Who Pays Attention to Government Information?

Housing and Credit Market Response to New York Fiscal Stress Monitoring System

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Motivation and Research Question

Government accountability and information transparency through fiscal monitoring:

- User: employee, supplier, higher-level government, taxpayer, creditor
- Financial transparency and financial reporting
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How do stakeholders respond to local government finance information published through state monitoring and benchmarking programs?

- Taxpayers of the local community: housing market
- Investors on local government debt: municipal bond market

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Imperfect fiscal information contributes to fisal illusion: the ability of governments to obscure the real costs of public sector activity.

- For local government, empirical question is about efficacy of capitalization (Yinger 1982).
- Future tax liability associated with insolvency will NOT be fully capitalized into lower property values. (Dollery & Worthington 1996)

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However, the market is known to be opaque and lack full disclosure.

- Local government borrowers not directly regulated.
- About 30% bonds have no financial reports filed with regulator (Cuny 2016).
- Information asymmetry especially problematic for individual investors on secondary market.

New York Fiscal Stress Monitoring System

Category	Indicator	Score
Fund Balance	Unrestricted balance to expense	25
	Total fund balance to expense	25
Operating Deficit	Number of last three years with a deficit	10
Cash Position	Cash and liquid investment to current liability	10
	Cash and liquid investment to monthly expense	10
Short-Term Debt	New issuance to revenue	5
	Number of last three years with new issuance	5
Fixed Costs	Personnel cost to revenue, average last three years	5
	Debt service cost to revenue, average last three years	5
	Total score	100

- 0-44.9: no designation.
- 45-54.9: susceptible fiscal stress.
- 55-64.9: moderate fiscal stress.
- 65-100: significant fiscal stress.

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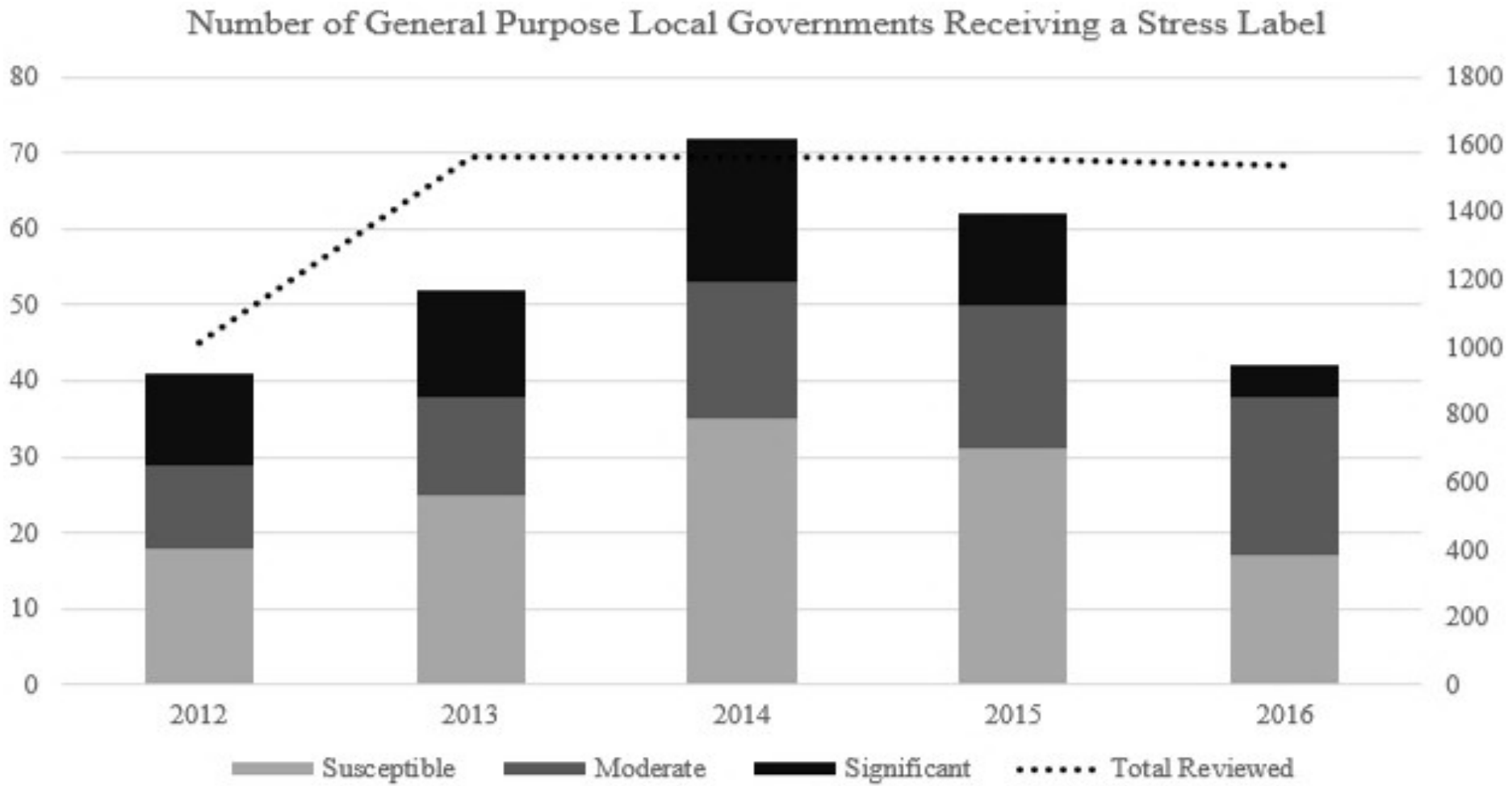
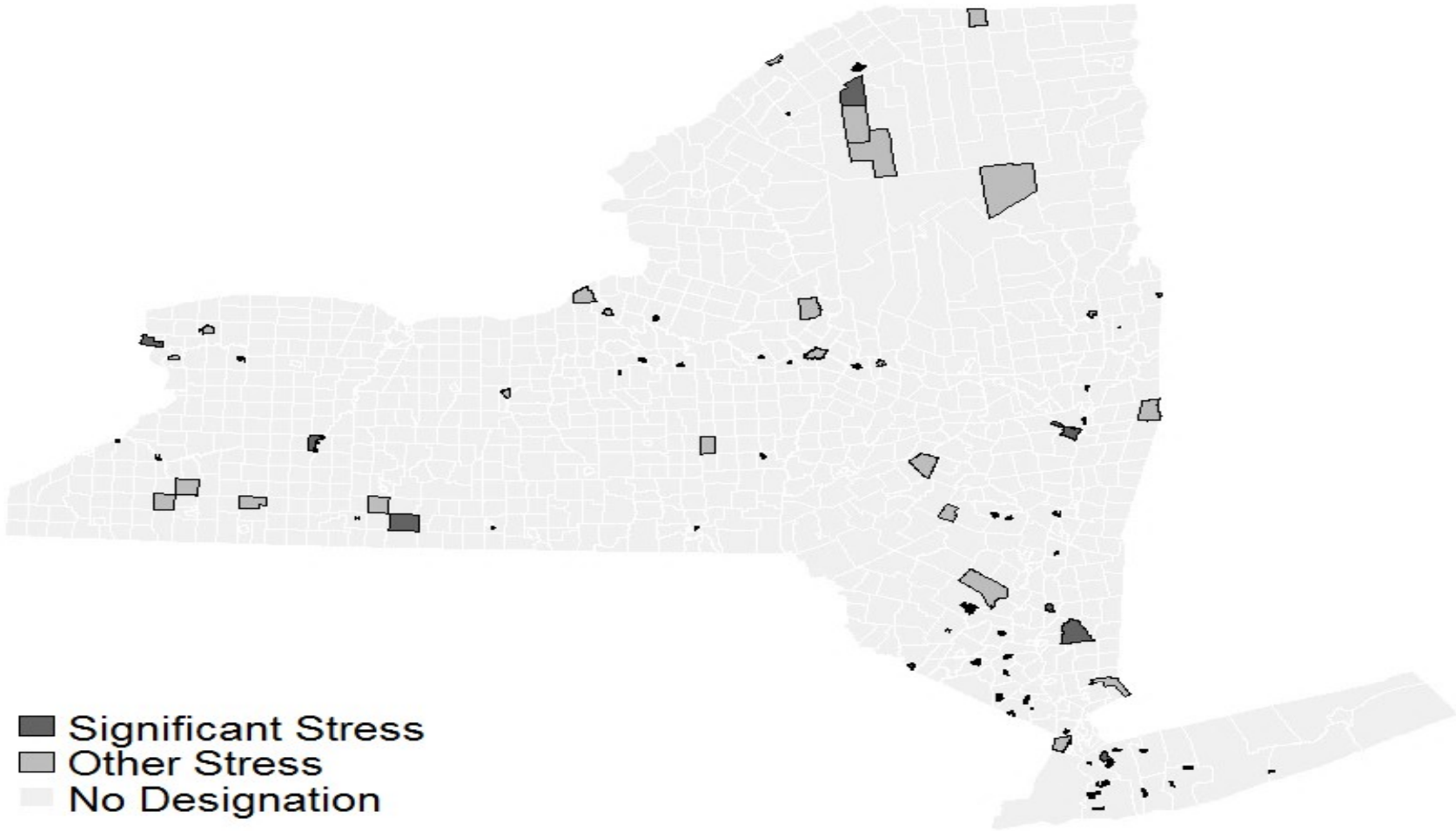
- Label for a given locality could change year to year.
- I know exactly when the scores are assigned.

Cross-Time Variation in Stress Labels

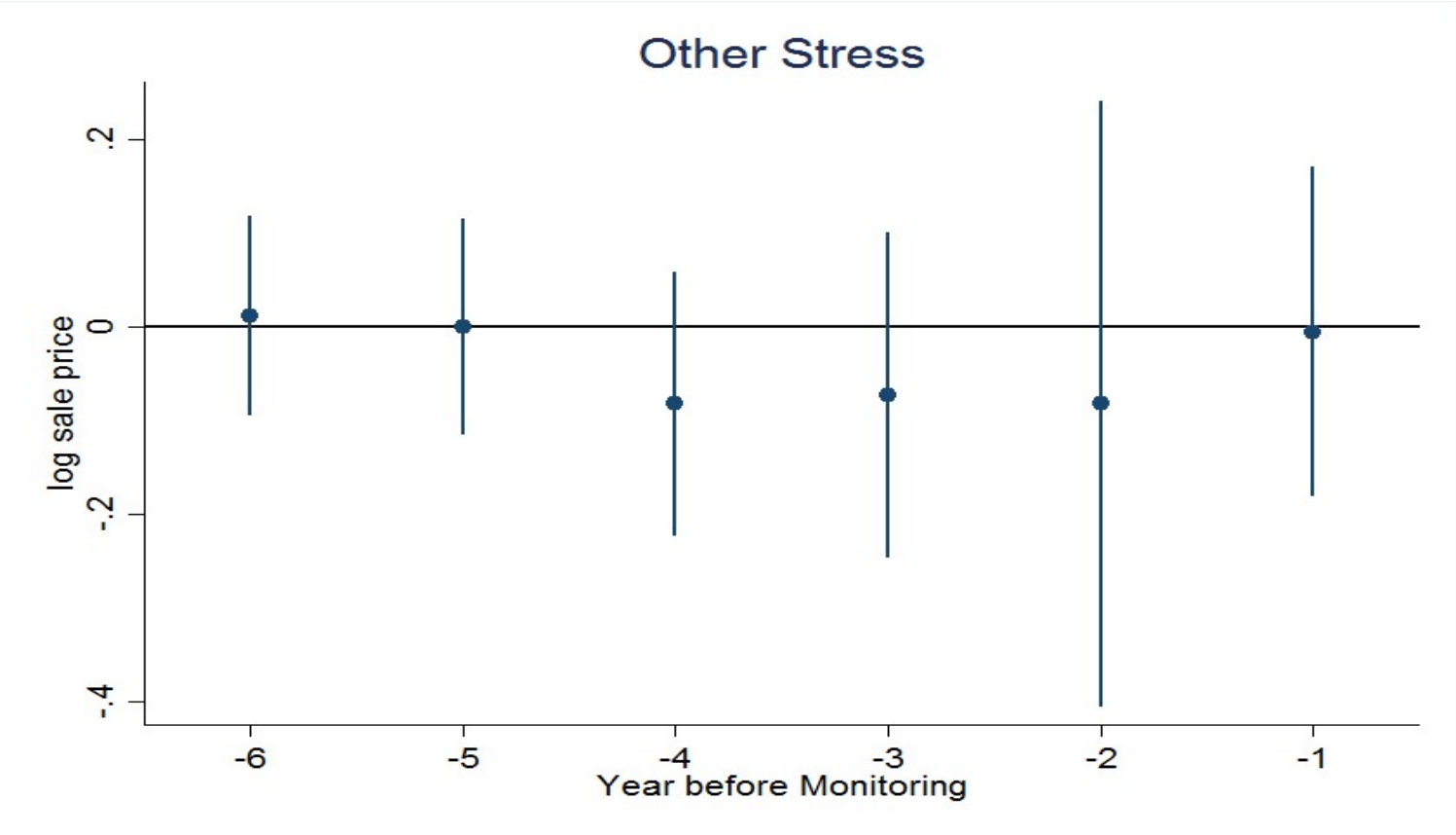


Geographic Distribution, FY16 Excluding Counties



Pre-Monitoring: Housing Market

Compare ever moderate or susceptible stress localities with never designated localities:



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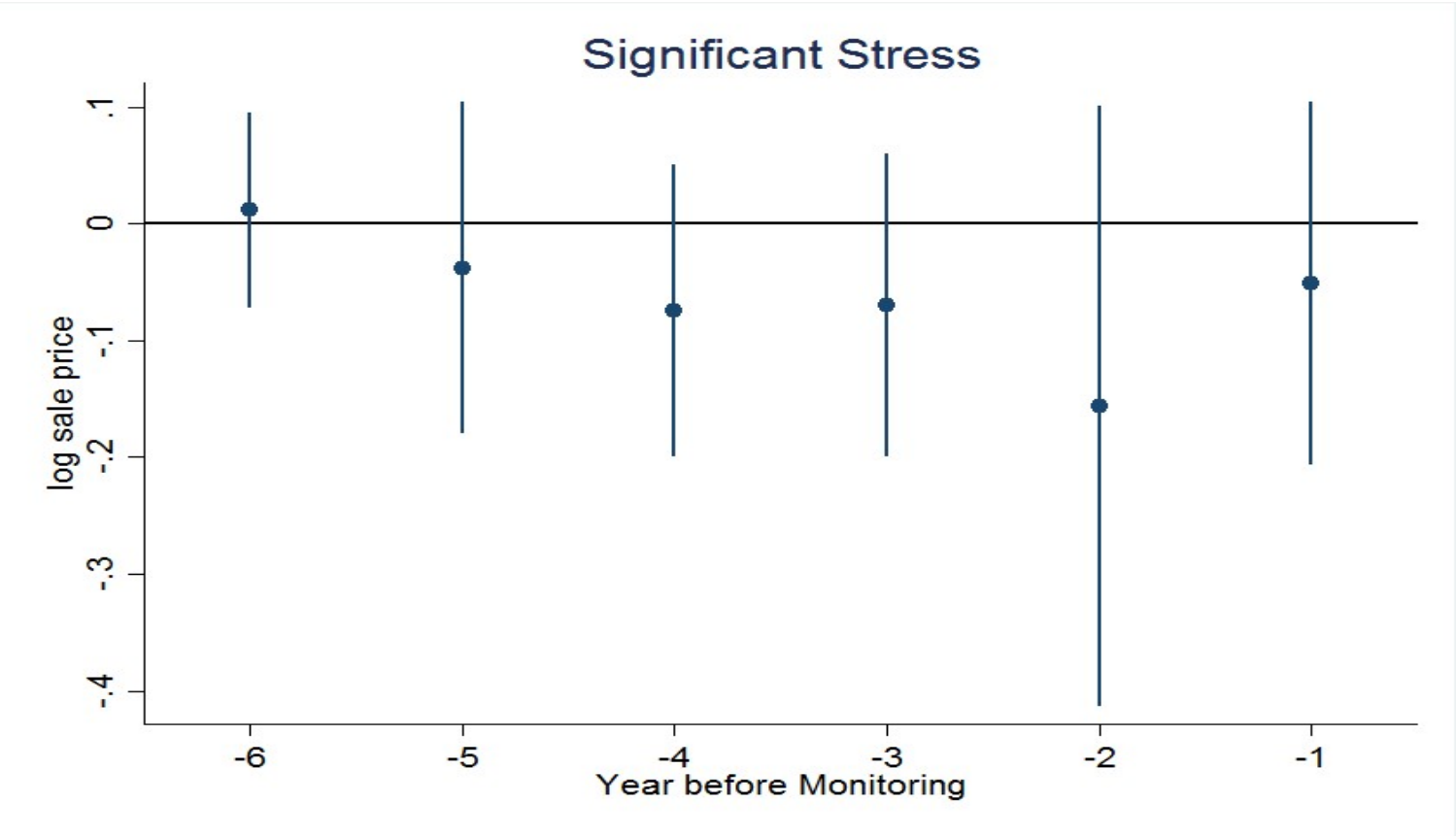

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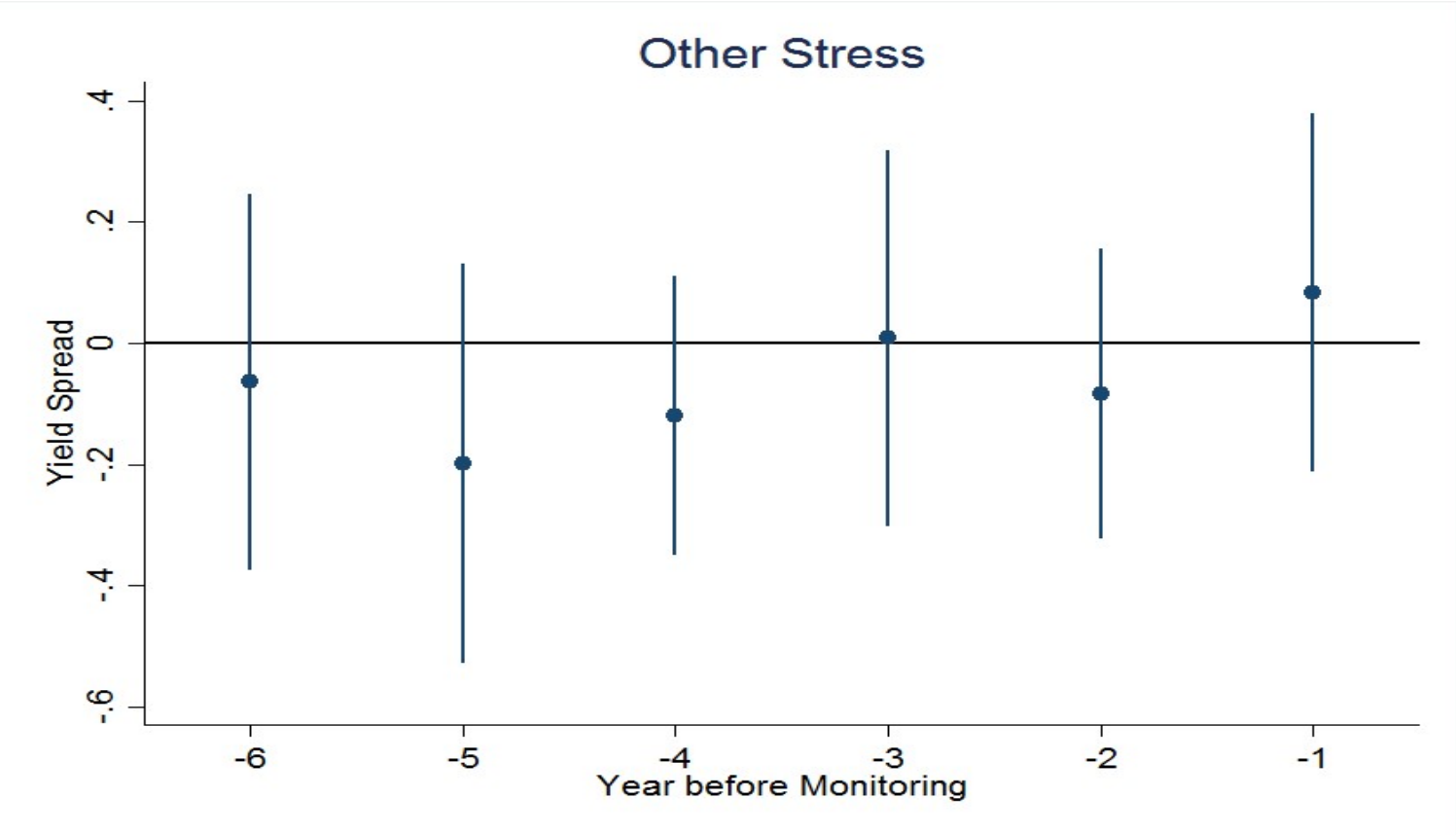

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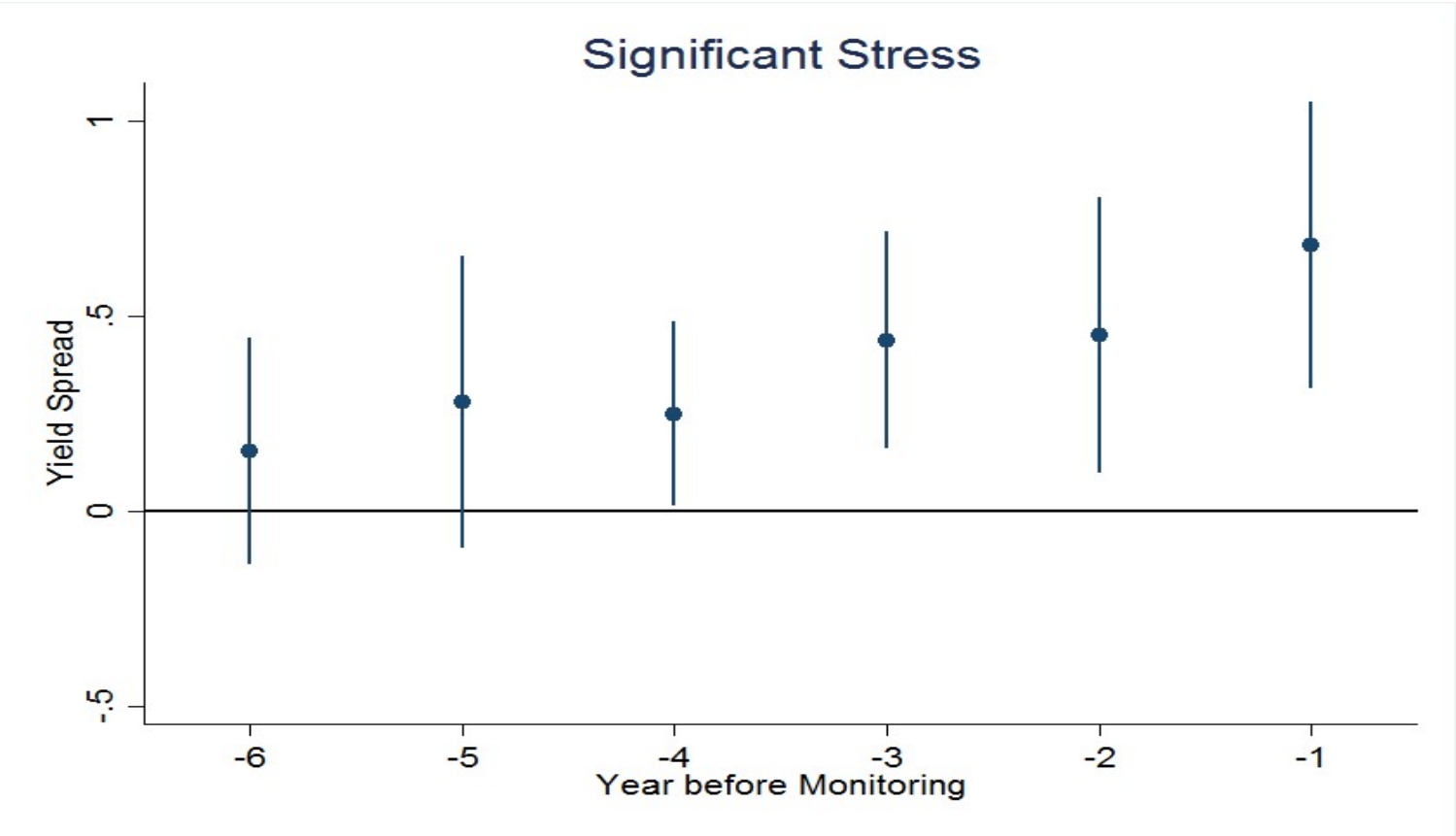

Pre-Monitoring: Synthetic Indicators

Table: Housing Market

	Ind.1	Ind.2	Ind.3	Ind.4	Ind.5
DV: Log House Price	-0.0378 (0.0413)	0.0390 (0.0358)	-0.0179 (0.0201)	0.0068 (0.0325)	-0.0015 (0.0098)
	Ind.6	Ind.7	Ind.8	Ind.9	
DV: Log House Price	-0.0354 (0.108)	-0.0088 (0.0290)	-0.0442 (0.732)	-0.183 (0.390)	

Table: Bond Market

	Ind.1	Ind.2	Ind.3	Ind.4	Ind.5
DV: Yield	0.289 (0.216)	-0.580*** (0.214)	-0.0114 (0.0207)	-0.0326 (0.0320)	0.0119 (0.0169)
	Ind.6	Ind.7	Ind.8	Ind.9	
DV: Yield	0.119 (0.368)	0.0332 (0.0379)	-0.373 (0.772)	1.735** (0.711)	

Standard errors are clustered at the locality level and reported in parentheses

***p<1%, **p<5%, *p<10%

Housing Market Analysis

Difference-in-differences regressions on repeated sales.

For single-family unit i located in city, town, or village c in year t:
$$InPrice_{ict} = \alpha_1 Susceptible_{ct} + \alpha_2 Moderate_{ct} + \alpha_3 Significant_{ct} + \mu_i + \tau_t + e_{ict}$$

- Stress label as known at the time of sales.
- Property fixed effects control for housing characteristics common in hedonic model.

Bond Market Analysis

Difference-in-differences regressions on yield spread.

For bond series b issued by local government c in month t:

$$Yield_{bct} = \beta_1 Susceptible_{ct} + \beta_2 Moderate_{ct} + \beta_3 Significant_{ct} + \theta Ind2,9_{ct} + \gamma X_{bct} + \rho_c + \lambda_t + \epsilon_{bct}$$

- Stress label as known at the time of issuance.
- Vector X represent bond characteristics (maturity, call feature, tax status, etc.)
- Vector *Ind2,9* represent synthetic or actual value of indicators 2 and 9

DID Results: Housing Market

	Baseline	Only Labeled	First Label	Unemloyment Control	Overlapping Govnt Label Control	Fin. Var Control
Susceptible	0.0401	0.0585	-0.0305	0.0367	0.0438	0.0399
	(0.0470)	(0.0497)	(0.0507)	(0.0447)	(0.0494)	(0.0489)
Moderate	0.0229	0.0405	0.0681	0.0168	0.0210	0.0250
	(0.0324)	(0.0314)	(0.0548)	(0.0317)	(0.0363)	(0.0322)
Significant	-0.086***	-0.0633*	-0.0691*	-0.091***	-0.088***	-0.084***
	(0.0295)	(0.0345)	(0.0395)	(0.0330)	(0.0231)	(0.0314)
House FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
N	252,094	35,230	170,996	252,094	251,956	249,677

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Housing Market: Label Receipt vs. Removal

	First Difference Regression
Sig. Receipt	-0.0807***
	(0.0130)
Sig. Removal	-0.0267
	(0.0479)
Property FE	Yes
Year FE	Yes
N	136,990

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Housing Market: Response to Info beyond Label

Table: Split Significant Stress

	Susceptible	Moderate	Significant: High Score	Significant: Low Score
DV: Log House Price	0.0387	0.0250	-0.0684**	-0.104*
	(0.0489)	(0.0315)	(0.0302)	(0.0569)

Standard errors are clustered at the locality level and reported in parentheses
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DID Results: Bond Market

	Baseline	Baseline: Indicators 2 & 9 Control	Only Labeled	First Label	Unemloyment Control	Fin. Var. Control
Susceptible	0.0441	0.0006	0.0089	-0.162	0.0014	0.0023
	(0.0535)	(0.0567)	(0.0595)	(0.103)	(0.0575)	(0.0574)
Moderate	0.0515	0.0404	0.131	0.348	0.0365	0.0430
	(0.0892)	(0.0868)	(0.0893)	(0.220)	(0.0874)	(0.0872)
Significant	0.178	0.0804	0.134	0.104	0.0736	0.0802
	(0.117)	(0.0938)	(0.128)	(0.129)	(0.0936)	(0.0937)
Locality FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
N	29,894	29,261	6,988	19,727	29,261	29,261

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- Municipal bond market largely does not exhibit statistically significant change before and after the monitoring system.
- Possibly because that the municipal market already priced in financial information prior to state monitoring.
- Provide empirical evidence of taxpayer fiscal information asymmetry, relative to bond investors.
- Show value of state monitoring in terms of transparency. However, recovery becomes harder due to shrinking property tax base?

Comments and suggestions appreciated.

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