Institutions, Volatility and Investment

Conference on Elections, Policymaking, and Uncertainty

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Introduction

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- Theory: constraints prevent policy activism.
- Can be good or bad for growth but it certainly reduces political risk.
- If investors dislike political risk then executive constraints make countries more attractive for investors.

This Talk

- Related Literature
- Executive Constraints
- Investment flows and Executive Constraints
- A Learning Model of Political Risk

Related Literature

- Estimation: Wooldridge (1999), Silva and Tenreyro (2006)
- Sudden collapse: Rodrik (1999), Aguiar and Gopinath (2007)
- Democracy and volatility: Acemoglu et al (2003), Moborak (2005)
- Political risk and investment: Jensen (2008)
- Same size does not fit all: Persson and Tabellini (2008)

Executive Constraints - Discussion

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- Mill (1859) describes a limit to the power of a ruler that can be achieved through *"[...] establishment of constitutional checks, by which the consent of the community, or of a body of some sort, supposed to represent its interests, was made a necessary condition to some of the more important acts of the governing power"*

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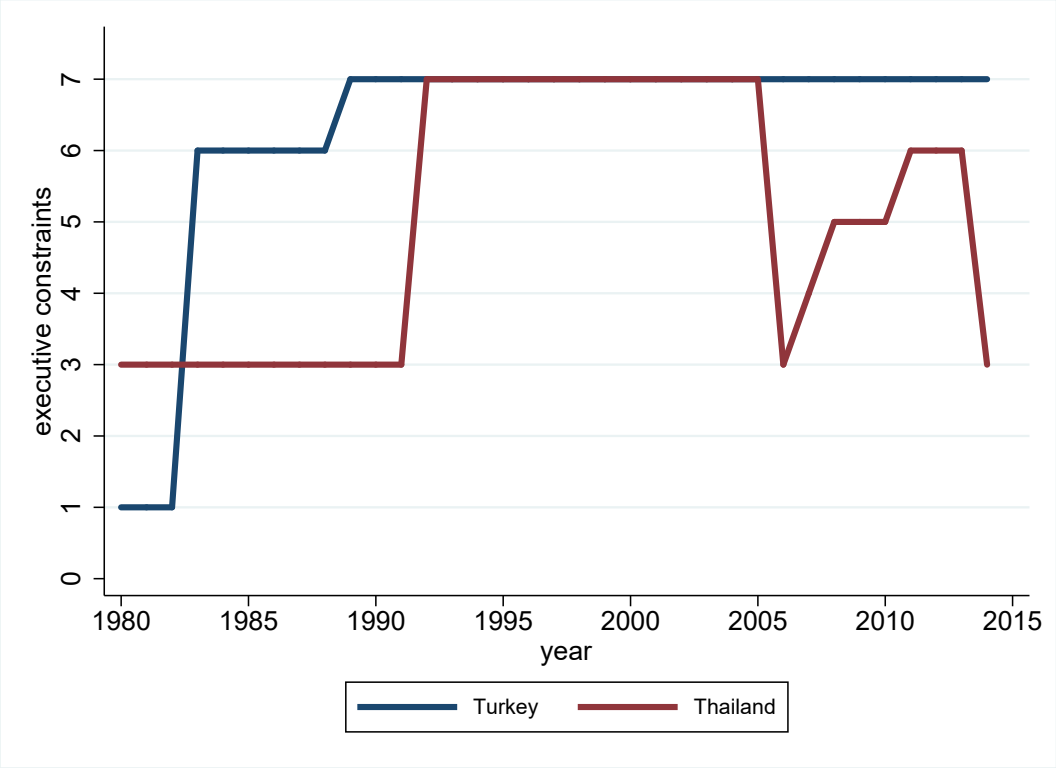
- Western democracies: legislatures or an independent judiciary.
- Other options: ruling party in a one-party state, councils of nobles or the military in coup-prone polities.
- Strong executive constraints ($xconst = 7$): *"Accountability groups have effective authority equal to or greater than the executive in most areas of activity."*


executive constraints
0
1
2
3
4
5
6
7
1980
1985
1990
1995
2000
2005
2010
2015
year
Turkey
Thailand

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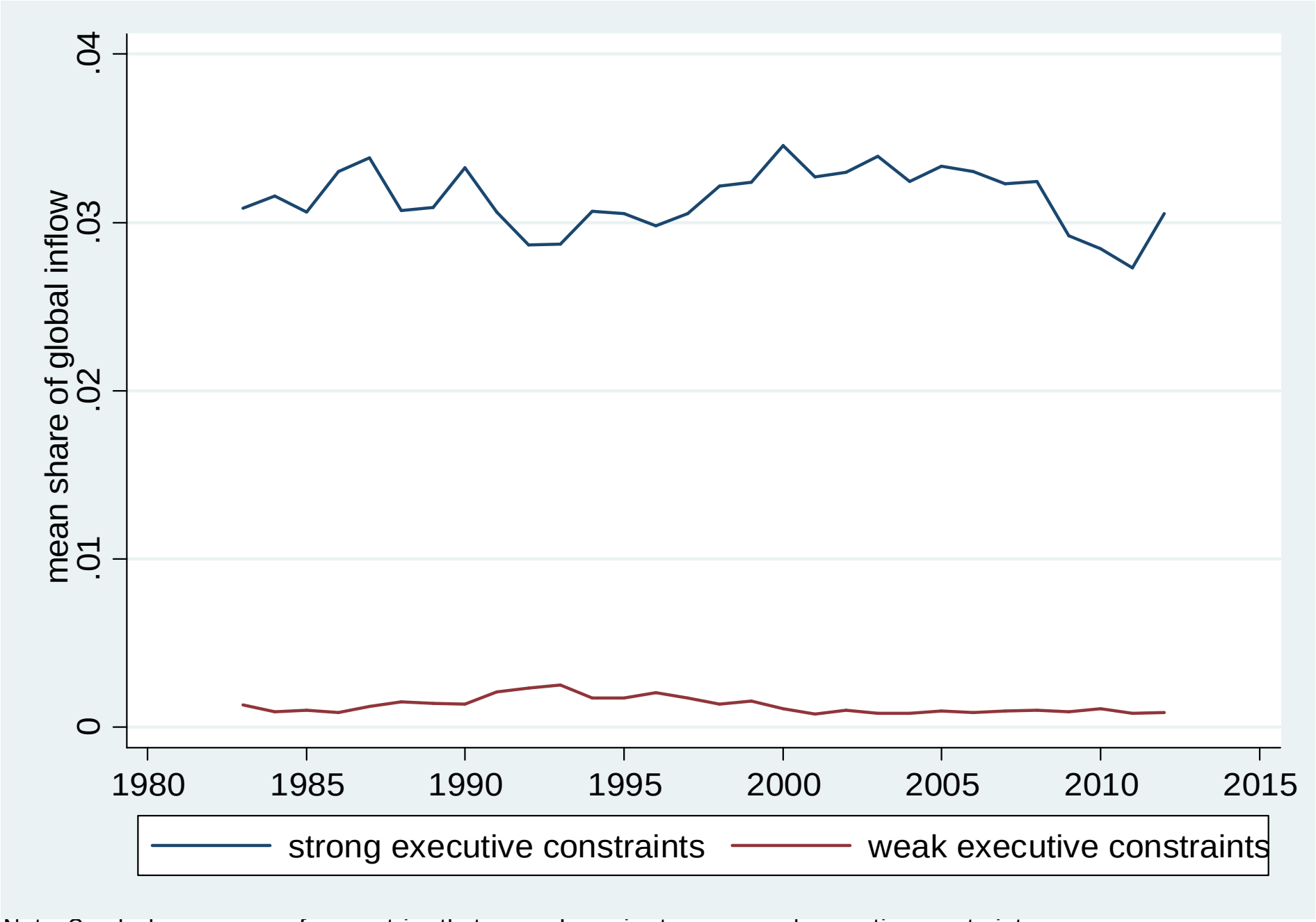
- Robustness: OECD and UNCTAD data

Figure 2: Investment Inflows over Time (Mean Share)



Note: Graph shows average for countries that were always in strong or weak executive constraints.

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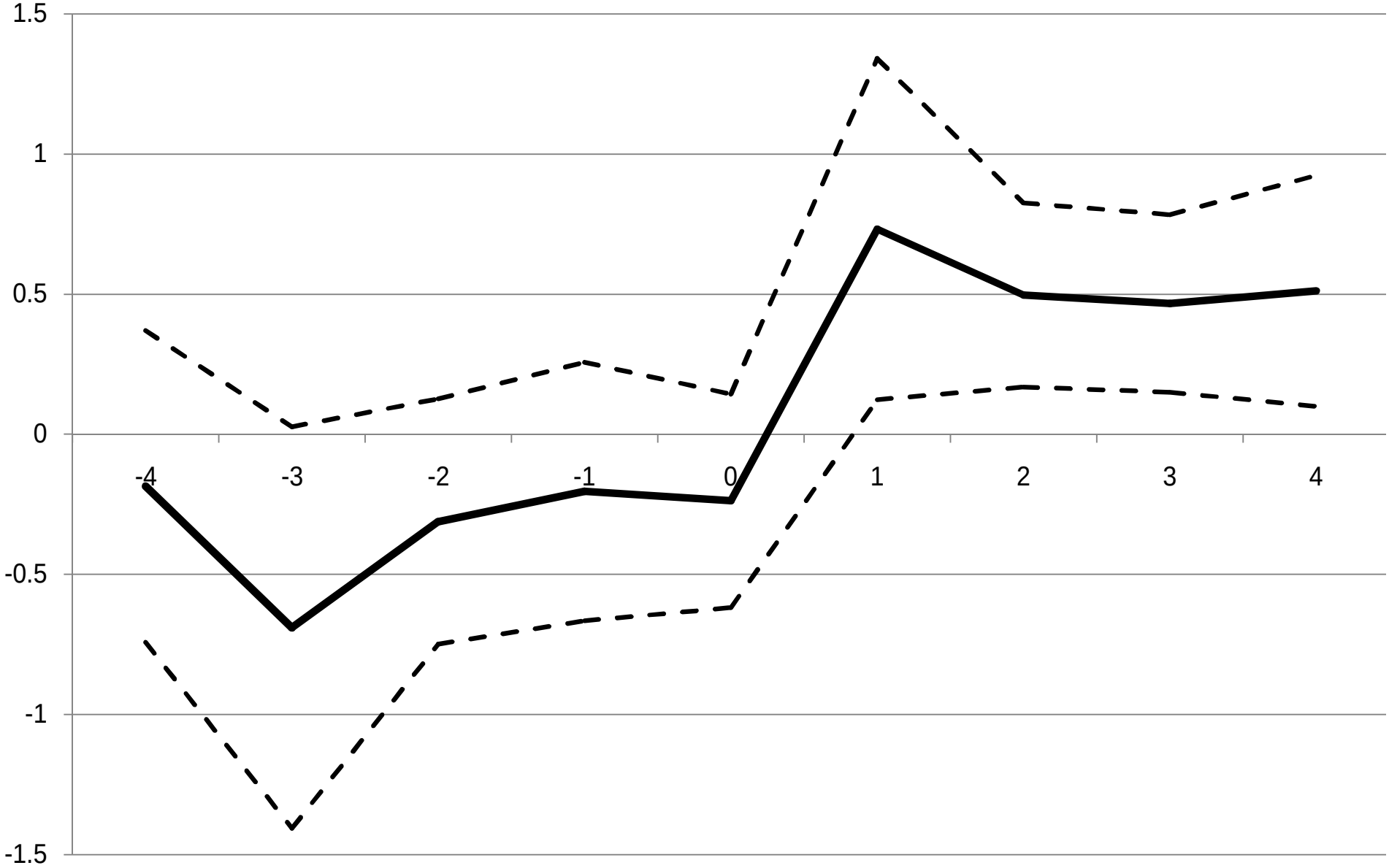
- Idea: did adopters "join the club"?

Table 1: Executive Constraints and Foreign Investment

Panel A: Sector Level

VARIABLES	(1) Investment Inflow	(2) Investment Inflow	(3) Investment Inflow	(4) Investment Inflow	(5) Investment Inflow	(6) Number of Industries with Inflows
strong executive constraints	0.881***	0.906***	0.825***	0.681***	1.064***	0.296***
	(0.201)	(0.219)	(0.215)	(0.216)	(0.251)	(0.0472)
high openness		-0.0854				
		(0.219)				
high competitiveness		0.206				
		(0.219)				
years of schooling					0.0186	
					(0.0665)	
country/sector fixed effects	yes	yes	yes	yes	yes	yes
exposure: total FDI flow	yes	yes	yes	yes	yes	no
economic controls	no	no	yes	yes	no	no
additional controls	no	no	no	yes	no	no
Observations	46,561	46,561	41,746	41,746	8,367	46,561
Number of country/sectors	1,778	1,778	1,742	1,742	1,457	1,778

Figure 3: Adoption of Strong Executive Constraints



Solid line shows coefficients on leads and lags around the adoption date (at 0) of strong executive constraints plus the coefficient on the "strong executive constraints" dummy. Dashed lines show 95% confidence intervals using the standard deviation of the lead and lag coefficients.

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- Sector analysis: politically connected sectors Faccio (2006)
- But can we link this to political volatility?

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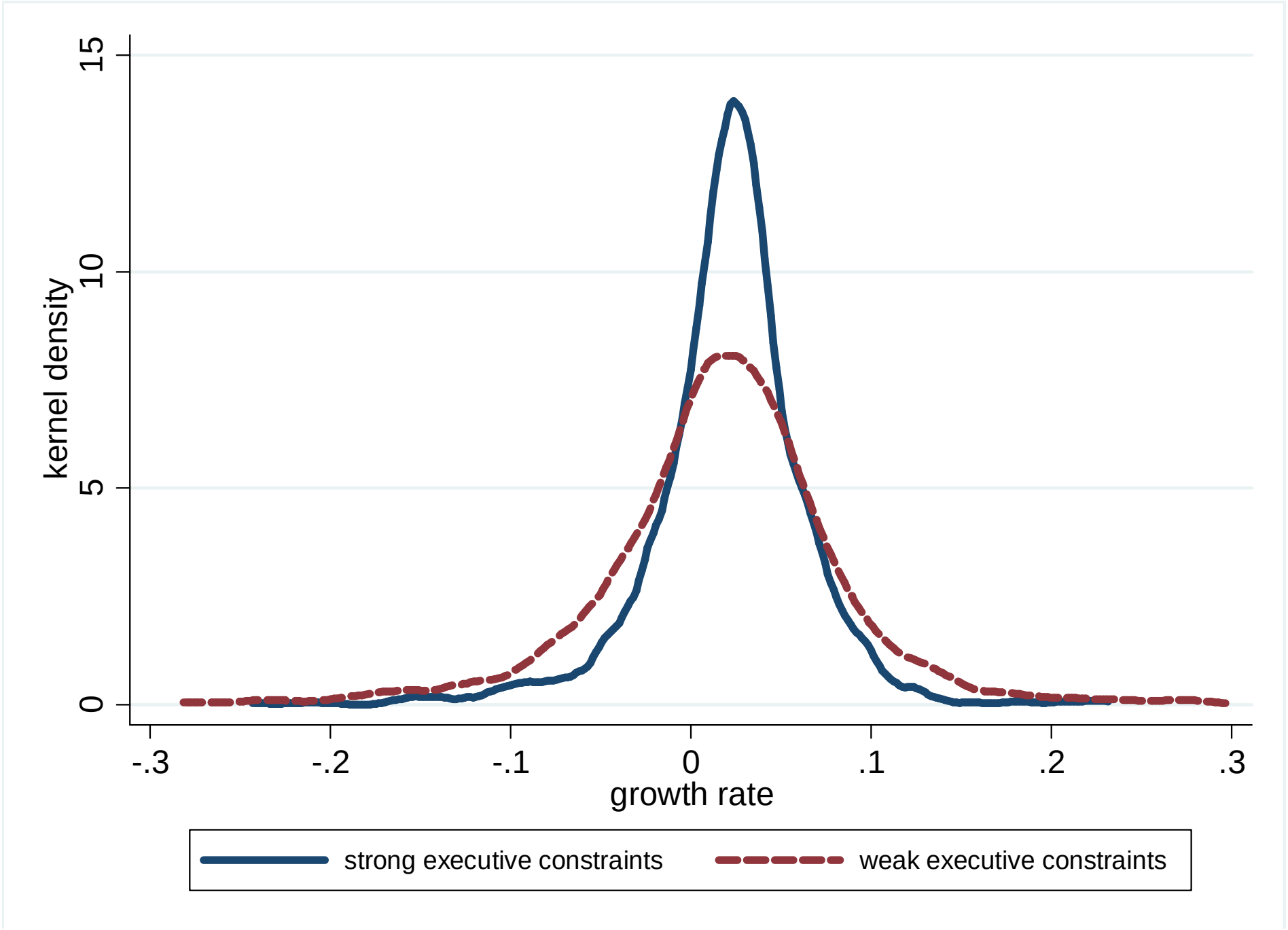
- Following graph plots distribution of growth in countries with strong and weak constraints.

Figure 5: Executive Constraints and GDPpc Growth



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- Firm profits depend on aggregate productivity growth.
- Irreversible investments: investors care about expected productivity growth and volatility.

Core of the Model: Updating I

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- Assumption: investors use history of other countries as prior.

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- Updating depends on the strength of the prior D.
- Very high D: country growth path plays no role.

Updating formula

- Define the data moments

$$G^1(\delta, t) = \hat{\mu}_g(\delta, t) \text{ and } G^2(\delta, t) = \hat{\sigma}_g^2(\delta, t) + \hat{\mu}_g^2(\delta, t),$$

  i.e. this are the moments in all countries with institutions δ in year t.
- Update country-specific mean of growth as

$$\hat{\mu}_{gct}(\delta, \tau(c), D) = \frac{D \times G^1(\delta, \tau(c)) + \sum_{s=\tau(c)}^{t} g_{cs}(\delta)}{D + t - \tau(c)}$$

  where $\tau(c)$ is the year in which the country transitioned to $\delta \in [S, W]$.
- Note how small D gives more weight to the country experience.
- Volatility is updated in a similar way.

$$\hat{\sigma}_{gct}^2(\delta, \tau(c), D) = ...$$

Panel B: Country Level

	(1)	(2)	(3)	(4)
	Updating on World Data Alone	Updating on Country Data (D = 100)	Updating on Country Data (D = 10)	Updating on Country Data (D = 6)
VARIABLES	Investment Inflow	Investment Inflow	Investment Inflow	Investment Inflow
variance of productivity growth (estimated on world level)	-0.259			
	(0.179)			
mean productivity growth (estimated on world level)	0.0722			
	(0.116)			
variance of productivity growth (estimated on country level)		-0.604***	-0.627***	-0.601**
		(0.159)	(0.227)	(0.255)
mean productivity growth (estimated on country level)		0.386***	0.286***	0.321***
		(0.135)	(0.107)	(0.118)
country fixed effects	yes	yes	yes	yes
control of total FDI flow	yes	yes	yes	yes
Observations	903	901	901	901
Number of countries	33	33	33	33

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. All columns report results from a fixed effects poisson regression. Dependant variable is the total investment flows that year (in that sector) that goes into country. All explanatory variables are lagged by one year and weighted by their standard deviations. The sample is restricted to countries that changed level of executive constraints between high and low executive constraints once and excludes the Lebanon. "D=100" means that the prior is given a weight equivalent to 100 country/year observations. This implies that the growth history of the country receives very little weight. "D=6" means that the prior is given a weight equivalent to 6 country/year observation. This gives most weight to the country-specific history. We set beta=0.66 and eta=0.75.

Using the Model

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- Simulate foreign investment flows with the counter-factual.
- Key point: model helps to understand country heterogeneity.

Table 7: Counterfactual FDI Flows

	(1)	(2)	(3)	(4)	(5)	(6)
			adoption of strong constraints without change in mean productivity growth		adoption of strong constraints without change in variance of productivity growth	
		(I)	(II)	ln(II)-ln(I)	(III)	ln(III)-ln(I)
country	mean yearly investment inflows	fitted value of investment inflows	simulated fitted value of investment inflows	effect of change in mean on inflow	simulated fitted value of investment inflows	effect of change in variance on inflow
Albania	82980	70194	22326	**115%**	40398	**55%**
Argentina	278610	219075	183519	**18%**	201927	**8%**
Bolivia	90527	68162	103717	**-42%**	50993	**29%**
Botswana	11054	11792	24258	**-72%**	4468	**97%**
Bulgaria	331913	309047	695098	**-81%**	402013	**-26%**
Chile	595607	590753	264022	**81%**	175873	**121%**
Colombia	240063	110872	90783	**20%**	111224	**0%**
Croatia	586638	794048	295659	**99%**	99709	**207%**
Ecuador	70398	64752	144718	**-80%**	47661	**31%**
Greece	1028152	971909	1171262	**-19%**	551579	**57%**
Haiti	2494	2376	2289	**4%**	2008	**17%**
Hungary	2286080	2300512	3402512	**-39%**	2114636	**8%**
Kenya	129095	121624	100259	**19%**	116183	**5%**
Lesotho	1432	1416	1214	**15%**	254	**172%**
Madagascar	13450	2939	2549	**14%**	2534	**15%**
Mongolia	461	33159	50152	**-41%**	34067	**-3%**
Nicaragua	11384	12178	10521	**15%**	855	**266%**
Niger	47	17590	15243	**14%**	8874	**68%**

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Pakistan	24821	24221	23220	**4%**	19235	**23%**
Paraguay	25073	24501	51263	**-74%**	17280	**35%**
Peru	147877	245512	165428	**39%**	142501	**54%**
Philippines	15319	166603	124728	**29%**	134960	**21%**
Poland	3718198	3580309	2181726	**50%**	1918672	**62%**
Romania	3310134	3359373	2153250	**44%**	1851184	**60%**
Serbia and Montenegro	40006	73057	21810	**121%**	5430	**260%**
Slovakia	1189883	1199907	1451524	**-19%**	511662	**85%**
South Africa	1263382	1260362	1638702	**-26%**	418897	**110%**
Sudan	77	11276	6406	**57%**	6450	**56%**
Taiwan	1503860	1642251	1802947	**-9%**	1456543	**12%**
Thailand	607636	457597	558816	**-20%**	448550	**2%**
Turkey	1411081	1381493	1561382	**-12%**	1087599	**24%**
Uruguay	195777	195401	134207	**38%**	110281	**57%**
			AVERAGE:	**8%**	AVERAGE:	**62%**

Notes: All inflows are average yearly inflows during strong executive constraints (in 1000 EUR). "mean yearly inflows" is the actualy average yearly inflow of investment into the country. "fitted value of investment inflows" is the fitted value from Table 5, Column (4), Panel B. "simulated fitted value of investment inflows" replaces the mean (in (II)) and the variance (in (III)) in the episode with strong executive constraints with the average mean and variance in the episode with weak executive constraints. The difference between (I) and (II) ((III) respecitvely) captures the effect of changes in the expected mean (variance) on investment inflows in the model. Values are not calculated for Nigeria as the country only has one year under strong executive constraints.

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- We build a learning model that allows us to explain the reduced form flows better.
- Our model allows us to understand country heterogeneity.