GOVERNANCE, FINANCIALIZATION & INSTITUTIONAL FRAGILITY:

PUBLIC SECTOR PENSIONS IN THE U.S.

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OVERVIEW

1. Motivation
2. Approach
3. Variables and Data
4. Results
5. Next Steps

MOTIVATION: INSTITUTIONAL FRAGILITY

Public sector pensions are an institutionalized source of socioeconomic stability in the U.S.

- Result of 20th Century settlement between labor and capital (Dobbin 1992, Dobbin & Boychuk 1996, Skocpol 1992), now support millions of households
- Demographic pressures make retirement income increasingly important

They are also central to the financialization of the U.S. economy

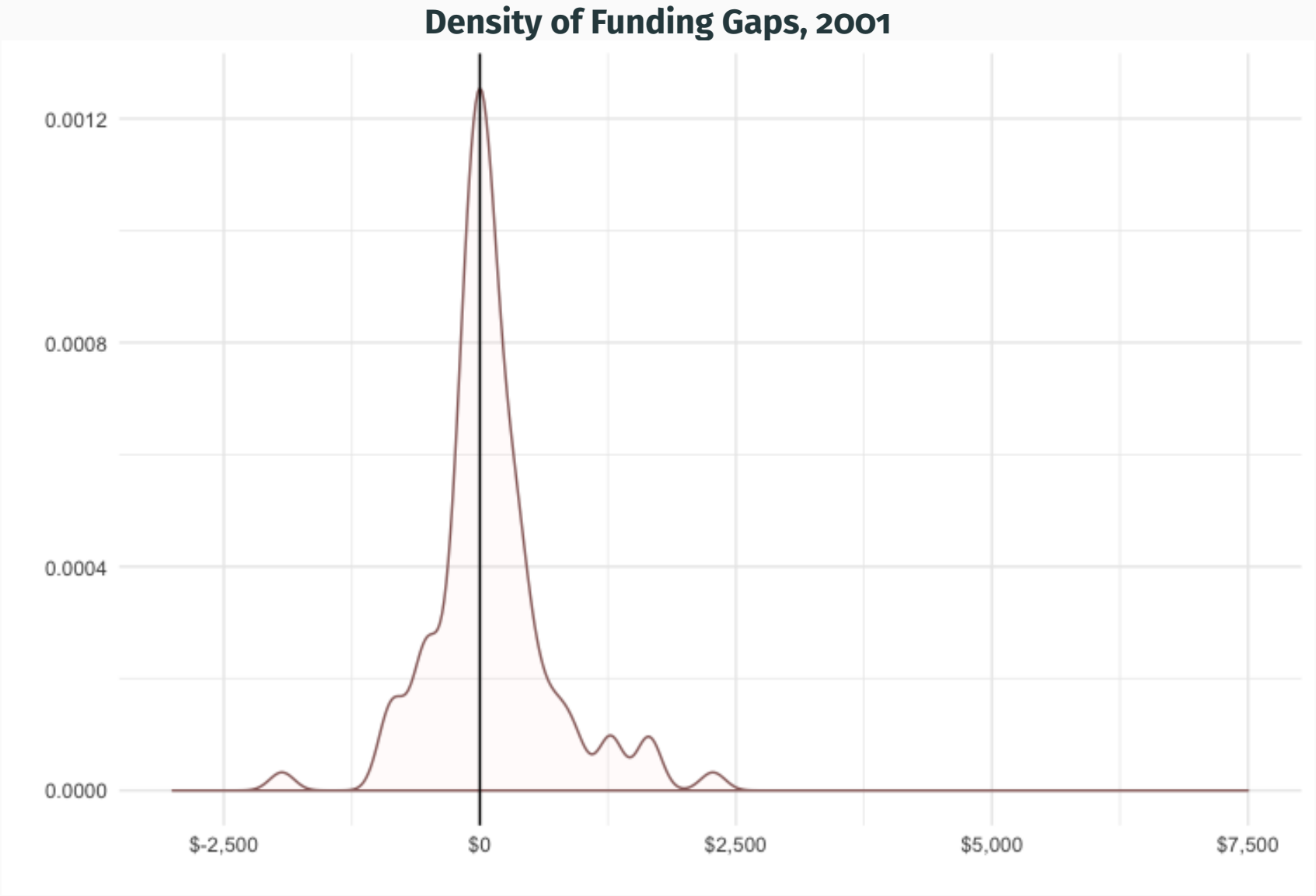
- 1974 passage of ERISA laid groundwork for vast investments in capital markets
- $3.3 trillion in assets (US Census 2014)

Yet they are also increasingly a source of political instabilities

- Funding gaps are becoming a political problem at the state and local levels (e.g. Illinois, Detroit)

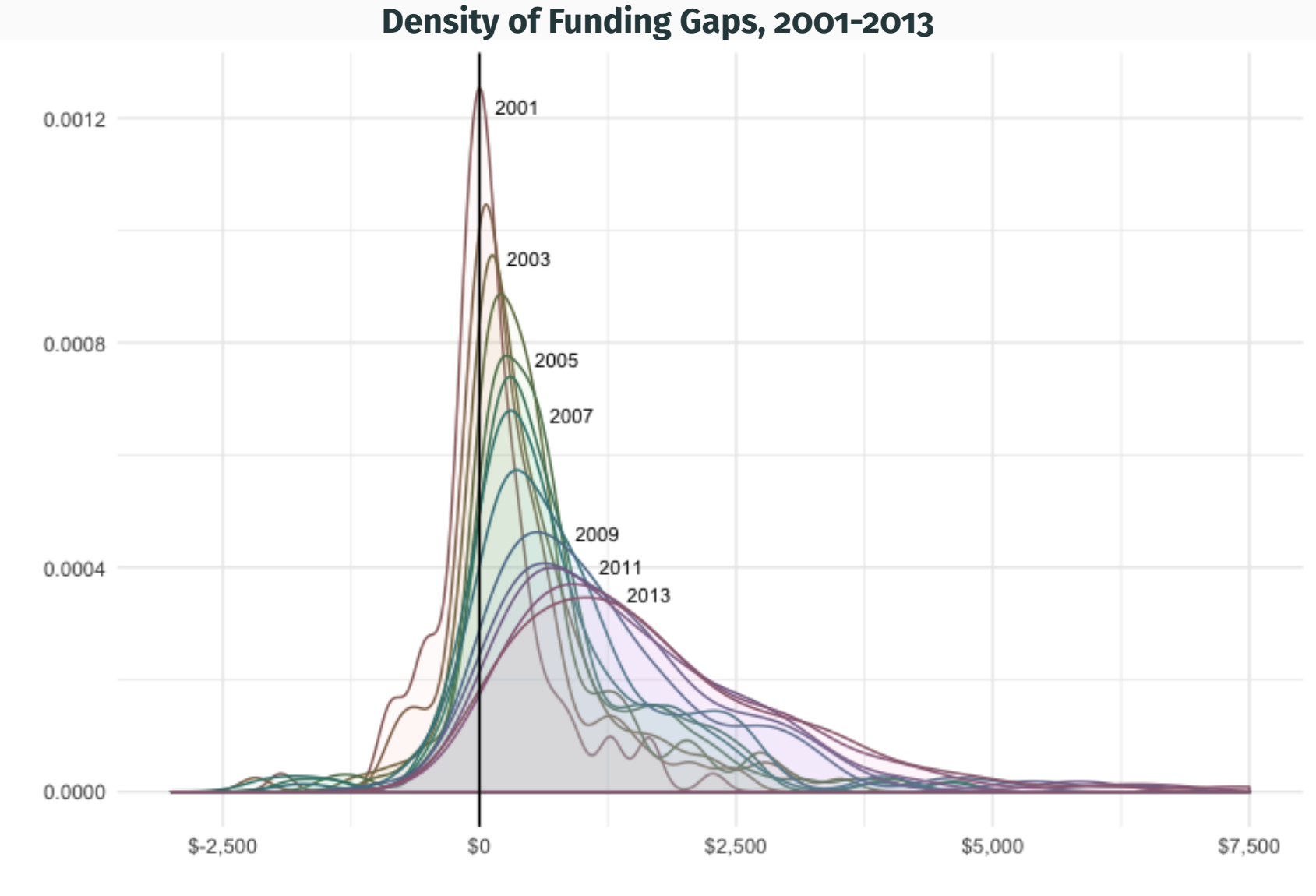
MOTIVATION: INSTITUTIONAL FRAGILITY

Public pensions began the century in general good health...



MOTIVATION: INSTITUTIONAL FRAGILITY

...but their fiscal health has deteriorated since then



MOTIVATION: FINANCIALIZATION AND GOVERNANCE

Studying public pensions can extend sociological insights into financialization

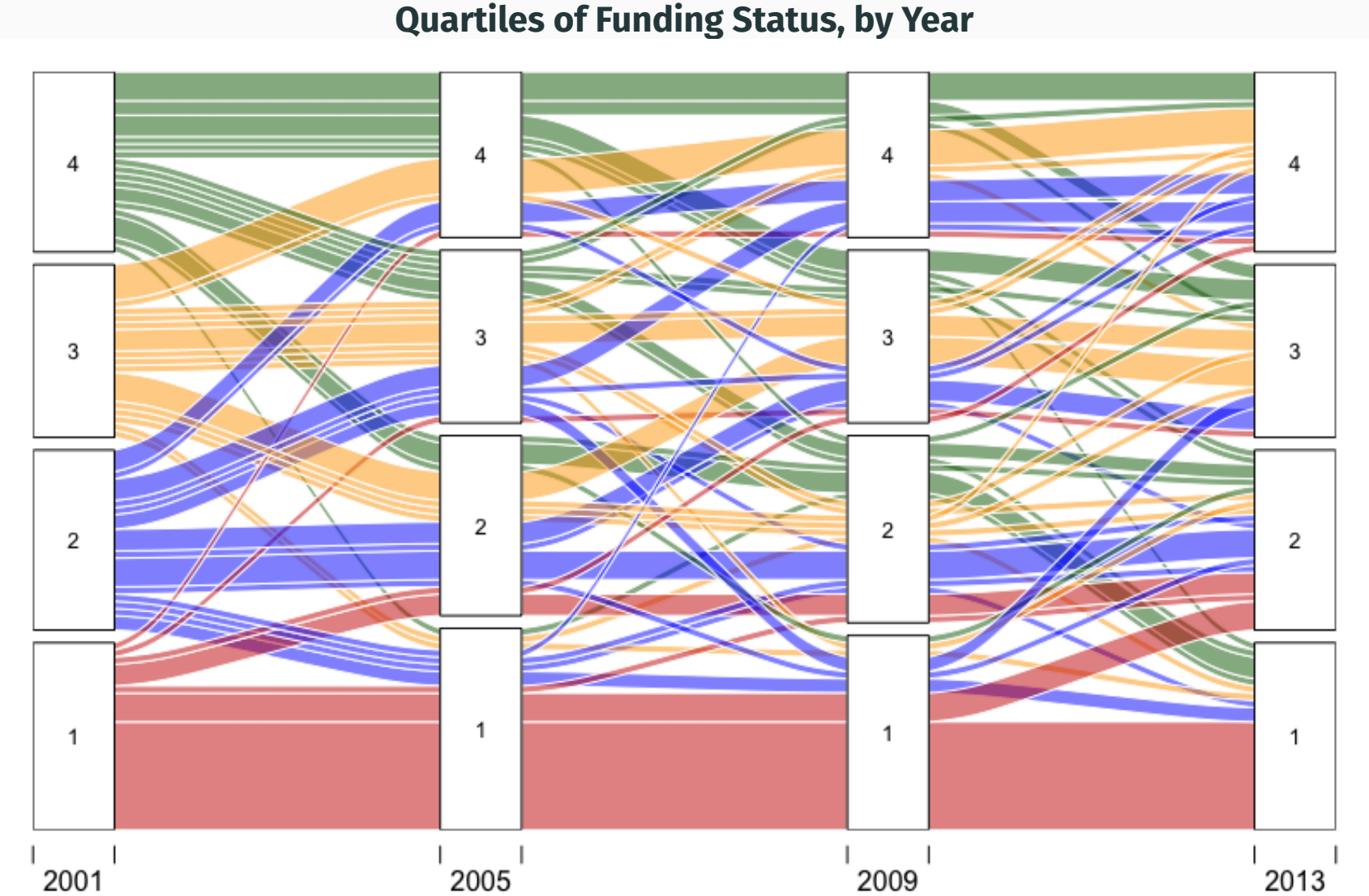
- Established work focuses largely on processes operating at the state (Krippner 2005, 2011) and/or field levels (Davis 2009, Fligstein 2001), with an emphasis on profit-driven firms
- Leaves unexamined the use of financial markets as a source of accumulation (Krippner 2005, 2011) for the state itself

Pensions introduce several new dimensions of governance, at the intersection of political, organizational, economic and fiscal sociology

- Using markets to reconcile conflicting "contracts" with citizens/taxpayers (Martin 2012) and employees creates a complex and contradictory institutional environment (Scott and Meyer 1991)

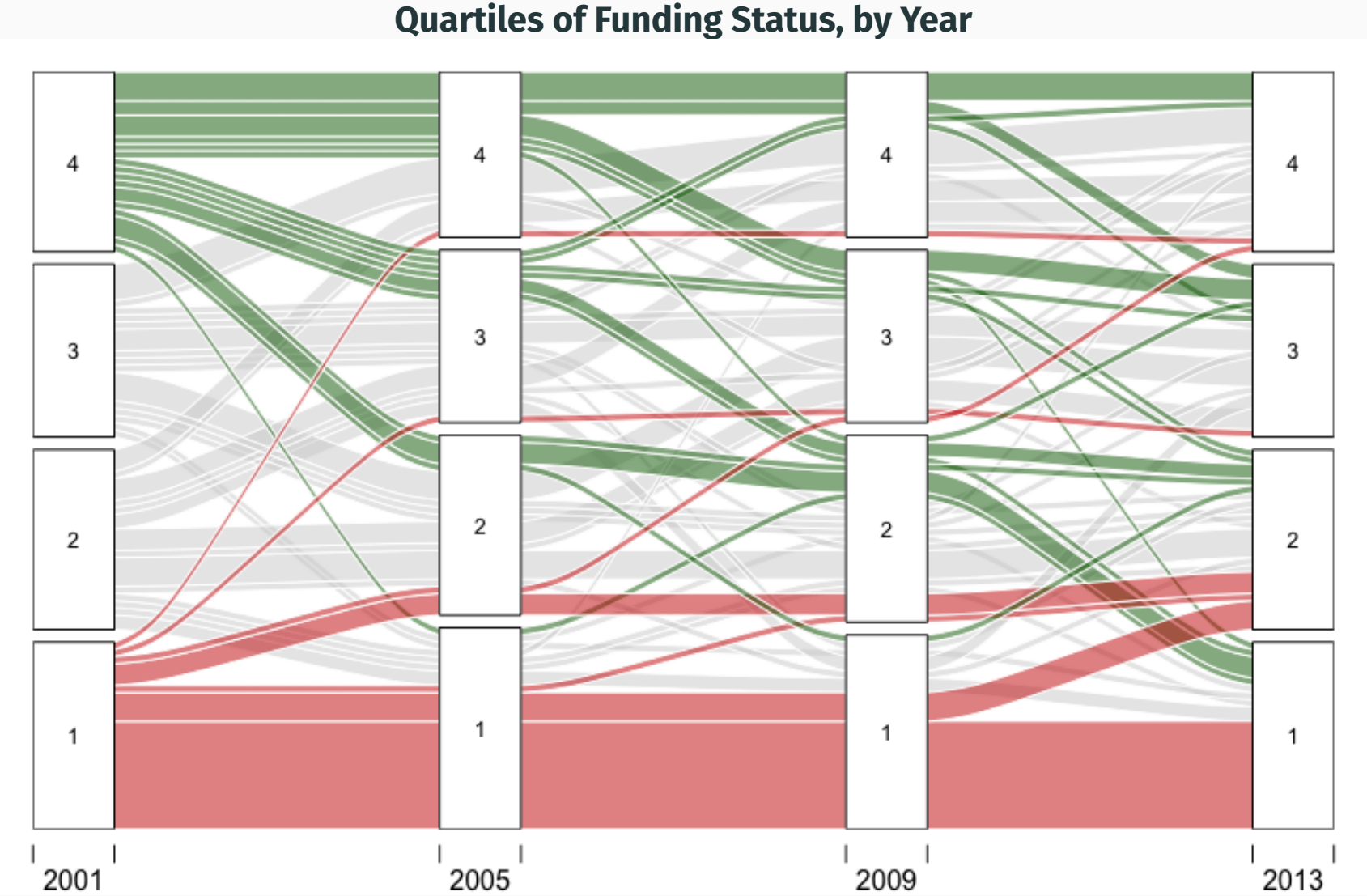
MOTIVATING GOVERNANCE: HETEROGENEOUS TRAJECTORIES

Variability in outcomes suggests variability in governance



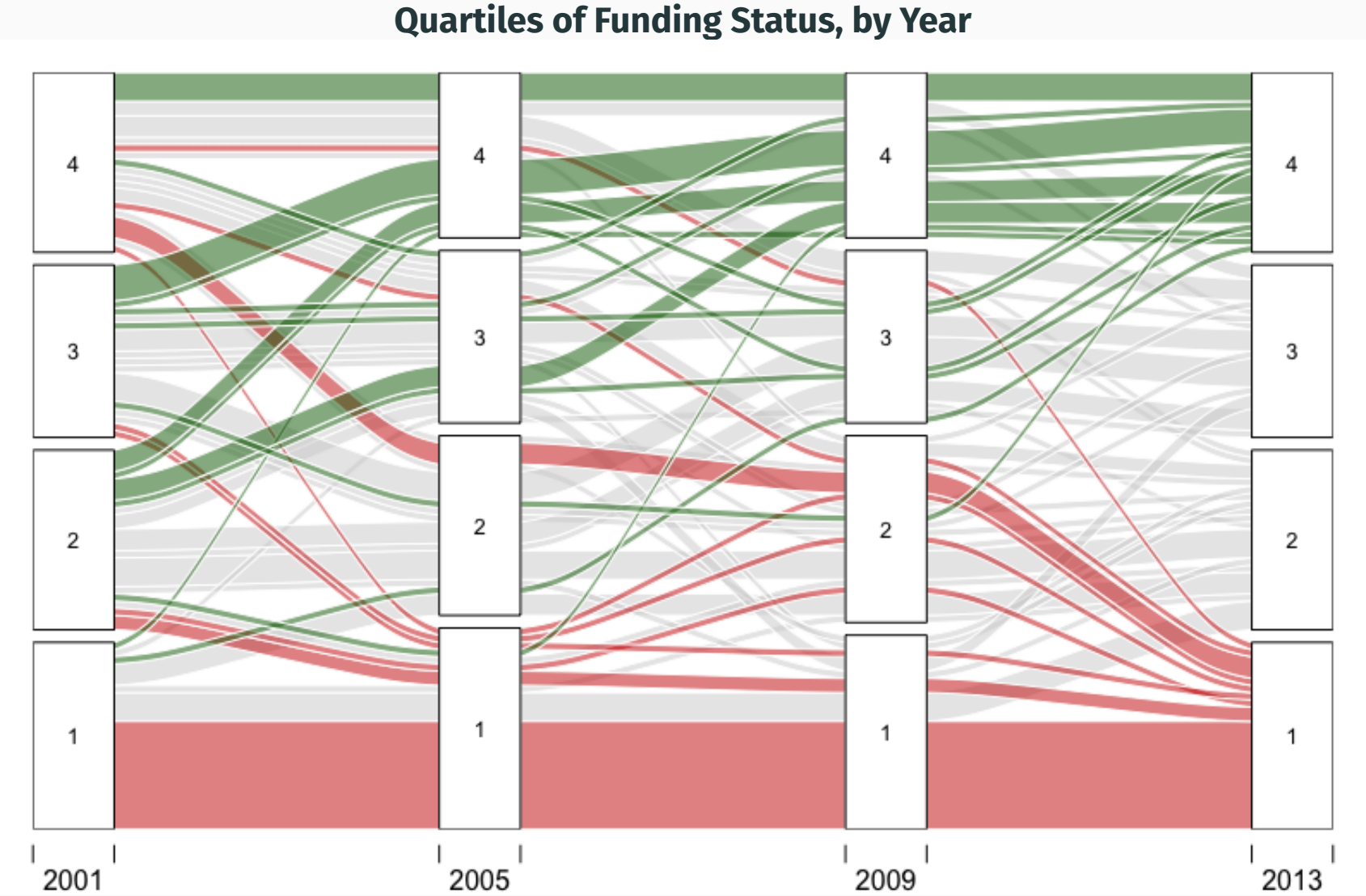
MOTIVATING GOVERNANCE: HETEROGENEOUS TRAJECTORIES

Quartile membership changes significantly over time...



MOTIVATING GOVERNANCE: HETEROGENEOUS TRAJECTORIES

...creating time-dependent outcomes



QUESTIONS AND APPROACH

Why is this important institution faring so poorly? What are the sources of heterogeneity in outcomes?

Model 1: Estimating Funding Gap

- Use 2001 to 2013 panel data in random effects prediction of Funding Gap per capita (linking pension health to political risk) based on various governance, investment, fiscal and other variables

Model 2: Estimating Funding Gap, with Volatility

- Use 2013 data only for OLS estimate of Funding Gap per capita, incorporating investment volatility

Model 3: Estimating Financialization

- Use 2001 to 2013 panel data in random effects prediction of Financialization based on various governance, investment, fiscal and other variables

Variables and Data Sources

Variable	Hypothesized	Definition	Source
Funding Gap		(Assets-Liabilities)/Popn	CRR, US Census
Financialization	−	Investment Income/Contributions	CRR
Volatility	+	SD of 1-yr Returns	CRR
Performance Gap	+	Expected Rtn - 5yr Rtn	CRR
% of Req Contribution	−	Empl. Contribution/Actuarial Rec.	CRR
Benefit Generosity	+	Avge Benefit/Median Income	CRR, US Census
Public Debt	+	Public Debt/Popn	US Census
Interest Cost	+	Public Interest/General Revenues	US Census
Plan Demographics	−	Workers/Beneficiaries	CRR

CRR is the Center for Retirement Research at Boston College
US Census is the Annual Census of Local and State Governments

RESULTS 1: PER CAPITA FUNDING GAP

Predicting Funding Gap Per Capita

Random Effects Panel Models with Arellano-Robust Errors
Full Sample and Thirds by 2013 Funded Status

	Full Sample	Best Third	Middle Third	Worst Third
Financialization	**−11.111****	−4.814*	−13.504**	*Null*
(lag)	(3.619)			
Performance Gap	**35.418*****	9.737**	33.563***	62.366***
(lag)	(459.026)			
% Contributed of Req.	−18.930	−152.426***	−93.859*	*Null*
(lag)	(53.246)			
Benefit Generosity	**1308.740****	474.044*	1256.074***	*Null*
(lag)	(450.344)			
Interest Cost	**−5.444****	*Null*	−40.317***	*Null*
	(203.256)			
Interest Cost	**−3.726***	−1.357*	*Null*	*Null*
(lag)	(145.162)			
Public Debt	**494.477*****	*Null*	155.152*	910.518**
(lag)	(136.345)			
Demographics	−129.964	*Null*	−277.719***	−633.106**
(lag)	(85.915)			
N	1320	431	454	433
R^2	0.216	0.153	0.276	0.287
Adj. R^2	0.211	0.136	0.263	0.273

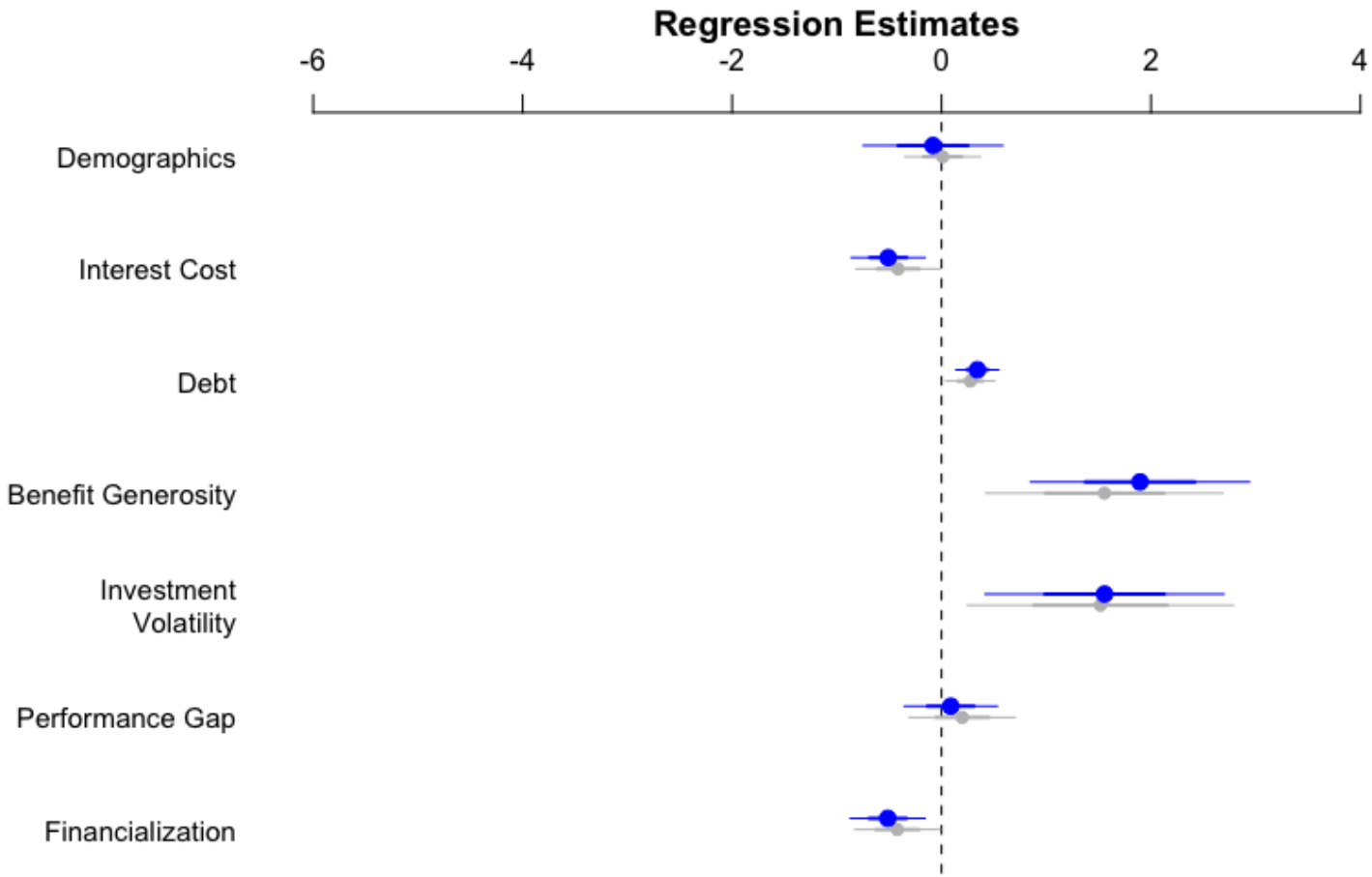
$^{***}p < 0.001$, $^{**}p < 0.01$, $^{*}p < 0.05$

RESULTS 2: 2013 ONLY

Estimating Funding Gap Per Capita

OLS Models with Influentials, Outliers Removed

2013 Data Only



RESULTS 3: FINANCIALIZATION

Predicting Financialization

Random Effects Panel Models with Arellano-Robust Errors
Full Sample and Thirds by 2013 Funded Status

	Full Sample	Best Third	Middle Third	Worst Third
Funding Gap	**−0.0003****	−0.0006*	*Null*	*Null*
(lag)	(0.0001)			
Performance Gap	−0.6566	*Null*	*Null*	*Null*
(lag)	(2.6004)			
Benefit Generosity	1.0189	2.4355*	*Null*	*Null*
(lag)	(0.5593)			
Interest Cost	0.0067	*Null*	*Null*	*Null*
	(0.2077)			
Interest Cost	−0.0176	*Null*	*Null*	*Null*
(lag)	(0.2096)			
Public Debt	**0.2777*****	*Null*	*Null*	*Null*
(lag)	(0.0800)			
1-yr Return	**0.265*****	0.273***	0.278***	0.246***
(lag)	(1.7834)			
Demographics	**0.2521****	0.3470***	*Null*	*Null*
(lag)	(0.0838)			
Investment Risk	−0.0644	*Null*	*Null*	*Null*
(lag)	(0.8040)			
N	1311	427	453	430
R^2	0.610	0.622	0.644	0.572
Adj. R^2	0.607	0.614	0.637	0.562

$^{***}p < 0.001$, $^{**}p < 0.01$, $^{*}p < 0.05$

SUMMARIZING RESULTS

Summarizing Main Effects

	DV=Funding Gap RE Panel	DV=2013 Funding Gap OLS	DV=Financialization RE Panel
Financialization *(lag)*	− * *	− * *	
Funding Gap *(lag)*			− * *
Performance Gap *(lag)*	+ * **	*Null*	*Null*
Benefit Generosity *(lag)*	+ * *	+ * **	*Null*
Interest Cost	− * *	− * *	*Null*
Interest Cost *(lag)*	−*	*Null*	
Public Debt *(lag)*	+ * **	+ * **	+ * **
Demographics *(lag)*	*Null*	*Null*	+ * *
1-yr Return *(lag)*			+ * **
Investment Risk *(lag)*			*Null*
N	1320	87	1311

$^{***}p < 0.001$, $^{**}p < 0.01$, $^{*}p < 0.05$

PRELIMINARY CONCLUSIONS

- Financialization is double-edged sword, with *returns* reducing funding gaps but *volatility* increasing them
- The benefits also appear to be limited to funds with stronger investment performance
- Public debt and generous benefits strongly predict both pension underfunding and greater financialization
- Variation by end-point outcomes implies a role for governance to be explored further

NEXT STEPS: REFINING DATA AND ANALYSIS

- Investigate interest cost negative effect
- Expand data set to include fiscal 2014 and 2015
- Include broader set of pensions by using multilevel/mixed models
- Examine heterogeneity by using mixed model quantile regression
- Perhaps model other aspects of decision-making and financialization

Thank you!

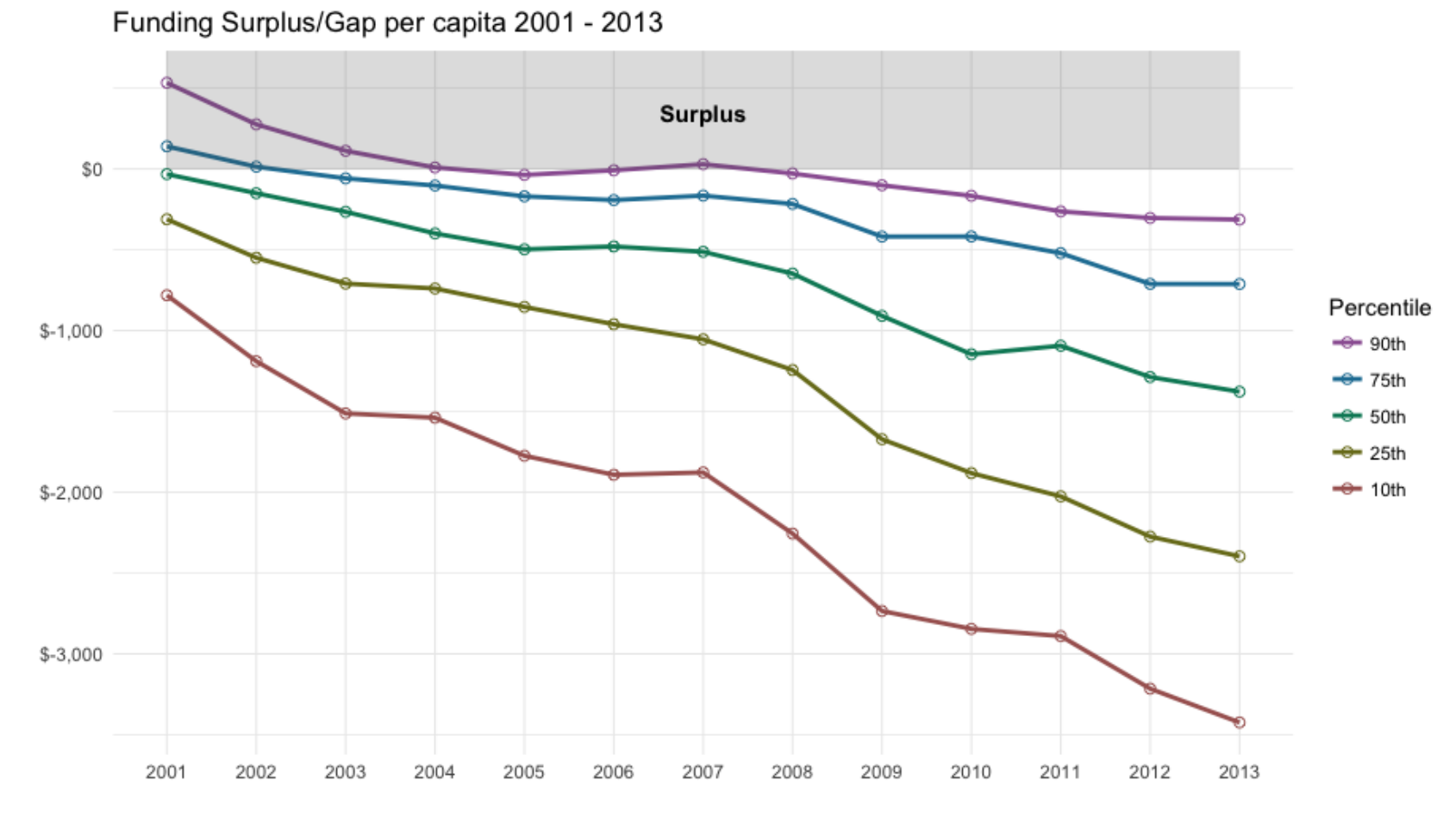
APPENDIX

DESCRIPTIVES

Table 1: Descriptive Statistics: Full CRR Sample, 2001 - 2013

Variable	N	Mean	St. Dev.	Min	Max
Funding Gap (pc)	1,382	900	1107	−3,106	7,393
Actuarial Assets		20,870,736	32,071,286	190,116.7	282,991,008
Actuarial Liabilities		25,377,734	37,286,229	254,255	375,019,000
UAAL (Gap)		4,499,323	8,423,337	−17,705,000	93,091,000
Financialization	1,383	1.668	4.162	−47.589	28.576
% Contribution	1,384	0.946	0.386	0.000	8.307
Generosity	1,391	0.446	0.179	0.000	1.091
Avge. Benefit		21,608	9,256	1,126	62,040
Local HH Income		47,941	7,139	29,359	71,836
Performance Gap	1,343	0.024	0.036	−0.177	0.097
Discount/Expectation		0.079	0.004	0.055	0.090
5-yr Return		0.055	0.036	−0.015	0.257
Ideology	1,391	0.101	0.808	−1.479	1.431
Public Debt (pc)	1,391	5,910	3,166	49	17,588
Public Interest Cost	1,391	0.053	0.035	0.005	0.317
Interest Payments		1,973,690	2,963,891	6,850	19,391,998
Public Revenue		40,052,895	54,663,962	305,352	345,681,364
Active Risk	1,376	0.628	0.082	0.121	0.970
Equity Allocation		0.545	0.111	0.000	0.780
Alternatives Allocation		0.079	0.088	0.000	0.566
Demographics	1,383	1.919	0.972	0.016	14.906

FUNDING QUANTILES, PER CAPITA



PREDICTING PER CAPITA FUNDING GAP

Table 2: Random Effects Panel Models with Arellano-Robust Errors
Full Sample and Thirds by 2013 Funded Status

	Full Sample	Best Third	Middle Third	Worst Third
Financialization	−11.111**	−4.814*	−13.504**	−9.348
(lag)	(3.619)	(2.219)	(4.792)	(9.166)
Performance Gap	3541.760***	973.731**	3356.341***	6236.624***
(lag)	(459.026)	(335.146)	(577.574)	(1021.305)
% Contributed of Req.	−18.930	−152.426***	−93.859*	233.114
(lag)	(53.246)	(38.889)	(44.752)	(164.571)
Benefit Generosity	1308.740**	474.044*	1256.074***	613.063
(lag)	(450.344)	(220.669)	(301.170)	(1134.765)
Interest Cost	−544.409**	−108.698	−403.166***	−574.149
	(203.256)	(93.060)	(102.112)	(493.936)
Interest Cost	−372.562*	−135.668*	31.589	−885.997
(lag)	(145.162)	(61.957)	(113.653)	(592.793)
Public Debt	494.477***	147.156	155.152*	910.518**
(lag)	(136.345)	(75.687)	(71.599)	(289.461)
Demographics	−129.964	−36.911	−277.719***	−633.106**
(lag)	(85.915)	(19.865)	(55.476)	(218.863)
N	1320	431	454	433
R^2	0.216	0.153	0.276	0.287
Adj. R^2	0.211	0.136	0.263	0.273

$^{***}p < 0.001$, $^{**}p < 0.01$, $^{*}p < 0.05$

PREDICTING FINANCIALIZATION

Table 3: Random Effects Panel Models with Arellano-Robust Errors
Full Sample and Thirds by 2013 Funded Status

	Full Sample	Best Third	Middle Third	Worst Third
Funding Gap	−0.0003**	−0.0006*	−0.0002	−0.0003
(lag)	(0.0001)	(0.0003)	(0.0008)	(0.0001)
Performance Gap	−0.6566	2.5400	−3.5464	0.4629
(lag)	(2.6004)	(6.0450)	(6.0039)	(2.1134)
Benefit Generosity	1.0189	2.4355*	−0.6718	0.8006
(lag)	(0.5593)	(1.0838)	(0.9919)	(0.6572)
Interest Cost	0.0067	−0.4217	0.2663	0.6877
	(0.2077)	(0.3725)	(0.2280)	(0.5361)
Interest Cost	−0.0176	0.2546	−0.1958	−0.5946
(lag)	(0.2096)	(0.2757)	(0.3284)	(0.5579)
Public Debt	0.2777***	0.3619	0.1780⊙	0.2359
(lag)	(0.0800)	(0.2307)	(0.0942)	(0.2310)
1-yr Return	26.5189***	27.2574***	27.7956***	24.5770***
(lag)	(1.7834)	(2.3273)	(3.4430)	(3.3566)
Demographics	0.2521**	0.3470***	−0.1123	0.2192
(lag)	(0.0838)	(0.0750)	(0.2777)	(0.2287)
Investment Risk	−0.0644	0.2563	0.0846	−0.7316
(lag)	(0.8040)	(1.7075)	(1.7643)	(0.9670)
N	1311	427	453	430
R^2	0.610	0.622	0.644	0.572
Adj. R^2	0.607	0.614	0.637	0.562

$^{***}p < 0.001$, $^{**}p < 0.01$, $^{*}p < 0.05$

Table 4: Random Effects Panel Models with Arellano-Robust Errors

	DV=Funding Gap	DV=Financialization
Financialization	−11.111**	
(lag)	(3.619)	
Funding Gap		−0.0003**
(lag)		(0.0001)
Performance Gap	3541.760***	−0.6566
(lag)	(459.026)	(2.6004)
Benefit Generosity	1308.740**	1.0189
(lag)	(450.344)	(0.5593)
Interest Cost	−544.409**	0.0067
	(203.256)	(0.2077)
Interest Cost	−372.562*	−0.0176
(lag)	(145.162)	(0.2096)
Public Debt	494.477***	0.2777***
(lag)	(136.345)	(0.0800)
Demographics	−129.964	0.2521**
(lag)	(85.915)	(0.0838)
1-yr Return	*NA*	26.5189***
(lag)		(1.7834)
Investment Risk	*NA*	−0.0644
(lag)		(0.8040)
N	1320	1311

$^{***}p < 0.001$, $^{**}p < 0.01$, $^{*}p < 0.05$

RESULTS: OLS

Table 5: OLS Regression Using 2013 Data

	Original	Less Outliers
(Intercept)	6.165**	5.468**
	(2.098)	(1.863)
Financialization	**−0.422***	**−0.514****
	(0.204)	(0.178)
Performance Gap	0.197	0.088
	(0.253)	(0.222)
Volatility	**1.517***	**1.557****
	(0.635)	(0.570)
Generosity	**1.556****	**1.895*****
	(0.566)	(0.523)
Public Debt	**0.275***	**0.342****
	(0.116)	(0.101)
Interest Cost	**−0.416***	**−0.509****
	(0.200)	(0.176)
Demographics	0.010	−0.082
	(0.180)	(0.333)
R^2	0.207	0.298
Adj. R^2	0.140	0.236
Num. obs.	92	87
RMSE	0.883	0.753

$^{***}p < 0.001$, $^{**}p < 0.01$, $^{*}p < 0.05$

PRELIMINARY CONCLUSIONS

- Limited evidence that financialization has driven outcomes
- Effects of prior promises are a larger driver than basic demographics
- Endpoint dependence and volatile markets introduce significant potential for disruption