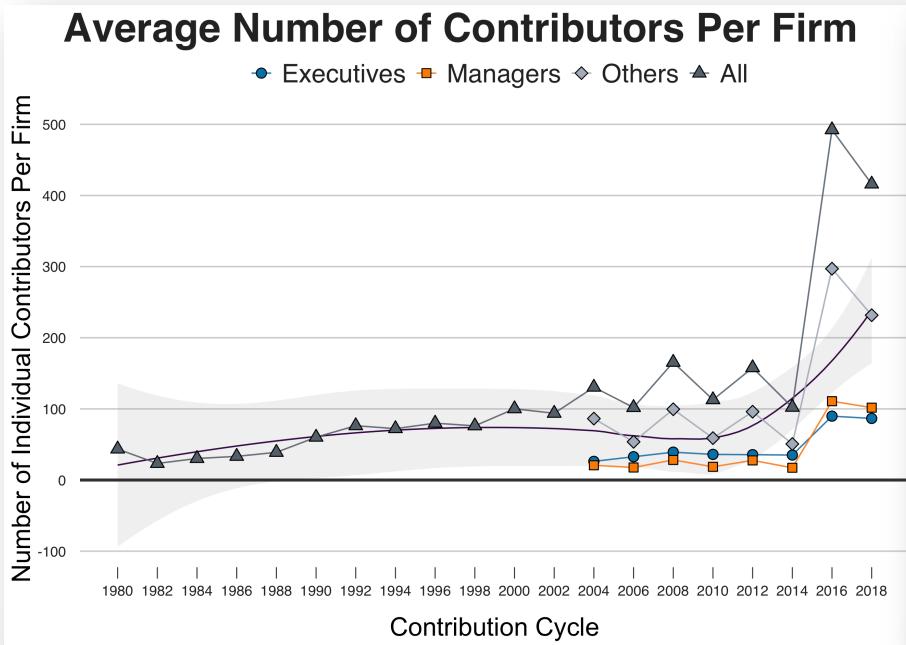


Democrat Polarization (Partisan Score)

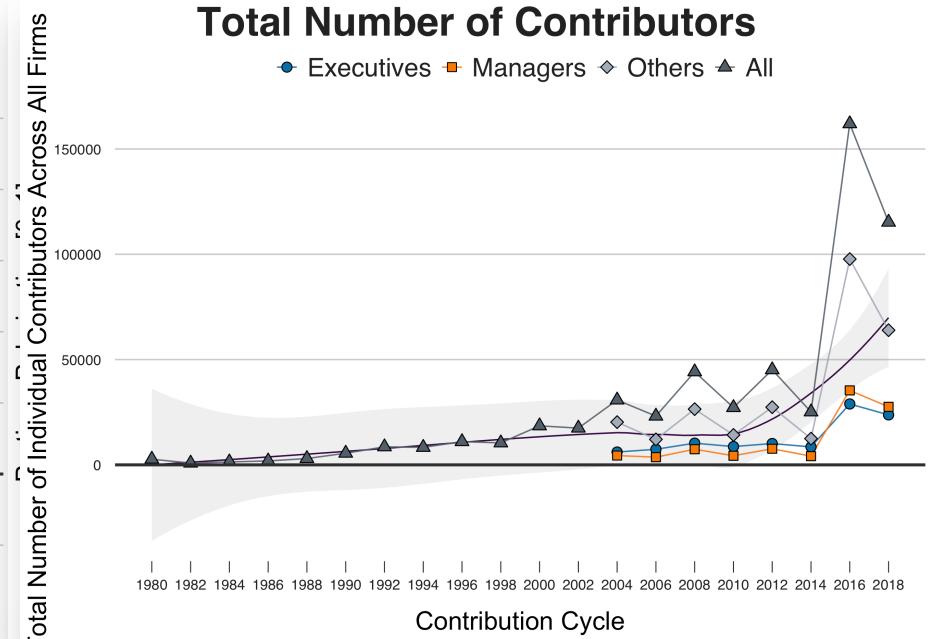


Activation of Partisanship Starting 2014-2016?

Average Individuals Per Firm



Total Individual Contributors



Dynamic Time Warping Model 1 Features

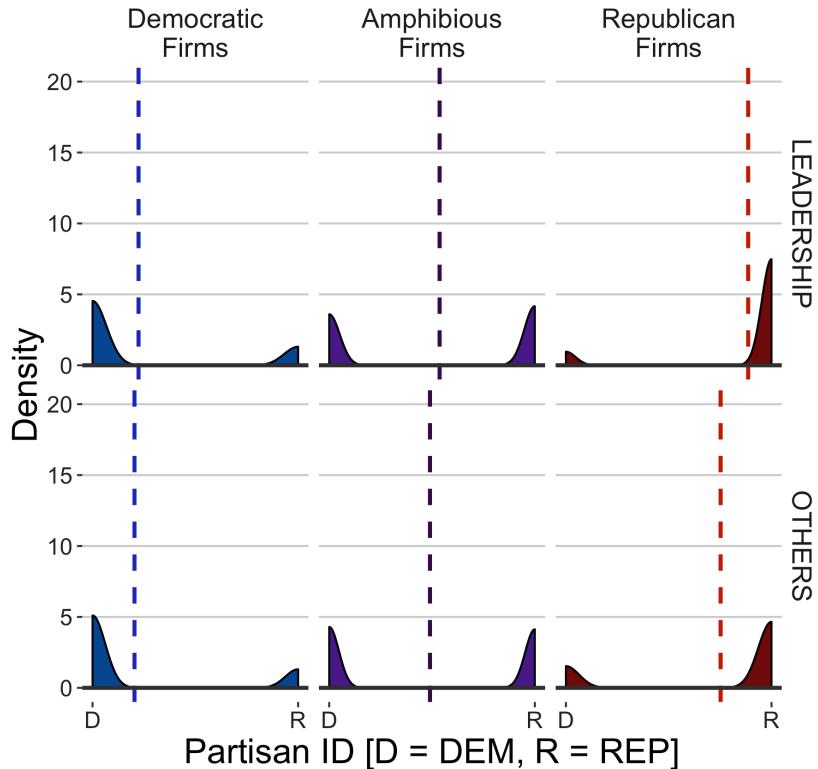
Model 1 (336 X 51 X 20)

Mean Party ID [DEM, REP]	Variance Party ID [DEM, REP]	Variance Partisan Score
Median Party ID [DEM, REP]	Skewness Party ID [DEM, REP]	Skewness Partisan Score
Mean Partisan Score	LN Kurtosis Party ID [DEM, REP]	LN Kurtosis Partisan Score
Median Partisan Score	Polarization Party ID Base	
Mean Partisan Score (Mode)	Polarization Partisan Score Base	
Mean Partisan Score (Min)	Polarization Party ID [0, 1] Scaled	
Mean Partisan Score (Max)	Polarization Partisan Score [0, 1]	

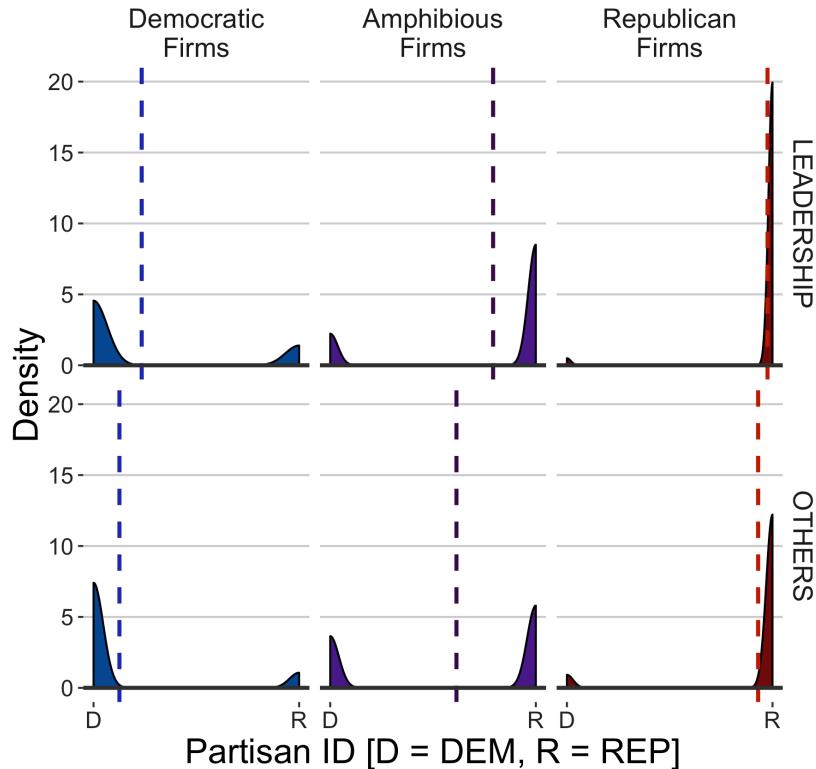
*all model features are Company X Occupational Hierarchy X Cycle
336 Companies X (17 Features X 3 Hierarchies = 51) X 20 Election Cycles*

Comparing Partisan Polarization by Firm Type and Hierarchy

Partisan Distribution by Firm Type: 2004-2012

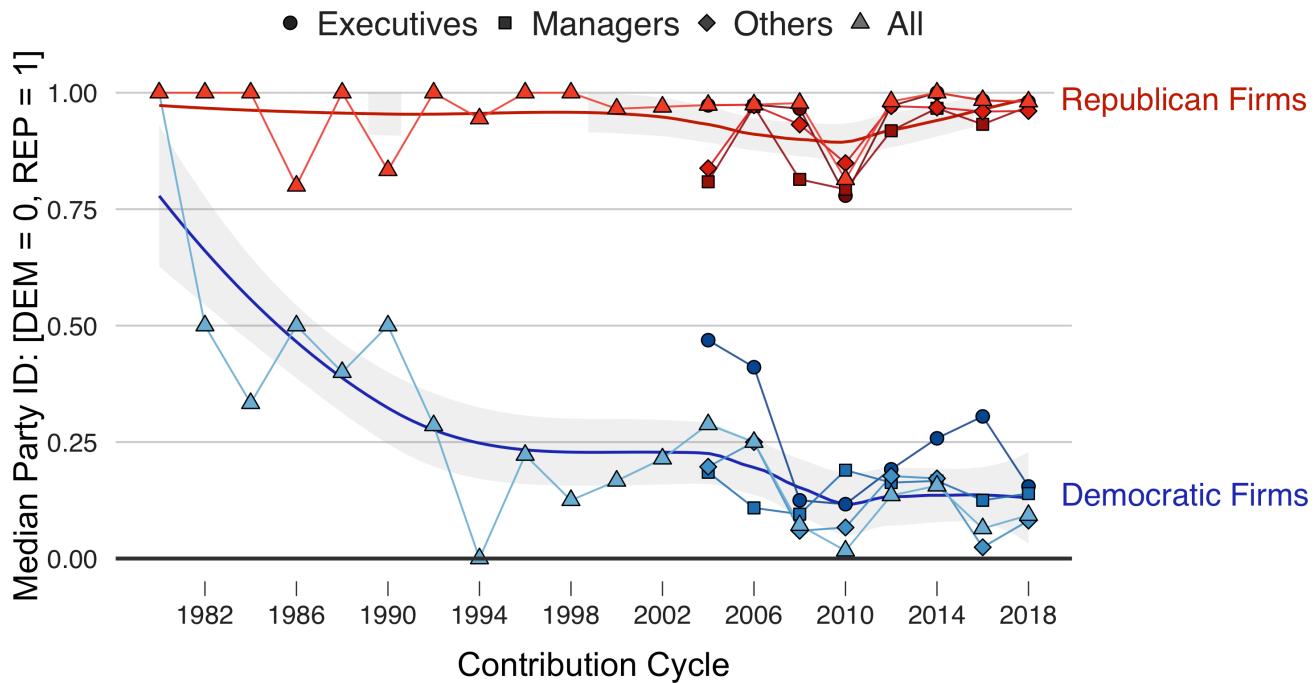


Partisan Distribution by Firm Type: 2014-2018

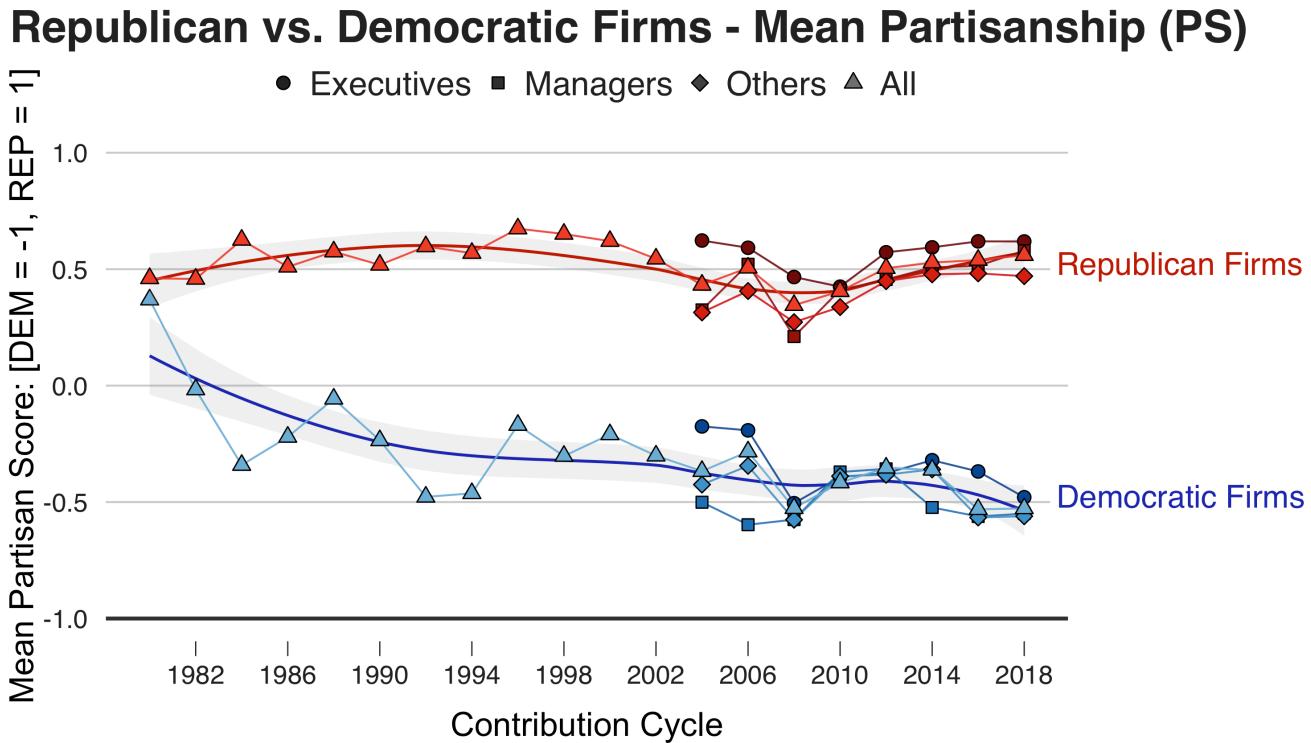


Growing Partisan Polarization Between Firms

Republican vs. Democratic Firms - Median Partisanship (PID)



Growing Partisan Polarization Between Firms



Growing Partisan Polarization Between Firms

