The Political Economy of Financial Innovation:

Evidence from Local Governments

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Motivation

The political economy of financial innovation has arguably played an important role in the recent financial crisis (Rajan (2010), Zingales (2015))

The role of political incentives in the development of innovative financial products:

- still largely debated
- difficult to identify empirically (small samples)

Research Question

- Do innovative financial products amplify politician agency costs?
- And If they do, through which channels can these instruments benefit politicians' strategies?
- Or do politicians misunderstand these innovations?

The Structured Loan Market

- An innovative type of loans used by local governments

- Thousands of local governments contaminated:

3000+ in France alone, with aggregate structured debt totaling more than EUR20bn (20% of total debt). Numerous examples also in Austria, Belgium, Germany, Greece, Italy, Norway, Portugal, US, etc...

An Example

The City of Boston is being proposed by its bank a standard vanilla loan:

Notional:	USD20m
Maturity:	20 years
Coupon:	**4.50%**, annual

Or, an FX-linked loan, with same notional and maturity:

Coupon:

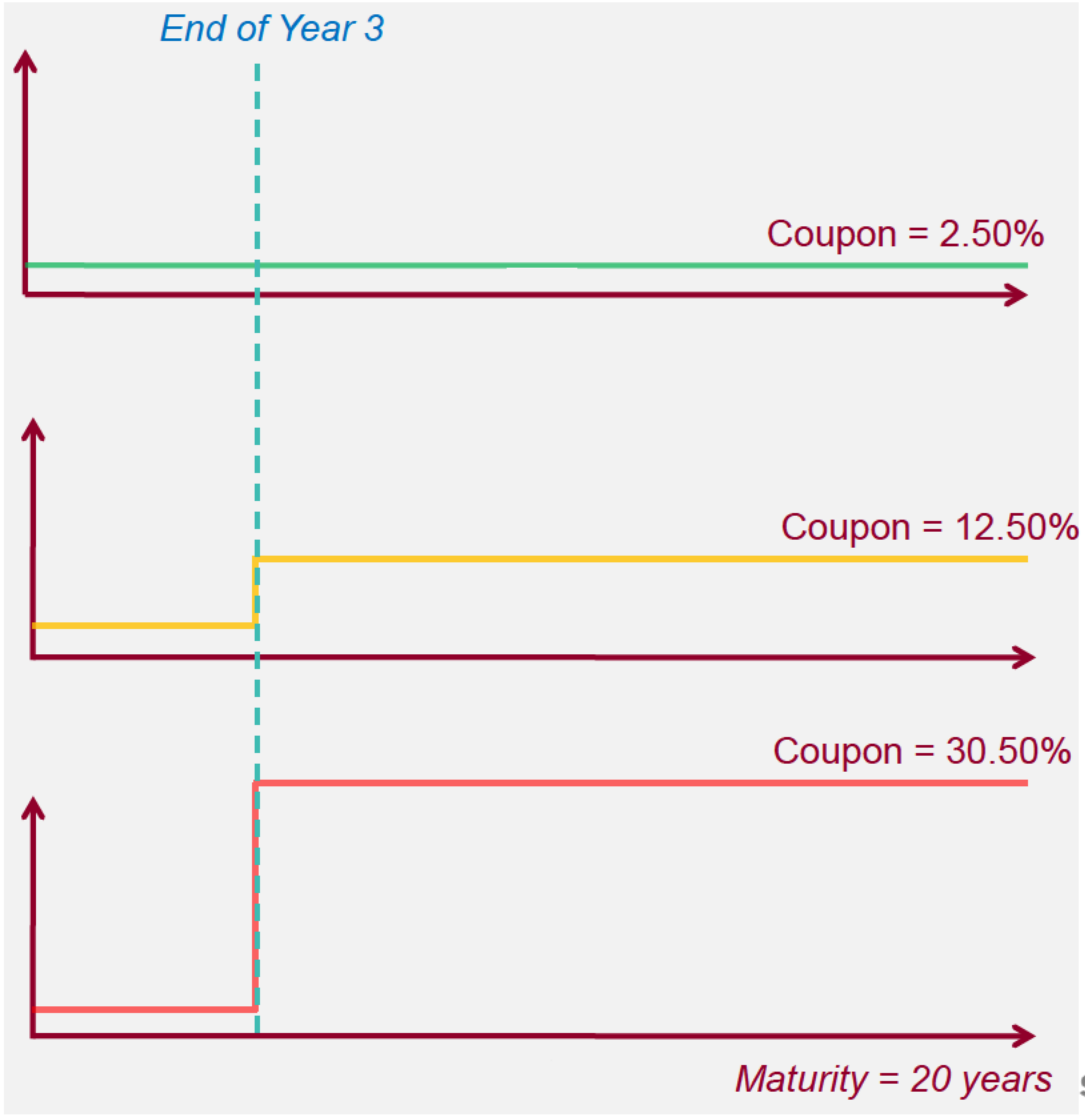
Y1-3:	**2.50%**
Y4-20:	**2.50% + Max(1.00 – EURUSD, 0)**, uncapped

The city is **selling** a put option on EURUSD with a strike at 1.00

The put is OTM as EURUSD is currently at 1.10

Vanilla loan coupon:	***4.50%***
if out-of-the-money:	***-2.00%***
if in-the-money:	***-2.00% + (1.00-EURUSD)***

Potential Scenarios



EURUSD remains at 1.10

Average coupon: **2.50%**

EURUSD drops to 0.90

Average coupon: **11.00%**

EURUSD drops to 0.72

Average coupon: **26.30%**

Main Results

- Empirical evidence consistent with politicians **strategically using risky innovative financial products** for their own interest:
  - Probability to use structured loans increases with incentive to hide actual cost of debt.
  - Politicians running in politically contested areas are more inclined to use structured loans.
  - Structured loan transactions more frequent shortly before elections than after them

- **Real effects** of structured loan usage:
  - Issuing structured loans helps politicians getting re-elected (IV).
  - Politicians use the cash flows obtained from structured loans to offer lower local taxes, and not to increase investments (IV).
- Structured loan usage is **hard to reconcile with a sophistication story**

Market Background

- Budget relief for the period during which the coupon is guaranteed (potentially until the next election)
- French local-government accounting standards do not require derivatives transactions to be disclosed and marked-to-market.
- Implicit guarantee by the central government → low interest rates and no collateral required.
- Highly profitable transactions for the banks.

Data

Dataset A

Debt portfolios of 293 large local governments provided by a leading consulting firm

Sample:

25 Regions

96 departments

76 intercities

96 cities

Total: 293 local governments

EUR 52bn notional of debt, of which EUR 10.4bn of structured products

Contains **portfolio level information** for each local authority: total debt, breakdown between vanilla and structured debt, breakdown of structured debt by type, average maturity.

Dataset B

Entire structured debt portfolio of DEXIA

Sample:

16 regions

66 departments

539 intercities

1,588 cities

288 hospitals

115 social housing agencies

129 others (airports, harbors, schools, chambers of commerce, nursing homes)

Total: 2,741 local governments

EUR 23.7bn notional of structured products

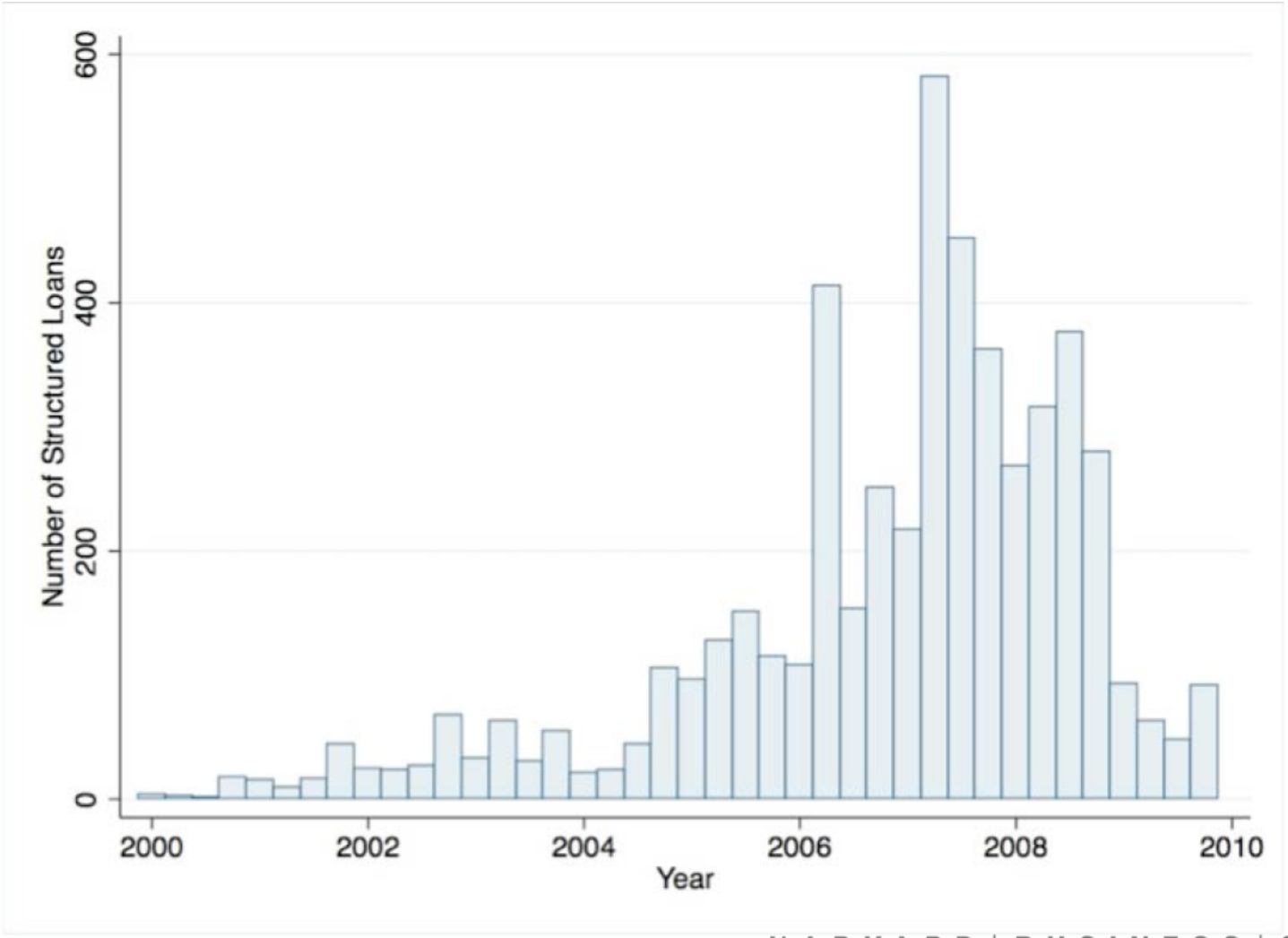
Contains **loan level information for each structured contract** with Dexia: notional, type of product, maturity, *mark to market,* transaction date.

+ accounting data, mayor demographics, and GPS coordinates

Debt Profile of Local Governments

				Amount		% Total Debt	
(in Million Euros)	N	Aggregate	% Use	Mean	Max	Mean	Max
Dataset A: Local Government Debt Portfolios							
Total Debt	293	51,994.7	95.6%	177.5	1,850.5	-	-
Standard Loans and Bonds	293	34,611.5	94.9%	118.1	1,265.6	66.6%	100%
Revolving Facilities	293	6,953.2	58.4%	23.7	646.2	13.4%	100%
Structured Loans	293	10,429.9	72.4%	35.6	648.3	20.1%	95.5%
High-Risk Str. Loans	293	4,372.0	43.0%	14.9	509.9	8.4%	71.7%
Dataset B: Loan Level Data on Structured Loans							
Total Debt	1,579	33,423.1	100.0%	21.2	1,870.50	-	-
Structured Loans	2,742	23,680.0	100.0%	8.6	459.3	49.7%	-
High-Risk Str. Loans	2,742	13,462.0	42.7%	4.9	459.3	28.3%	-
Negative MtM	2,742	3,884.1	99.1%	1.4	147.4	8.1%	-
# Structured Loans	2,742	-	-	1.9	20	-	-

Number of Transactions



Hiding Cost of Debt

	Dataset A					Dataset B	
	Probit		Ordered	Magnitude		Probit	
	Structured	High-Risk	Probit	Structured	High-Risk	Structured	High-Risk
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Debt/Population	2.081***	0.679***	0.817***	12.831***	0.021**	0.329***	0.255***
	4.29	7.53	8.07	7.71	4.32	3.13	3.18
Equipment Expenditure/Pop.	-0.004***	-0.001*	-0.002***	-0.02	-0.000**	-0.001	0.000
	-3.71	-1.67	-2.88	-2.08	-3.29	-0.90	-0.08
Wages/Operating Expenditure	3.809***	0.965	2.350***	-0.592	0.006	-0.462	0.409
	5.51	0.94	4.38	-0.04	0.23	-0.65	0.39
Debt Average Maturity	0.075***	0.057***	0.083***	1.204**	0.004**	-	-
	2.99	3.05	4.94	3.65	3.75		
Log (Population)	0.070***	0.085***	0.082***	1.110**	0.003**	1.514***	1.533***
	3.56	8.13	18.87	5.50	4.97	28.55	19.77
Lender Relationship FE	Yes	Yes	Yes	Yes	Yes	-	-
Local Government Type FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
County FE	-	-	-	-	-	Yes	Yes
Pseudo R2 / R2	0.304	0.181	0.129	0.243	0.259	0.432	0.438
Number of Observations	275	275	275	263	263	25,033	22,296

Politically Contested Areas

	Structured Debt /Total Debt		Mark to Market /Total Debt		High-Risk Str. Debt /Total Debt	
	(1)	(2)	(3)	(4)	(5)	(6)
Years in Power	-0.1683*	-0.1761**	-0.0401**	-0.0373**	-0.0785*	-0.1245***
	-2.97	-4.94	-5.37	-6.90	-3.10	-9.91
Right-Wing Dummy		1.5221***		0.0204		2.8585**
		9.52		0.48		7.30
Log (Population)		-5.9739*		-0.8441*		-3.2835*
		-3.42		-2.91		-3.37
Local Gov. Type FE	Yes	Yes	Yes	Yes	Yes	Yes
R2 / Pseudo R2	0.1267	0.1603	0.0513	0.0614	0.0507	0.0665
Observations	389	389	389	389	389	389

Effect of Election Timing (1/2)

- Test whether local governments engage more frequently in structured loans prior to an election than after

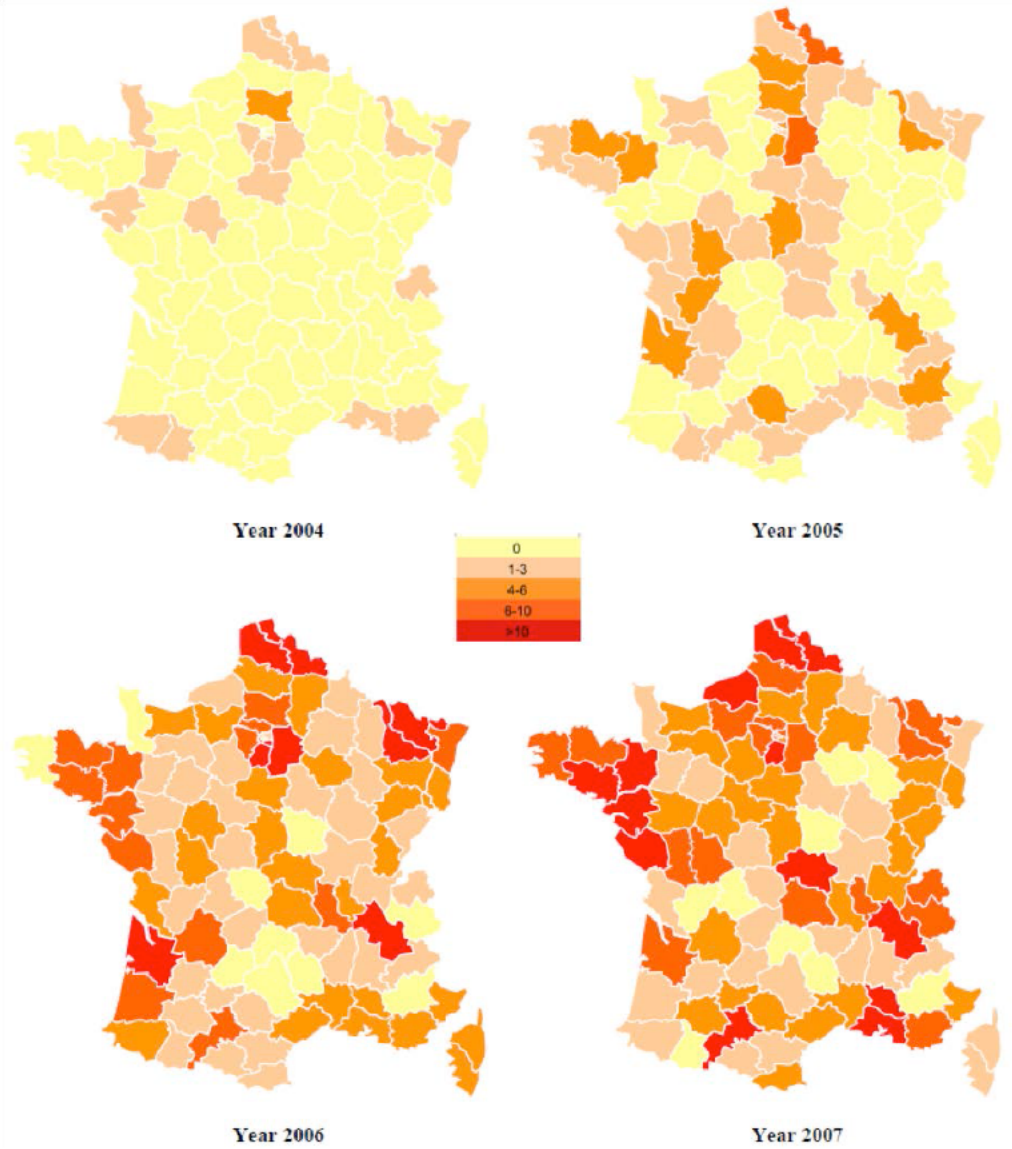
- Treatment group includes counties, municipalities, and intercities that held elections at the end of 2008Q1

- Control group consists of regions, whose elections were in 2010, and public entities with no elections (e.g., hospitals and social housing managers).

Effect of Election Timing (2/2)

	C-logit Structured Trade	
	+\- 18 months	+ \- 12 months
	(1)	(2)
Pre-Election*Treatment	0.3522***	0.3350***
	2.88	3.28
Quarter Fixed Effects	Yes	Yes
Regression Type	Panel	Panel
R2 / Pseudo R2	0.0815	0.0545
Number of Periods	12	8
Observations	2,741	2,741

Geographic Correlation



The Real Effect of Structured Loan Usage

[1] effects on electoral outcome

[2] effects on budget decisions

- Using structured loans is endogenous to variables that are likely to affect [1] and [2]
- We instrument the propensity to use structured loans with the geographic distance of the local government to the closest Dexia branch, as the crow flies

Effects on Electoral Outcome

	Structured Loan Usage		Reelection	
	First Stage		IV	
	(1)	(2)	(3)	(4)
Distance to Dexia Agency	-0.007***	-0.002**		
	-3.832	-2.175		
Use of Structured Loan Indicator			3.433**	1.634***
			2.091	2.965
Debt per Inhabitant		0.141***		-0.007
		4.226		-1.034
Dexia Branch FE	Yes	Yes	Yes	Yes
Political Party FE	-	Yes	-	Yes
Mayor Profession FE	-	Yes	-	Yes
Population Category FE	-	Yes	-	Yes
Pseudo R2	0.092	0.363	0.017	0.108
N	34,231	25,190	26,319	24,420

Effects on Budget Decisions

	Δ Local Tax per Inhabitant		Δ Investment per inhabitant	
	(1)	(2)	(3)	(4)
Structured Loan Usage (IV)	-48.221*		-148.895**	
	-1.722		-2.569	
High-Risk Str. Loan Usage (IV)		-134.222**		-300.679**
		-2.214		-2.581
Debt per Inhabitant	0.799	1.194*	-0.300	0.3737
	1.587	1.753	1.442	0.321
Dexia Branch FE	Yes	Yes	Yes	Yes
Political Party FE	Yes	Yes	Yes	Yes
Mayor Profession FE	Yes	Yes	Yes	Yes
Population Category FE	Yes	Yes	Yes	Yes
R2	0.026	0.026	0.015	0.015
N	25,725	22,790	25,309	22,823

The Financial Sophistication Hypothesis (1/3)

Did banks exploit a lack of financial sophistication from local government politicians?

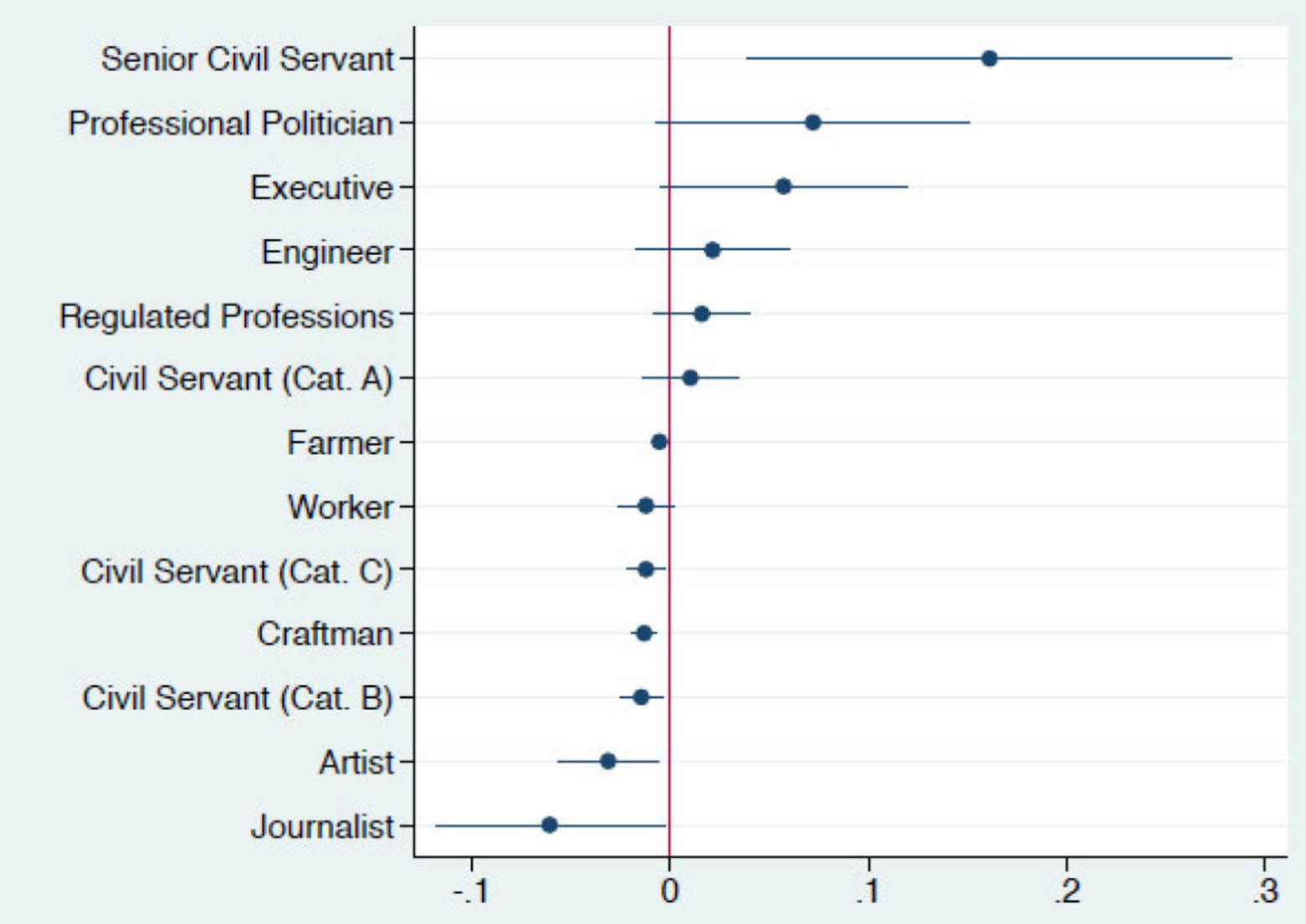
We have two stylized facts that are hard to reconcile with this view:

- politicians whose profession requires higher education are more inclined to use structured loans than politicians from less educated backgrounds, and this effect is even stronger.
- Larger cities are more likely to use both structured and toxic loans than smaller cities.

The Financial Sophistication Hypothesis (2/3)

	Probit					
	Structured (1)	High-Risk (2)	Structured (3)	High-Risk (4)	Structured (5)	High-Risk (6)
1,000 < Pop < 5,000	0.558***	0.142*				
	10.365	1.792				
5,000 < Pop < 10,000	1.721***	1.300***				
	30.216	14.575				
10,000 < Pop < 50,000	2.104***	1.774***				
	22.978	16.012				
50,000 < Pop < 100,000	2.537***	2.494***				
	10.203	10.892				
100,000 < Pop < 200,000	2.256***	2.226***				
	6.211	5.990				
200,000 < Pop	3.027***	2.880***				
	4.578	5.159				
Age at Election			-0.004*	-0.008**		
			-1.890	-2.166		
Senior Civil Servant					0.945***	4.586***
					2.577	10.024
College Degree					0.455**	4.442***
					1.973	15.690

The Financial Sophistication Hypothesis (3/3)



Conclusion

We show in this paper that financial can **amplify politician agency costs**, by allowing them to implement opaque and high risk strategies, which increases the likelihood of getting re-elected

Potential regulatory implications:

- imposing strict public disclosure requirements on transactions by local governments to increase reputation risk and facilitate monitoring by voters.
- Changing public accounting standards to account for mark-to-market losses and gains