

Control Motivations and Firm Growth

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- Firms begin small and, conditional on surviving, experience growth
 - ▷ Davis et al. 1998; Maksimovic et al. 2019; Hsieh and Klenow QJE 2014
 - ▷ Large & unexplained cross-sectional heterogeneity

Do control motivations influence firm growth?

Control premia around the world (Dyck & Zingales 2004)

Country	Mean	Median	Standard Deviation
Italy	0.37	0.16	0.57
Germany	0.10	0.11	0.14
Spain	0.04	0.02	0.11
France	0.02	0.01	0.06
Brazil	0.65	0.49	0.83
Austria	0.38	0.38	0.19
Israel	0.27	0.21	0.32
Portugal	0.20	0.20	0.14
Denmark	0.08	0.04	0.11
Canada	0.01	0.01	0.04
United Kingdom	0.01	0.00	0.04
United States	0.01	0.02	0.09

Family firms as our laboratory

- Family blockholders have strong control motivations
 - ▷ Long-term, sometimes multi-generational, large shareholding
 - ▷ Succession & socioemotional wealth
[Bennedsen et al. QJE 2007; Ellul et al. AER 2010; Belenzon et al. AER 2017]
- Most common model of economic organization around the world
 - ▷ 1/3 of publicly traded firms across the world controlled by founding family
[La Porta et al. JF 1999; Anderson & Reeb JF 2003; Aminadav & Papaioannou JF 2020]
 - ▷ 4/5 of unlisted firms in continental EU are family firms (our sample)

What do we do?

- **Reduced-form:** family firms are less likely to experience control changes over time
 - They grow less
 - Their growth is less sensitive to fundamentals
- **Structural model:** *Why?* Decompose different frictions
 - ▷ Technology (*capital productivity*)
 - ▷ Limited access to capital markets (*info asymmetry*)
 - ▷ **Control motivations**
 - Private benefits of control (*private value*)
 - Founder's control improves performance (*social value*)

Main findings

Structural estimates suggest that private value of control explains 2/3 of growth differential family vs. non-family firms

Control motivations. . .

- ▷ limit ability to raise capital & grow
 - Founder is reluctant to dilute control
 - Asks for premium to issue equity
- ▷ have little social value (direct effect on performance)
- ▷ induce riskier (more levered) capital structures

Reduced-form evidence

Panel of European **private** firms (France, Germany, Italy, Spain, UK)

- 2 Orbis datasets:
 - [1.] **Company** data: sector, year, country, capital structure, production, profitability
 - [2.] **Ownership** data: shareholders identity & type, block size, control history
 - ▷ Use to separate **family vs non-family**
- Sample Selection
 - Born after 2003; At least 6yrs; Assets > 0
 - 1,131,717 firm-year obs; 139,584 unique firms
- Balanced Sample
 - Match family & non-family firms
 - 178,083 firm-year obs; 21,434 unique firms

Family Ownership (%)

Type	Total	France	Germany	Italy	Spain	UK	Top	Bottom	Large
Family	87.35	75.05	75.50	83.72	87.82	94.66	13.50	92.50	59.00
Non-Family	12.65	24.95	24.50	16.28	12.18	5.34	86.50	7.50	41.00
– Corporate	8.53	18.75	18.46	8.65	10.57	3.75	71.20	6.00	32.31
– Funds	0.98	2.31	1.21	1.28	0.84	0.65	8.00	1.00	3.19
– Widely-Held	2.80	2.96	3.76	6.16	0.35	0.80	1.50	0.10	3.93
Num of firms	139,584	3,339	21,435	40,117	15,324	59,369	1,000	1,000	31,656

- Family ownership is **predominant** (even in **large firms**)

Ownership Persistence

Type	Stake 0 (%)	Stake T (%)	Control Change (%)	HH_0	HH_T
All firms	89.28	67.75	22.32	0.91	0.63
Family	95.61	77.87	15.50	0.93	0.66
Non-Family	82.03	52.25	38.68	0.74	0.44
– Corporate	92.90	57.40	37.52	0.89	0.53
– Funds	93.14	42.83	52.85	0.90	0.40
– Widely-Held	44.60	34.62	37.81	0.21	0.17
Large	92.57	69.02	29.95	0.88	0.61
Large Family	94.92	75.34	19.26	0.91	0.68

- Family ownership is **very concentrated** AND **highly persistent**
 - Also in **large firms**

Balanced Sample: Family Ownership & Control Change

	Control Change						
	(1)	(2)	All Firms		(5)	Large Firms	Top 1,000
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Family	-0.502***	-0.501***	-0.464***	-0.465***	-0.465***	-0.447***	-0.448***
	(0.019)	(0.019)	(0.022)	(0.022)	(0.022)	(0.057)	(0.072)
Age		0.022**	0.019*	0.025**	0.024**	0.031	0.013
		(0.007)	(0.008)	(0.008)	(0.008)	(0.021)	(0.026)
Initial Size			0.032***	0.029***	0.031***	0.030	0.012
			(0.005)	(0.005)	(0.005)	(0.034)	(0.048)
UK				0.329***	0.339***	0.524***	0.483***
				(0.043)	(0.060)	(0.117)	(0.142)
Industry					Y	Y	Y
R2	0.029	0.029	0.028	0.031	0.035	0.067	0.080
N	19,686	19,686	15,858	15,858	15,858	2,420	1,590

- Family firms are less likely to change control
 - Also **when conditioning** on...
 - Also in **large** and **very large** firms

Ownership & Control Change: BVD Sectors & Large Firms

Type	Agric	Constr	Bus Svs	Trade	Leisure	Prop Svs	Health	High-Tech
Family Firm	57.40	52.88	48.48	55.26	52.53	53.04	29.67	39.25
No Change	73.64	66.58	67.20	64.05	69.20	72.49	57.97	52.54
Within Family	6.76	8.83	10.30	8.47	7.59	11.32	6.52	6.21
Other Family	10.92	8.27	6.90	9.50	7.36	4.87	10.87	10.73
Multi-Family	0.48	3.01	2.17	1.76	0.69	1.19	2.17	1.13
Corporate	8.08	9.96	11.91	15.08	14.48	8.94	21.74	27.12
Funds	0.60	3.38	1.51	1.14	0.69	1.19	0.72	2.26
(Mean) Growth	1.44	1.42	1.57	1.61	1.40	1.22	1.54	1.75
Num of Firms	187	532	1,058	968	435	1,007	138	177

- **Family HT firms** are more likely to change control...
 - in particular towards other **corporations**
 - and **grow more!**

Firm Growth and Family Ownership

	Growth Rate								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Family	-0.044*** (0.003)	-0.042*** (0.003)	-0.083*** (0.003)	-0.044*** (0.003)	-0.041*** (0.003)	-0.082*** (0.003)	-0.026*** (0.004)	-0.023*** (0.004)	-0.064*** (0.004)
Sector Sales Growth (SSG)				0.194*** (0.005)	0.042** (0.018)	0.036** (0.018)	0.264*** (0.014)	0.113*** (0.021)	0.104*** (0.021)
Family*SSG							-0.140*** (0.020)	-0.142*** (0.020)	-0.134*** (0.020)
Initial Size			-0.053*** (0.001)			-0.053*** (0.001)			-0.053*** (0.001)
Country		Y	Y		Y	Y		Y	Y
Industry		Y	Y		Y	Y		Y	Y
Year		Y	Y		Y	Y		Y	Y
Cohort			Y			Y			Y
R-squared	0.001	0.015	0.049	0.002	0.016	0.049	0.002	0.016	0.049

- Family firms **grow less**
- Family firms **respond slowly** to industry growth

Performance & Risk

	ROA (OLS)				Loss (Probit)			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Family	0.024*** (0.001)	0.024*** (0.001)	0.020*** (0.001)	0.024*** (0.001)	-0.253*** (0.008)	-0.271*** (0.008)	-0.272*** (0.009)	-0.353*** (0.009)
Sales Growth				Y				Y
Log-Assets				Y				Y
Tangibility				Y				Y
Initial Size			Y	Y			Y	Y
Country		Y	Y	Y		Y	Y	Y
Industry		Y	Y	Y		Y	Y	Y
Year		Y	Y	Y		Y	Y	Y
Cohort			Y	Y			Y	Y
R-squared	0.006	0.029	0.029	0.033	0.013	0.043	0.047	0.043

- Family firms display better performance
- Family firms are less risky

Main differences family vs. non-family

Family firms **grow less**, AND/BUT have. . .

- higher measures of performance (both ROA & ROE)
- lower frequency of negative income
- more LT leverage [▶ Table](#)
- and respond to sector-level growth by increasing leverage (*non-family reduce leverage*)

Ideal Experiment

Q: Do (and to what extent) control motivations affect firm growth?

Main Idea: Control-motivated blockholders are reluctant to dilute control thus limiting firm growth

→ **Ideal Experiment:**

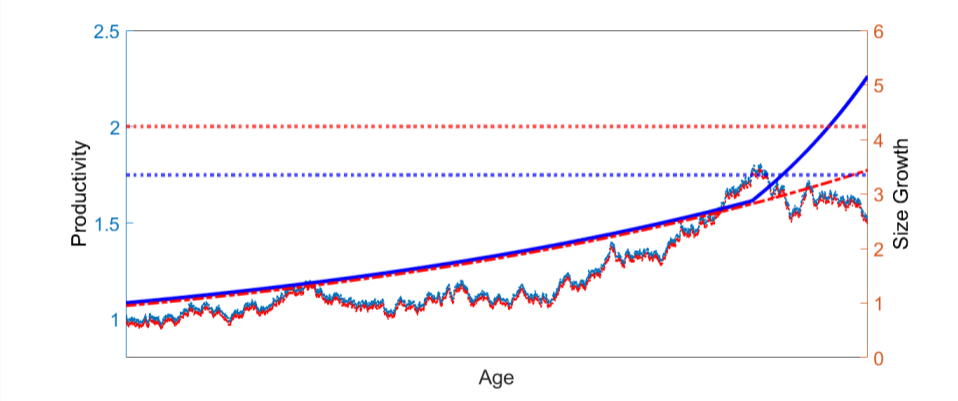
Two twin firms (in frictionless market)

- One **Control-Motivated (CM)**
- One **NON-Control-Motivated**

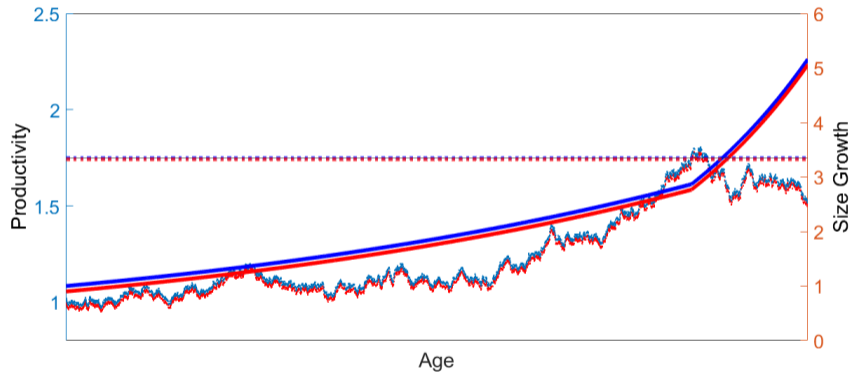
→ Observe a control dilution/change (CC) in Non-CM

→ Measure the size growth (growth rate) after CC

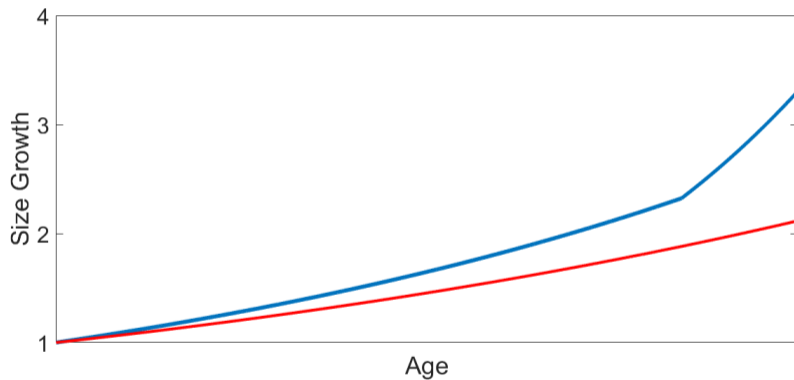
Ideal Experiment



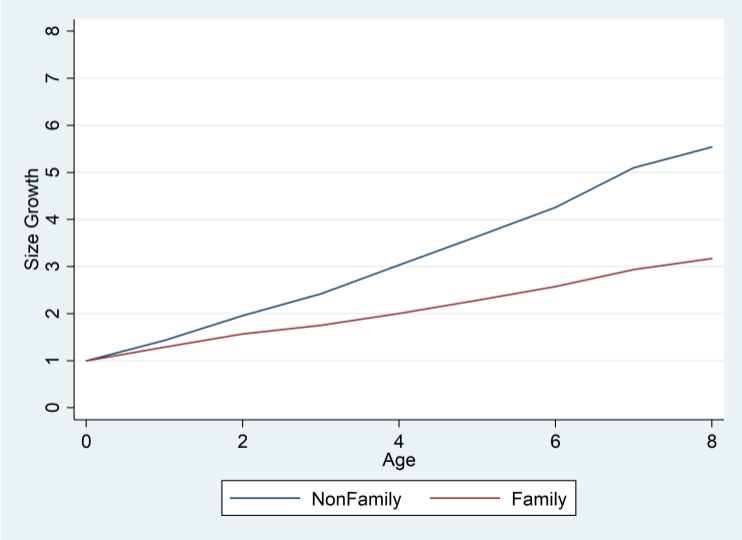
Counterfactual



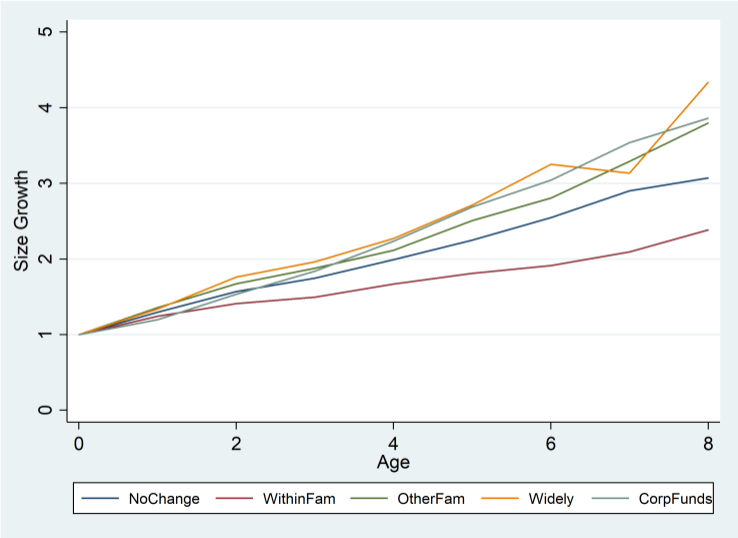
What we see



Firm Growth: Family vs Non-Family



Family Firms: Control Change & Firm Growth



The Model

Model framework I

Decisions ($t = 1$)

- Entrepreneur (\mathcal{F}) has scalable investment & initial capital $E_{\mathcal{F}}$
 - ▷ Returns $\pi = \theta z k^{\gamma}$ where k is capital, $z \sim \mathcal{N}(\mu + \lambda e, \sigma^2)$
 - ▷ $\theta \in \{0, 1\}$ is \mathcal{F} 's private information (*type*)
- Competitive investors know prior distribution of θ ($\Pr(\theta = 1) = \rho$)
 - ▷ \mathcal{F} raises D in debt & $E_{\mathcal{O}}$ in equity
 - ▷ \mathcal{F} *privately* chooses effort $e \in [0, \infty)$

Growth is additional capital raised by \mathcal{F} , $g = k/E_{\mathcal{F}}$

Model framework II

Payoffs ($t = 2$)

- Lenders receive $FV = (1 + r)D$ if $\pi > FV$; otherwise, $\max\{\pi\chi, 0\}$ (χ is recovery rate)
- PV of expected equity cash-flow is

$$v \equiv \beta(1 - \tau_i) \Pr(\pi > \underline{\pi}) \mathbb{E}[\pi - FV - T_c \mid \pi > \underline{\pi}] \quad (1)$$

where $\underline{\pi}$ is value of π above which net income is positive

- Equity-holders exp. payoff is $(1 - \alpha)v - E_O$; \mathcal{F} 's exp. payoff is

$$\underbrace{\alpha}_{\mathcal{F}'\text{'s cash flow rights}} v_\theta + \underbrace{B(v, \alpha)}_{\text{Private value of control}} - C(e) \quad (2)$$

Interpretation of parameters

$\pi = \theta z k^\gamma$ where $\Pr(\theta = 1) = p$ & $z \sim \mathcal{N}(\mu + \lambda e, \sigma^2)$; γ is *capital productivity*

- $1 - p$ is *adverse selection* in capital markets
 - ▷ Mass of negative NPV projects that receive funding
- λ is *social value* of control ($\frac{\partial \epsilon^*}{\partial \alpha} \propto \lambda$)
- $B = b\alpha^2 v$ is \mathcal{F} 's *private value* of control

Low γ & p , high b & λ all limit growth BUT have different effects on other observables

Structural estimation

Model fit & Estimates ($\pi = \theta z k^\gamma$ & $\Pr[\theta = 1] = p$ & $z \sim \mathcal{N}(\mu + \lambda e, \sigma^2)$)

Structural Parameters							
Parameter	γ	σ	μ	b	p	λ	ξ
	0.894	8.550	6.182	0.109	0.993	0.199	0.053
	(0.009)	(4.295)	(4.014)	(0.044)	(0.028)	(0.161)	(0.459)

Model Fit							
Moment	Leverage	Growth	OLS	ROA	P(Loss)	P(Def)	ROI
Model	0.40	2.42	0.89	0.03	0.24	0.29	0.07
Sample	0.38	2.33	0.90	0.04	0.17	0.23	0.13

Economic Implications	
Control Premium	6.00%
Social Value	4.33%
Deadweight Loss	10.81%

Family vs non-family ($\pi = \theta z k^\gamma$ & $\Pr(\theta = 1) = p$ & $z \sim \mathcal{N}(\mu + \lambda e, \sigma^2)$)

Similar return on capital ($\mathbb{E} \left[\frac{\partial \pi}{\partial k} \right] = \mu \gamma k^{\gamma-1}$) **BUT** non-family firms:

- Have higher recovery rate (χ)
- Have NO private value of control ($b \simeq 0$)

Parameter	γ	σ	μ	b	p	λ	χ
Family	0.894	8.550	6.182	0.109	0.993	0.199	0.053
Non-Family	0.899	6.088	6.537	0.014	0.987	0.067	0.487

Counterfactual analyses

- No asymmetric information ($p = 1$)
 - ▷ Investors *screen out* negative NPV projects
- No private value of control ($b = 0$)
 - ▷ \mathcal{F} receives no benefit from control
- No social value of control (fix $e = e^* \forall \alpha$)
 - ▷ Firm can hire external manager & induce same effort as \mathcal{F}

Counterfactual Analysis: No private value

\mathcal{F} issues equity & grows more: private value of control limits firm growth

	Size Growth	Final Stake	Outside Equity	Debt	Leverage	Pr(Def)	Firm Value
Estimated Model	2.422	74.15%	397,191€	842,355€	0.41	29.65%	2,386,559€
$b = 0$	3.559	51.22%	1,101,477€	1,029,152€	0.34	28.15%	3,298,795€

Counterfactual with $b = 0$ alone explain 67% of family vs. nonfamily growth differential we observe in the sample

Conclusions

Understanding firm-level growth important for economic policy

- We estimate model of control & financing decisions
- Estimates suggest that...
 - ▷ control motivations limit growth by distorting financing decisions
 - ▷ family blockholders have marginal direct effect on performance

Large shareholders may generate deadweight loss for the economy

Performance

	ROA (OLS)				Loss (Probit)			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Family	0.024*** (0.001)	0.024*** (0.001)	0.020*** (0.001)	0.024*** (0.001)	-0.253*** (0.008)	-0.271*** (0.008)	-0.272*** (0.009)	-0.353*** (0.009)
Sales Growth				Y				Y
Log-Assets				Y				Y
Tangibility				Y				Y
Initial Size			Y	Y			Y	Y
Country		Y	Y	Y		Y	Y	Y
Industry		Y	Y	Y		Y	Y	Y
Year		Y	Y	Y		Y	Y	Y
Cohort			Y	Y			Y	Y
R-squared	0.006	0.029	0.029	0.033	0.013	0.043	0.047	0.043
Observations	103,470	103,470	103,470	103,470	103,470	103,470	103,470	103,470

Leverage

Leverage								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Family	-0.001 (0.001)	0.002*** (0.001)	0.007*** (0.001)	0.014*** (0.001)	-0.006*** (0.001)	-0.001 (0.001)	-0.001 (0.001)	0.009*** (0.001)
Sector Sales Growth (SSG)					0.019*** (0.004)	-0.012** (0.005)	-0.012** (0.005)	-0.008* (0.005)
Family*SSG					0.027*** (0.006)	0.031*** (0.006)	0.030*** (0.006)	0.029*** (0.005)
ROA				-0.084*** (0.002)				-0.084*** (0.002)
(log)-Assets				0.013*** (0.001)				0.013*** (0.001)
Tangibility				0.141*** (0.002)				0.141*** (0.001)
Country		Y	Y	Y		Y	Y	Y
Industry		Y	Y	Y		Y	Y	Y
Year		Y	Y	Y		Y	Y	Y
Cohort			Y	Y			Y	Y
R-squared	0.000	0.212	0.214	0.234	0.001	0.185	0.186	0.219
Observations	152,318	152,318	152,318	152,318	152,318	152,318	152,318	152,318

▶ Back