From Good to Bad Concentration? U.S. Industries over the past 30 years

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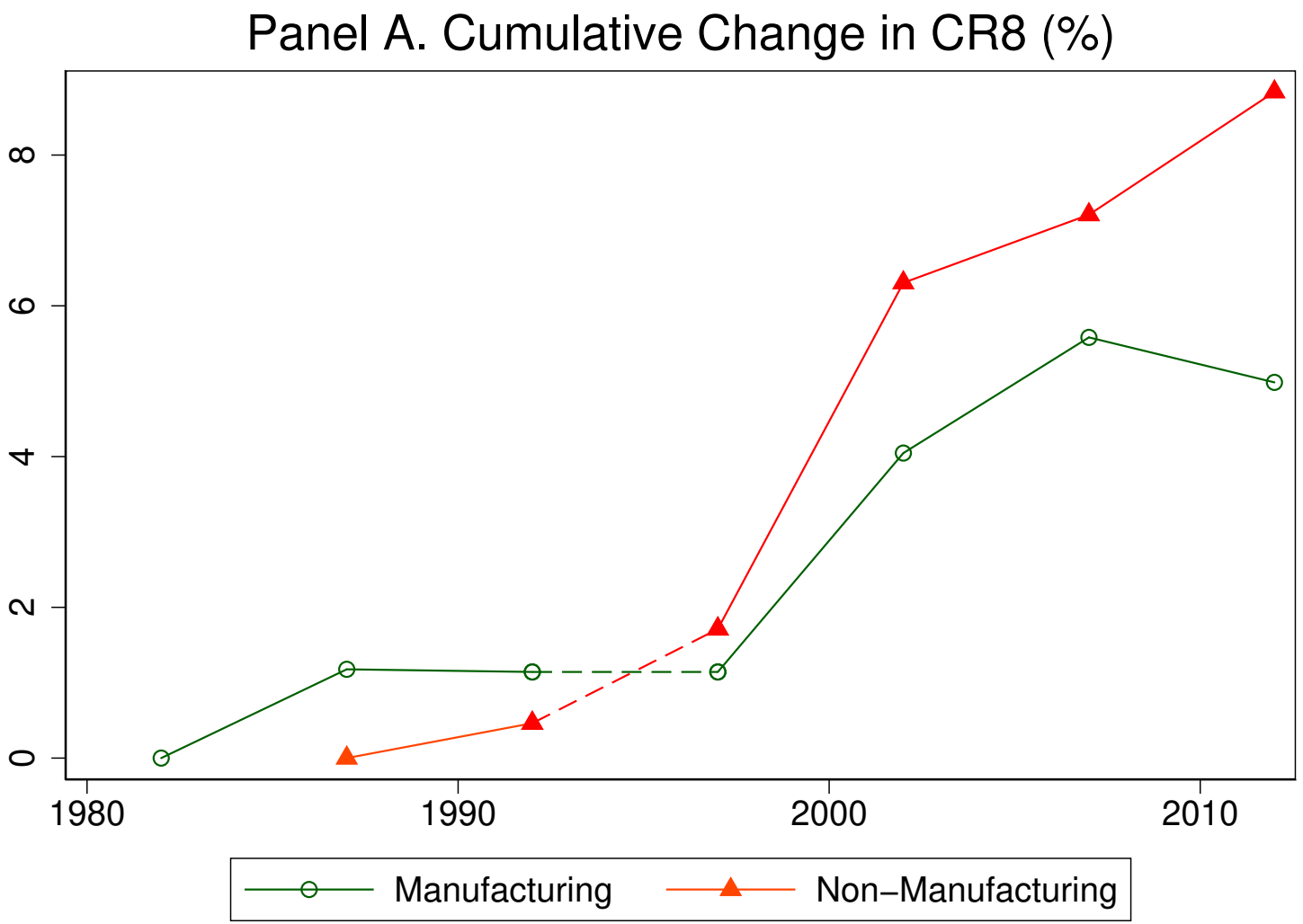
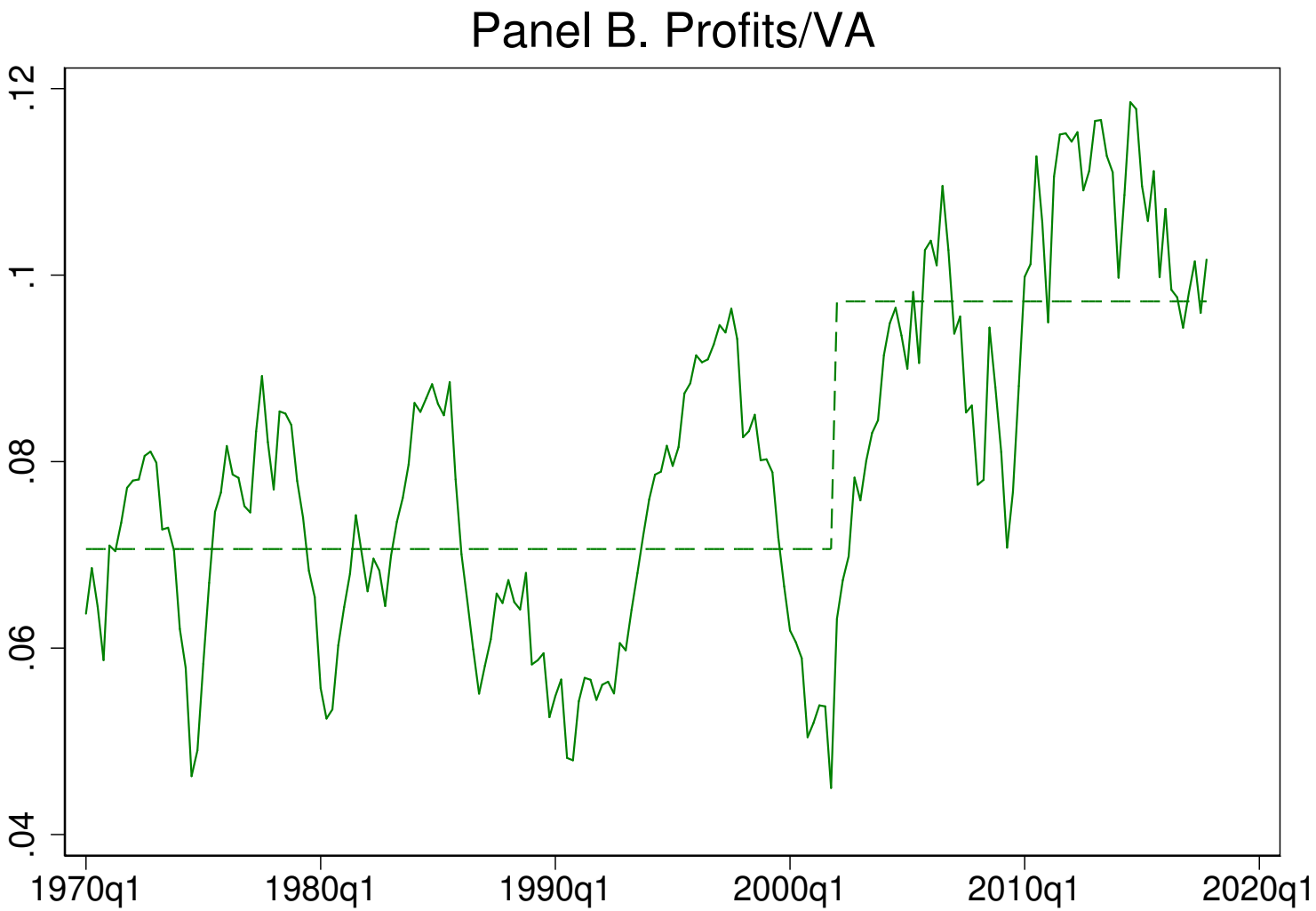
Stylized Fact: Concentration



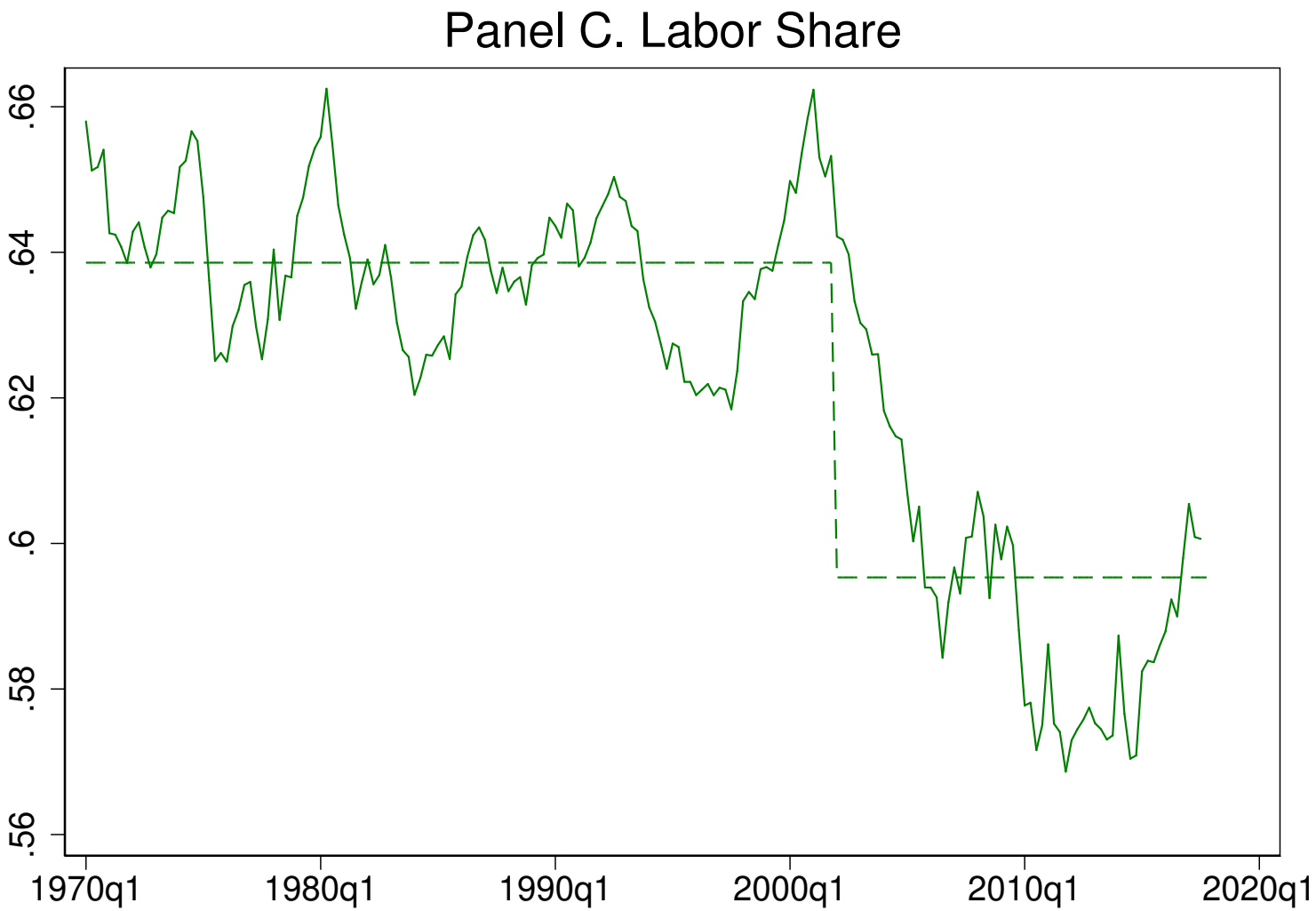
Source: U.S. Economic Census for all Businesses. Dashed lines because of changes in industry classification from SIC to NAICS.

Stylized Fact: After-Tax Net Profit Margins



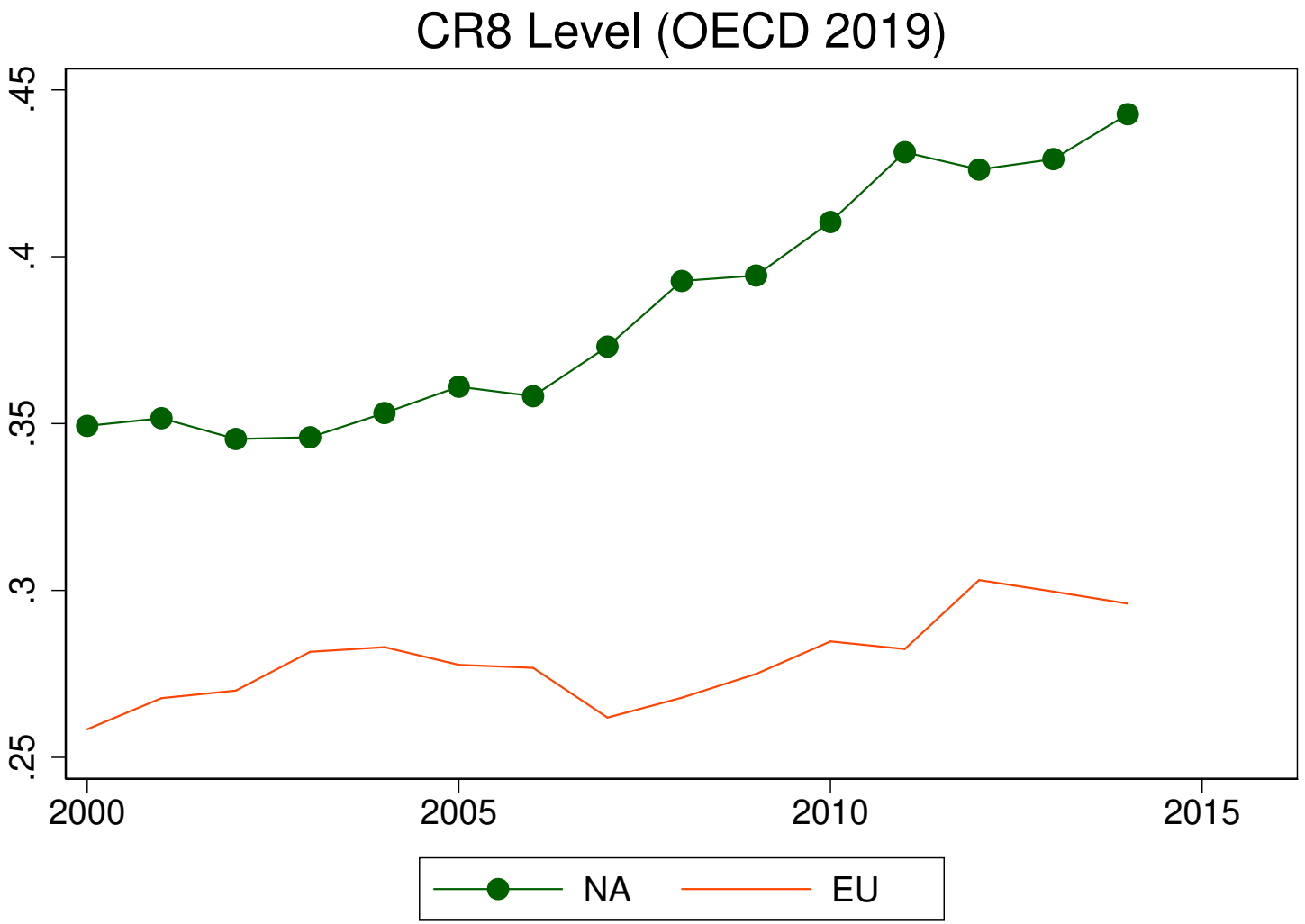
Source: FRED Non Financial Corporates.

Stylized Fact: Labor Share



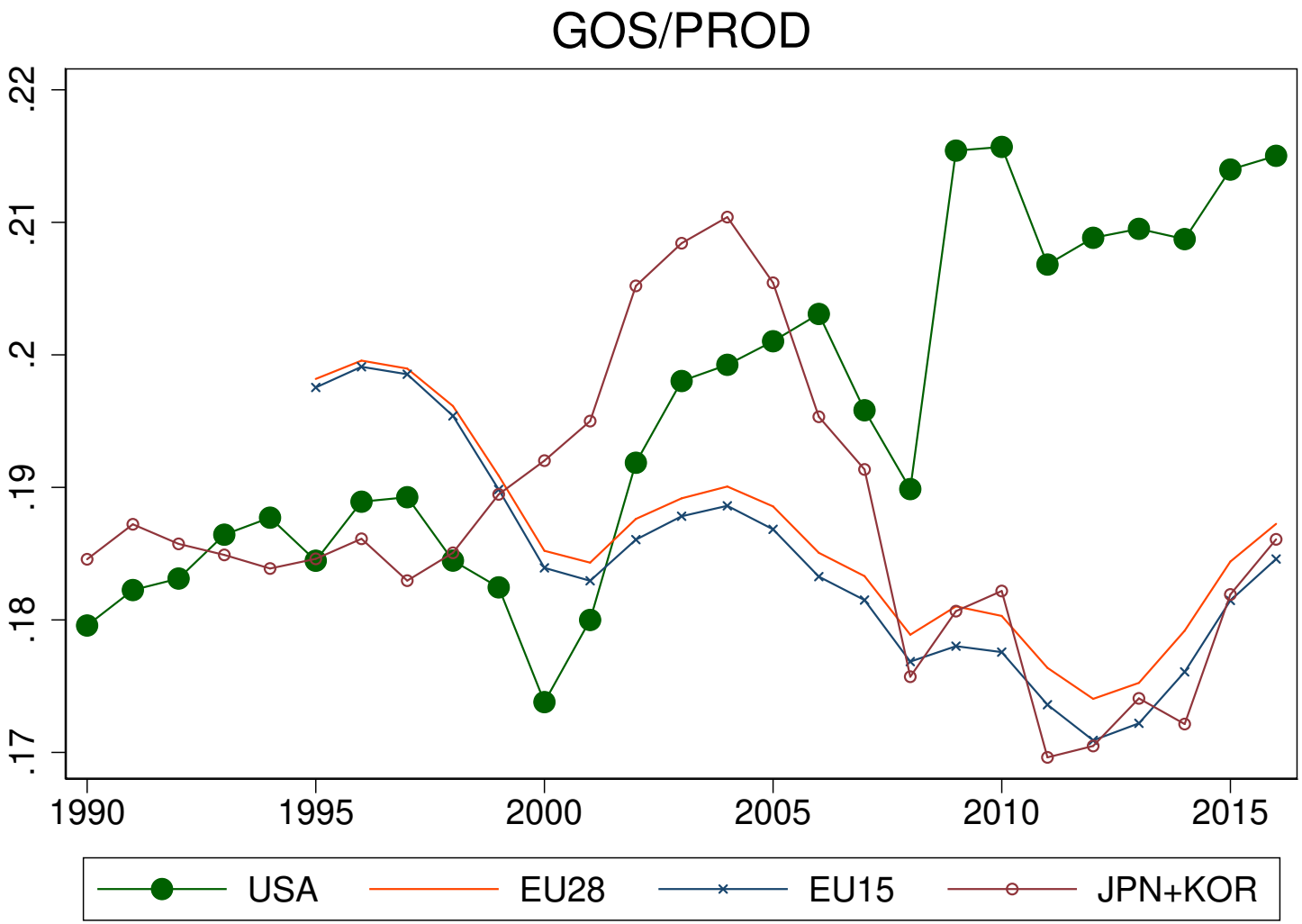
Source: FRED Non Financial Corporates.

US vs EU: Concentration



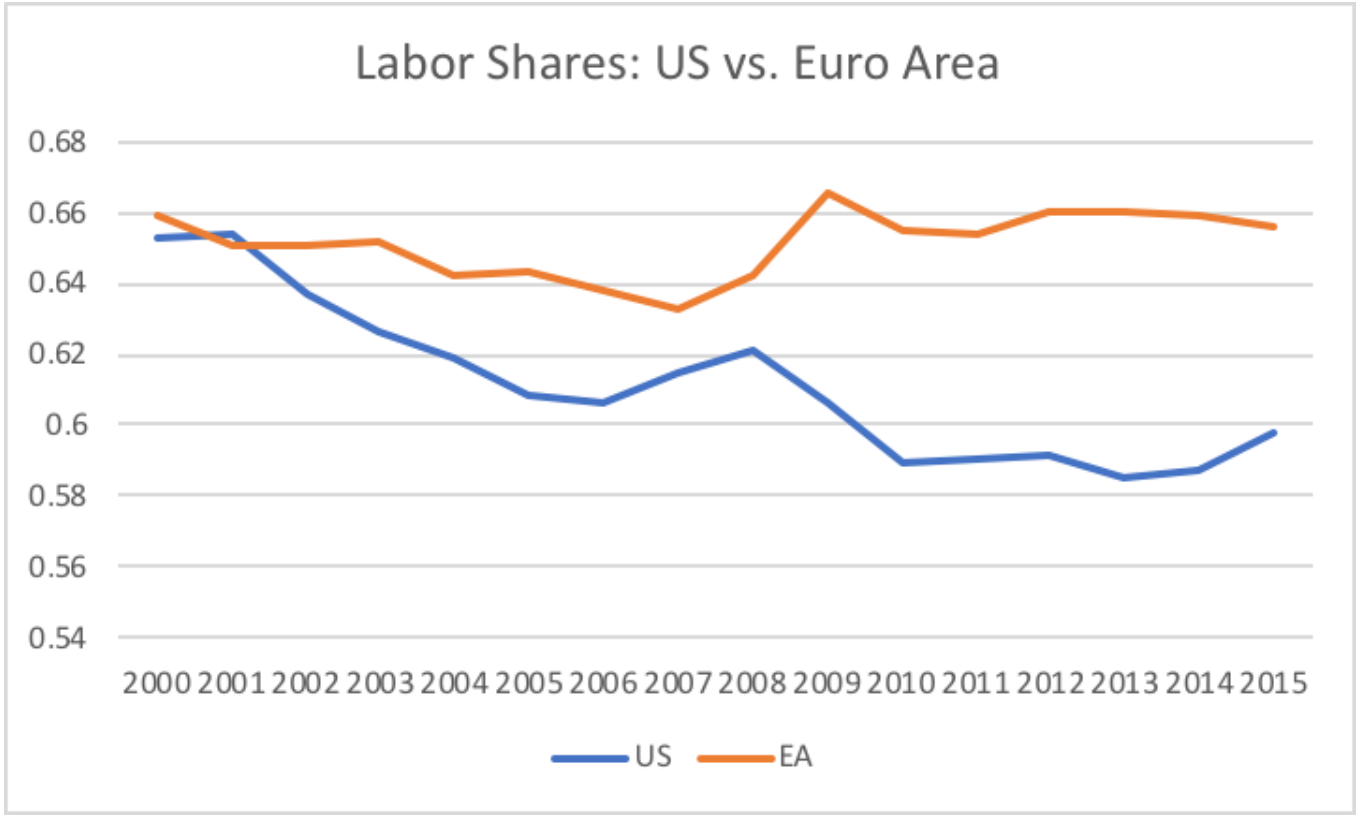
Source: Bajgar et al. (2019), OECD STAN

US vs EU & Asia: Profit Rates



Source: OECD STAN. Pre-Tax Gross Operating Surplus over Revenues.

US vs EU: Labor Shares



Source: EU KLEMS 2017. See also Cette et al. (2019).

Theory: Good vs Bad Concentration

- Ex-post profits: $\pi = \frac{\mu}{1+\mu}\left(\frac{a}{A}\right)^{\sigma-1}\frac{PY}{N} - \phi$
- Free entry: $\frac{\mathbb{E}[\pi]}{r+\delta} \leq \kappa$
- Number of firms (symmetric)

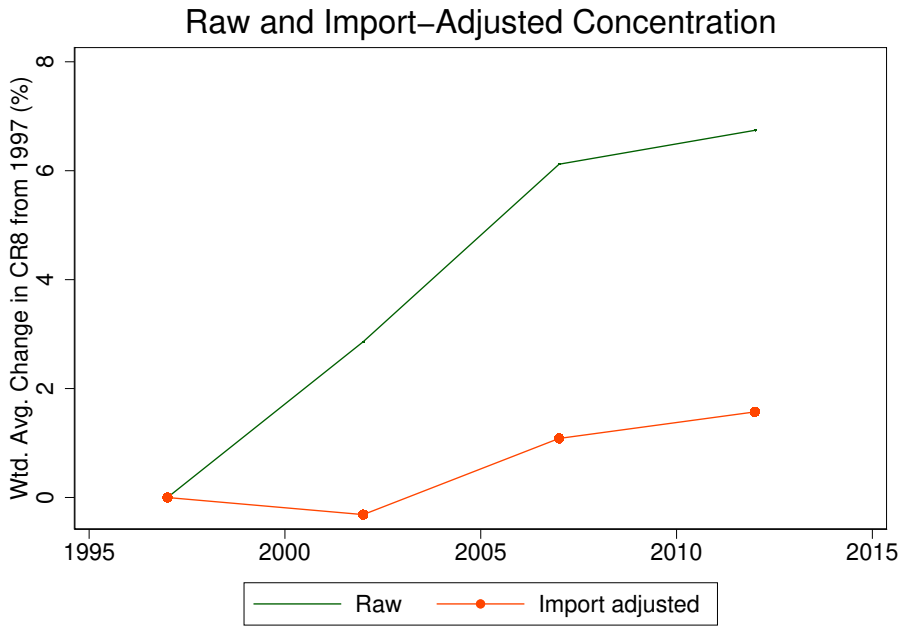
$$N = \frac{\mu}{1+\mu}\frac{PY}{(r+\delta)\kappa + \phi}$$

  - Bad concentration: barriers to entry κ, regulatory capture
  - Good concentration: efficient response to TFP, competition

- Selection effect $a^*(\sigma) \nearrow$

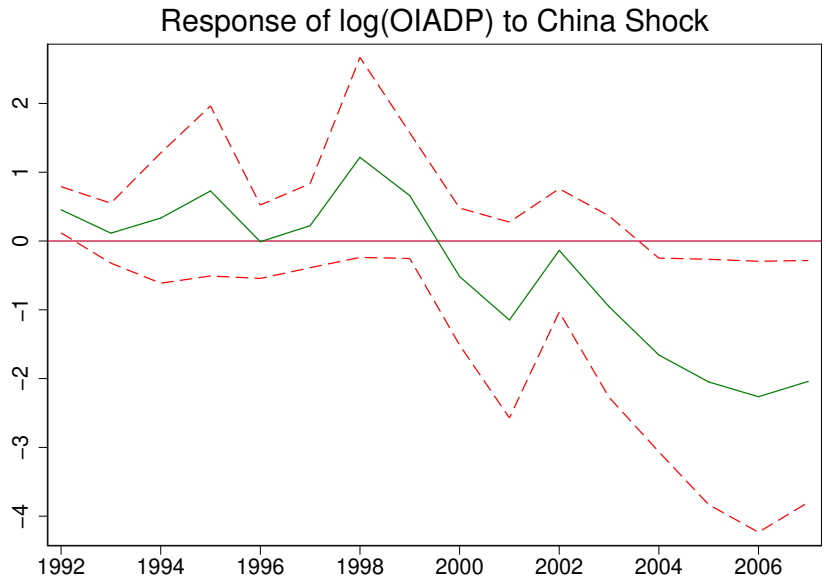
$$(r+\delta)\kappa = (1 - F(a^*)) \times E[\pi \mid a > a^*].$$

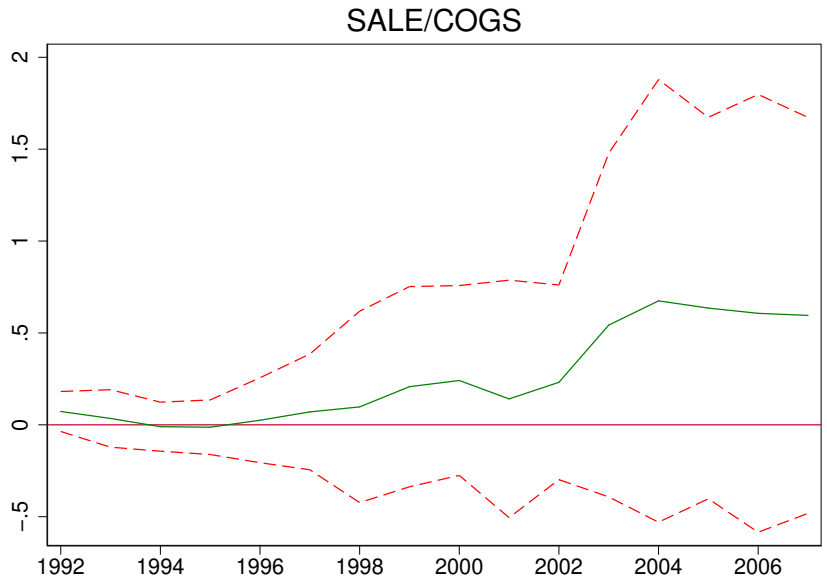
China Shock: N, Import-Adj. CR8



Notes: Compustat, NBER-CES and Peter Schott's data.

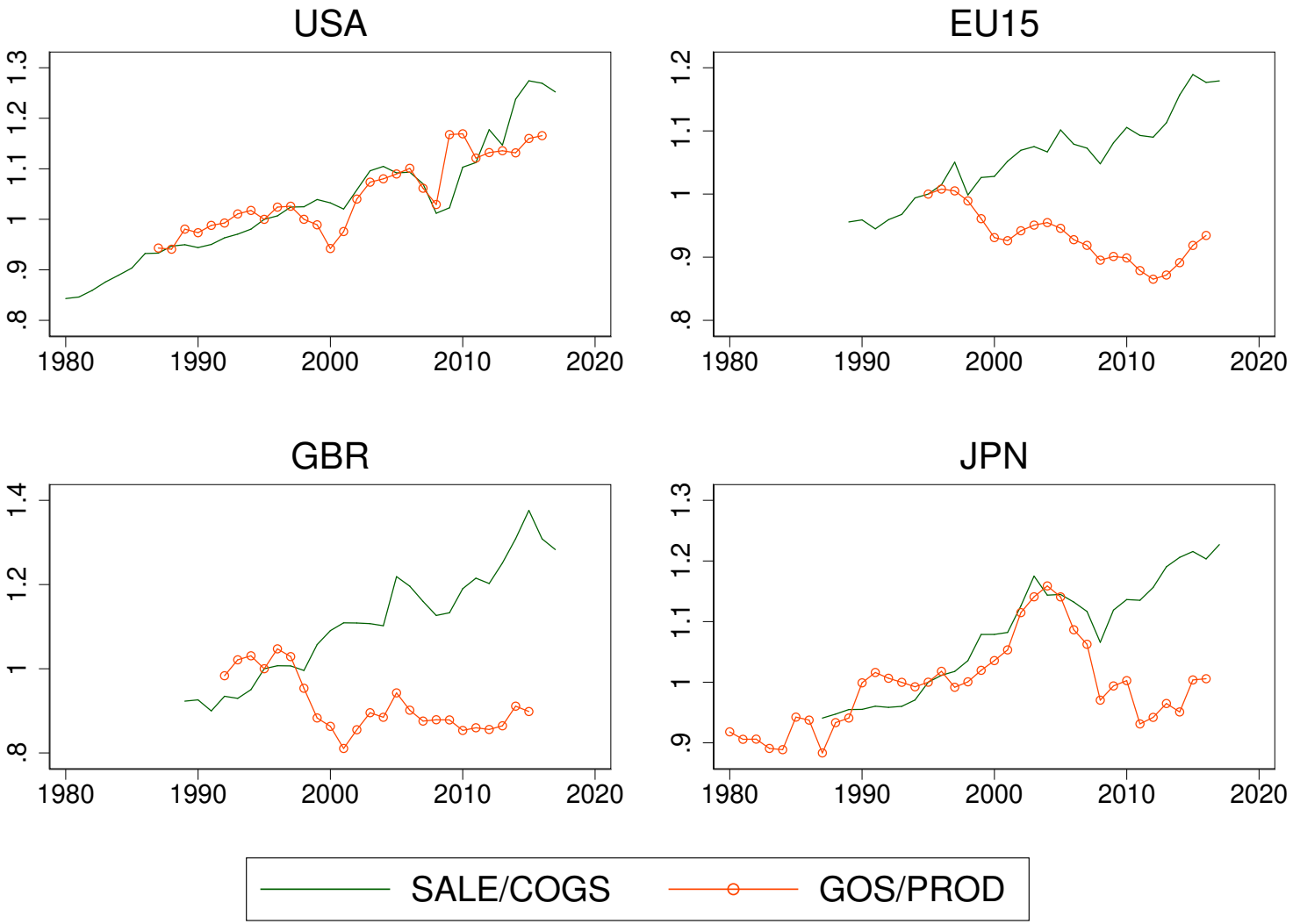
China Shock: Evaluating Measures





Notes: Compustat, NBER-CES and Peter Schott's import data. Plots show β_t from regressions $y_{i,j,t} = \beta_t \times NTR\,Gap_j + \delta_i + \gamma_t + \varepsilon_{i,j,t}$.

SALE/COGS vs Gross Profit Rates



Sources: OECD Stan and Compustat.

Testable Prediction: Dynamics of Market Shares

- Market shares

$$s_{i,j,t} = \frac{h_{i,j,t}}{N_j} \left(\frac{(1+\mu_j)\, a_{i,j,t}}{(1+\mu_{i,j})\, A_{j,t}} \right)^{\sigma_j - 1}$$

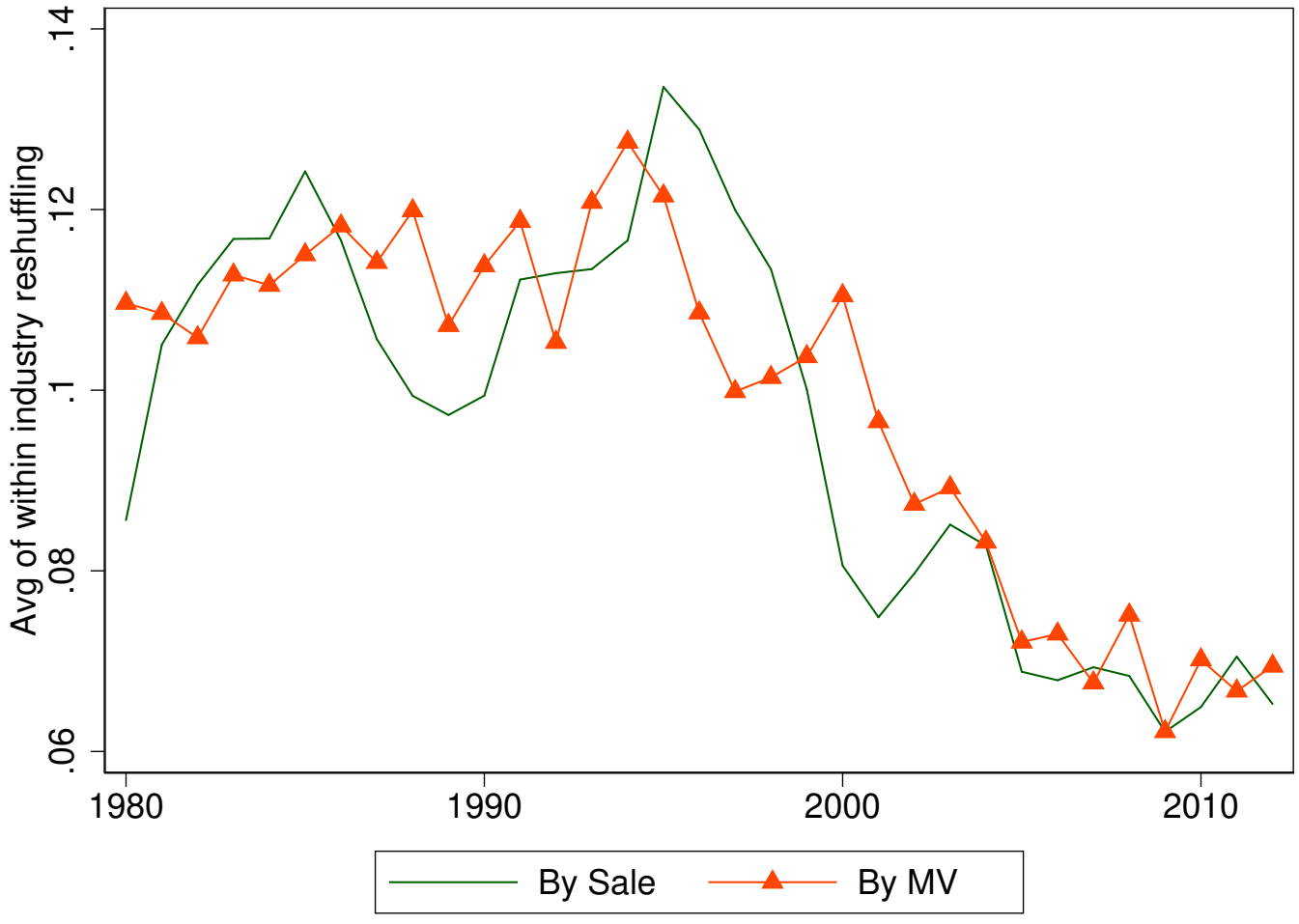
- **Prop.** *All else equal, an increase in σ leads to an increase in the volatility of market shares.*

$$\Sigma^2_{\log s} = \Sigma^2_{\log h} + (\sigma_j - 1)^2 \Sigma^2_{\log a}$$

Testable Predictions

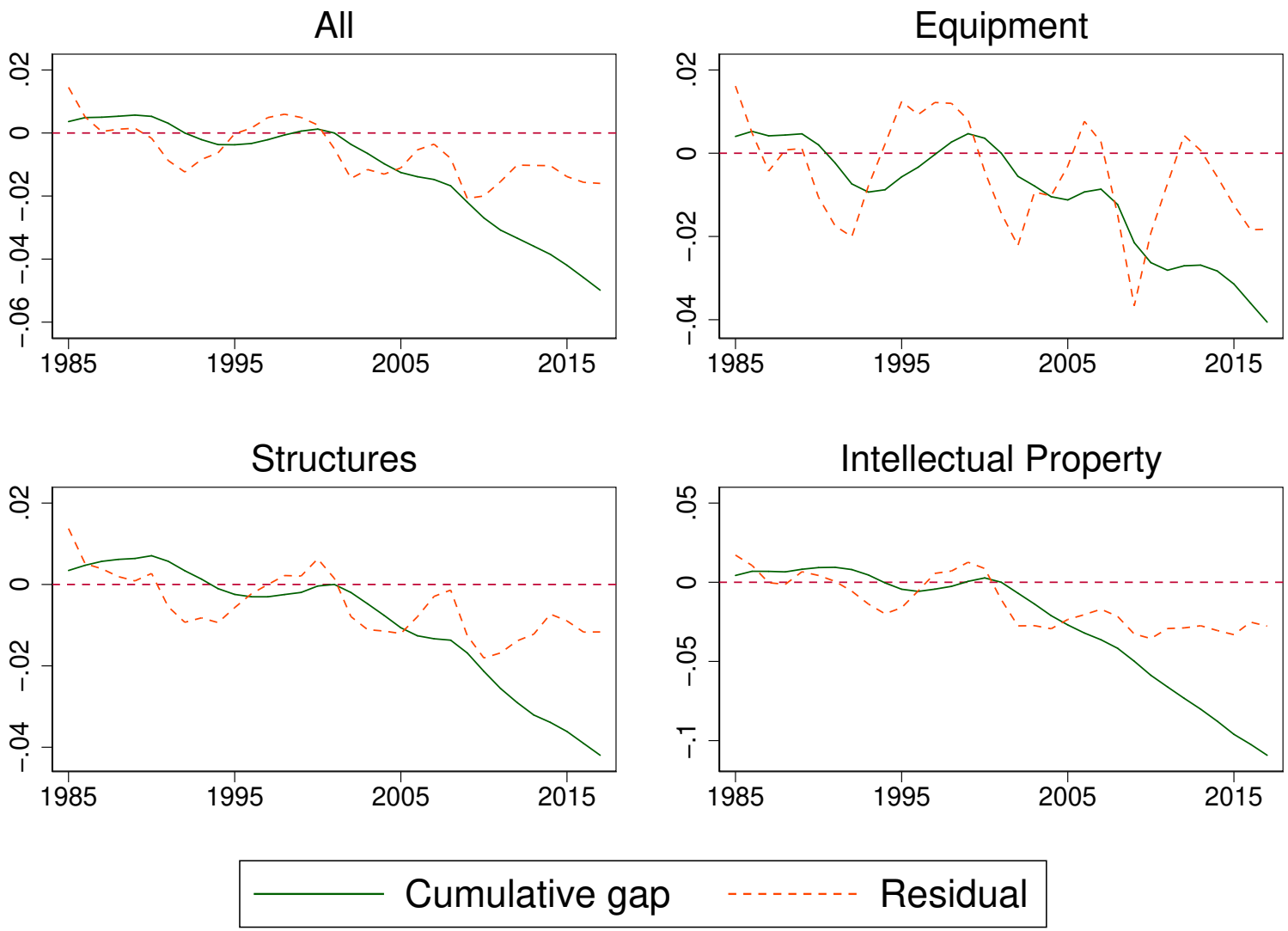
	Theories	
	Good σ	Bad κ
Turnover / Exit	+	−
Investment / K Growth	+	−
Corr(ΔCR,ΔTFP)	+	−
Corr(ΔCR,ΔP)	−	+

Declining Turnover



Source: Compustat NA, following BEA industries. Measure is 1- 5-year ahead correlation of ranks within industry.

Investment: Growth in K vs. Q



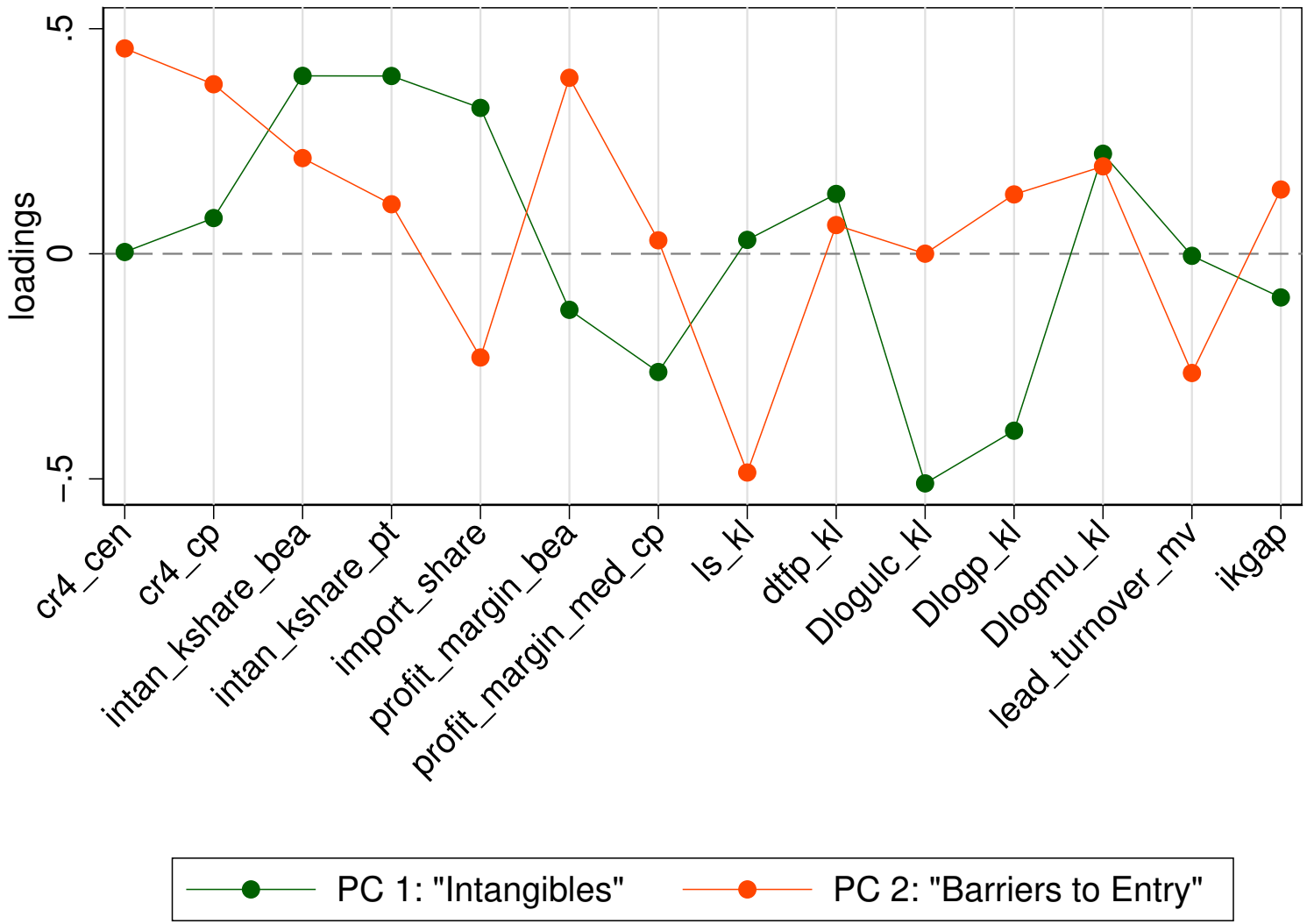
Notes: Q for Non-Financial corporate sector from FRED; Capital stock from BEA

TFP, Prices and Markups

	$\Delta_5 \log(TFP)$		$\Delta_5 \log(P)$		$\Delta_5 \log(\mu)$	
	(1) Pre-00	(2) Post-00	(3) Pre-00	(4) Post-00	(5) Pre-00	(6) Post-00
$\Delta_5 log(CR4)$	0.174*	-0.049	-0.090	0.092	-0.102*	0.121$^+$
	(0.066)	(0.050)	(0.061)	(0.091)	(0.042)	(0.067)
Cons	0.017	0.027**	0.073**	0.095**	0.052**	0.046**
	(0.014)	(0.009)	(0.013)	(0.010)	(0.012)	(0.011)
Year FE	Y	Y	Y	Y	Y	Y
R^2	.12	.11	.049	.074	.049	.083
Observations	92	138	92	138	92	138

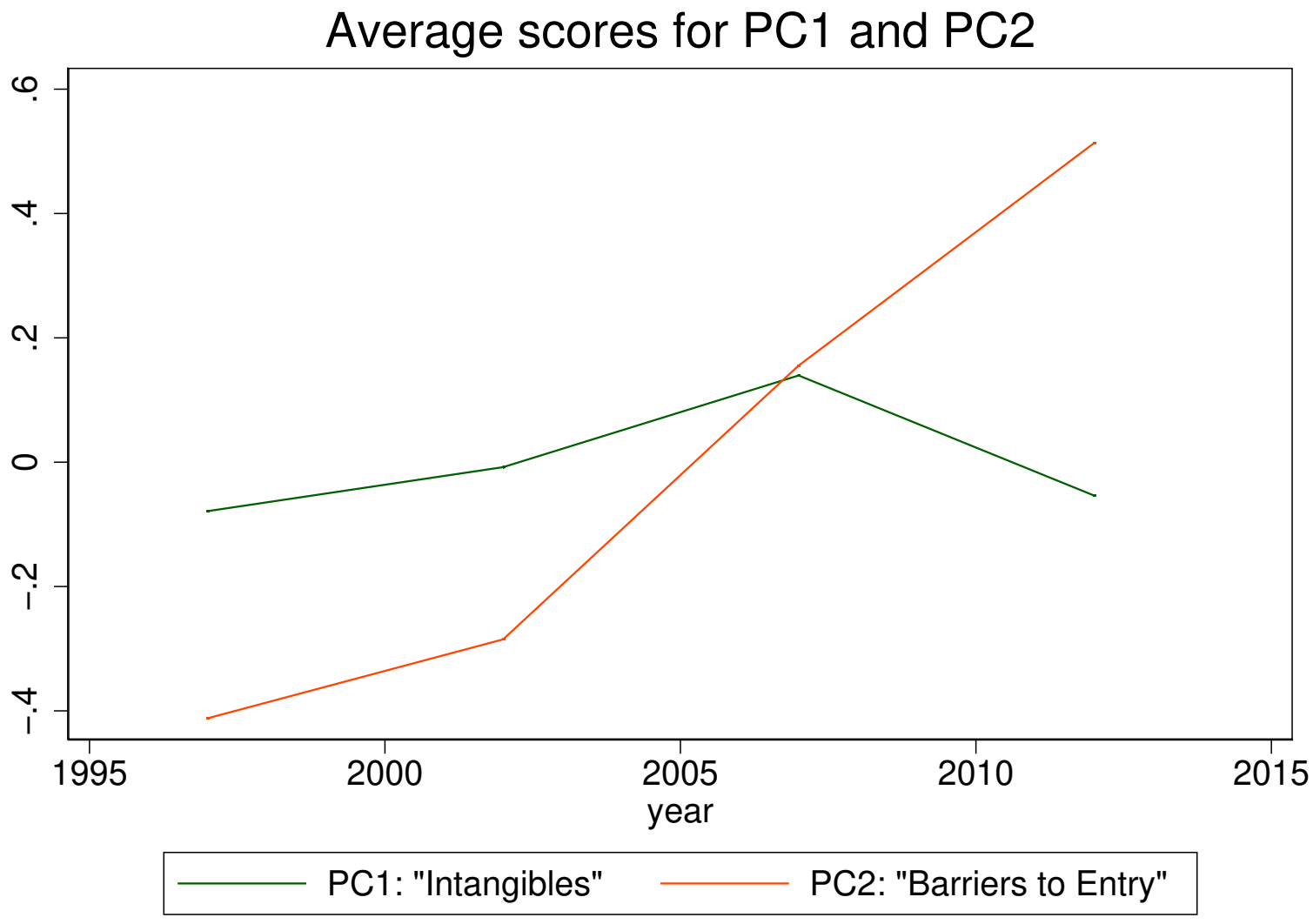
Source: BLS multifactor and Compustat.

σ vs κ? Principal Component Loadings

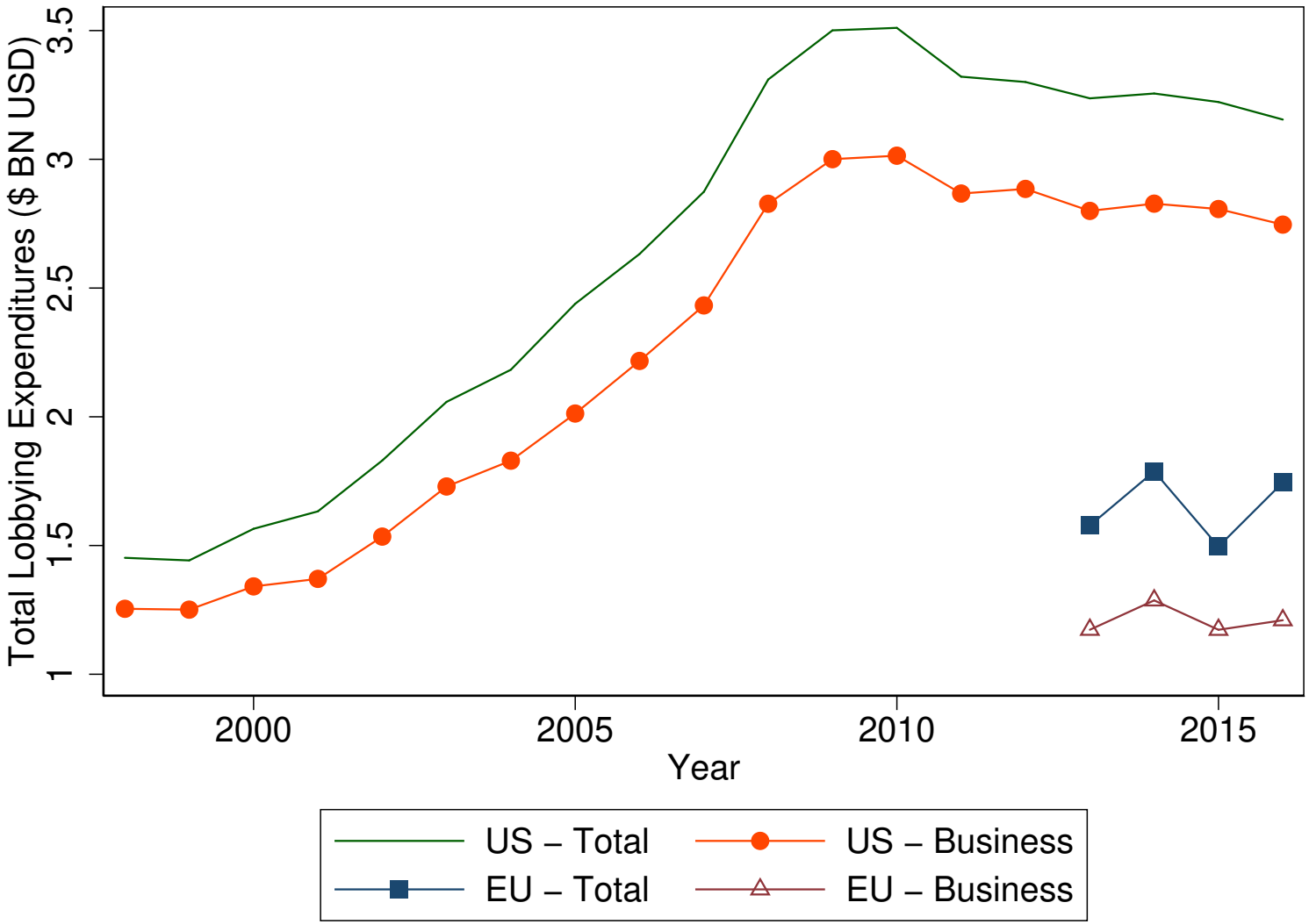


Source: “cen” census; “cp” Compustat; “pt” Peters & Taylor; “kl” Klems.

Components over Time



Lobbying?



Source: Gutiérrez and Philippon (2018)

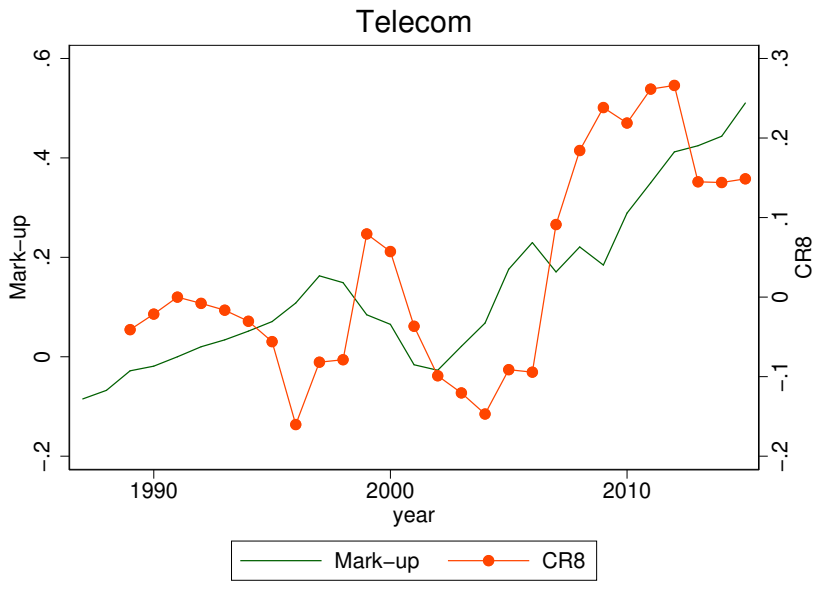
Four prominent explanations

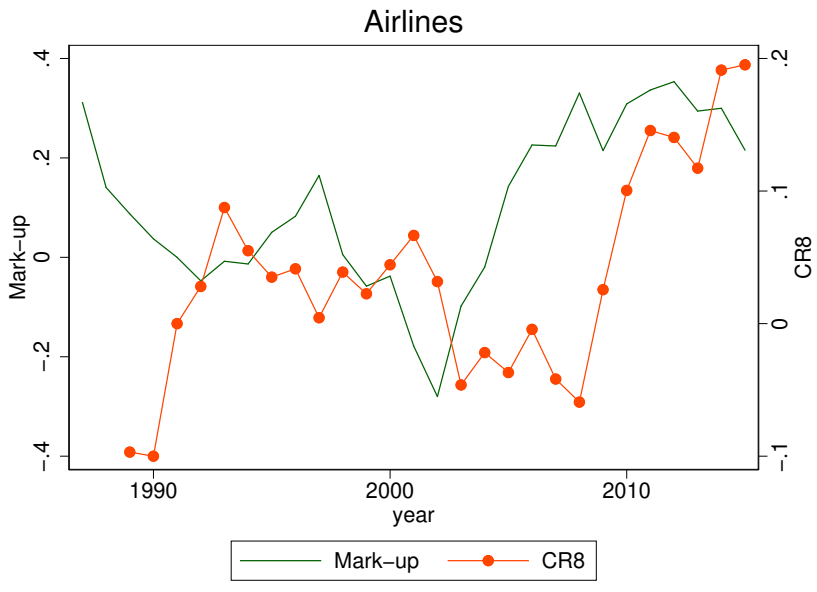
- **Rising Capital Share** (α).
  - Alexander and Eberly (2016), Crouzet and Eberly (2018), Acemoglu and Restrepo (2017)
- **Rising Elasticity** (σ).
  - Autor et al. (2017)
- **Increasing Returns to Scale** (γ).
  - Aghion et al. (2018)
- **Rising Barriers to Competition** (κ).
  - Gutiérrez and Philippon (2018), Jones et al. (2018) , Gutiérrez and Philippon (2019)

Summary of Theories and Measures

			Theories			
		Data	α	σ	γ	κ
1. Intern. Evidence	Common global trends	–	+	+	+	–
2. Entry, Exit and Turnover	Leader turnover	–	?	+	–	–
	Elast. of Entry to Q	–	?	+	+	–
	Exit Rate	–	?	+	+	–
3. Corr. of *CR*, TFP and prices	Corr(ΔCR,ΔTFP)	+..-	?	+	+	–
	Corr(ΔCR,ΔP)	-..+	?	–	–	+
4. Inv. & profits by leaders	Agg. inv. rate	–	+	?	?	–
	Leader inv. rate	–	–	+	+	–
	Leader profits	+	?	?	+	+
5. Ret. to Scale	Estimated RS*	0+	0	–	+	?

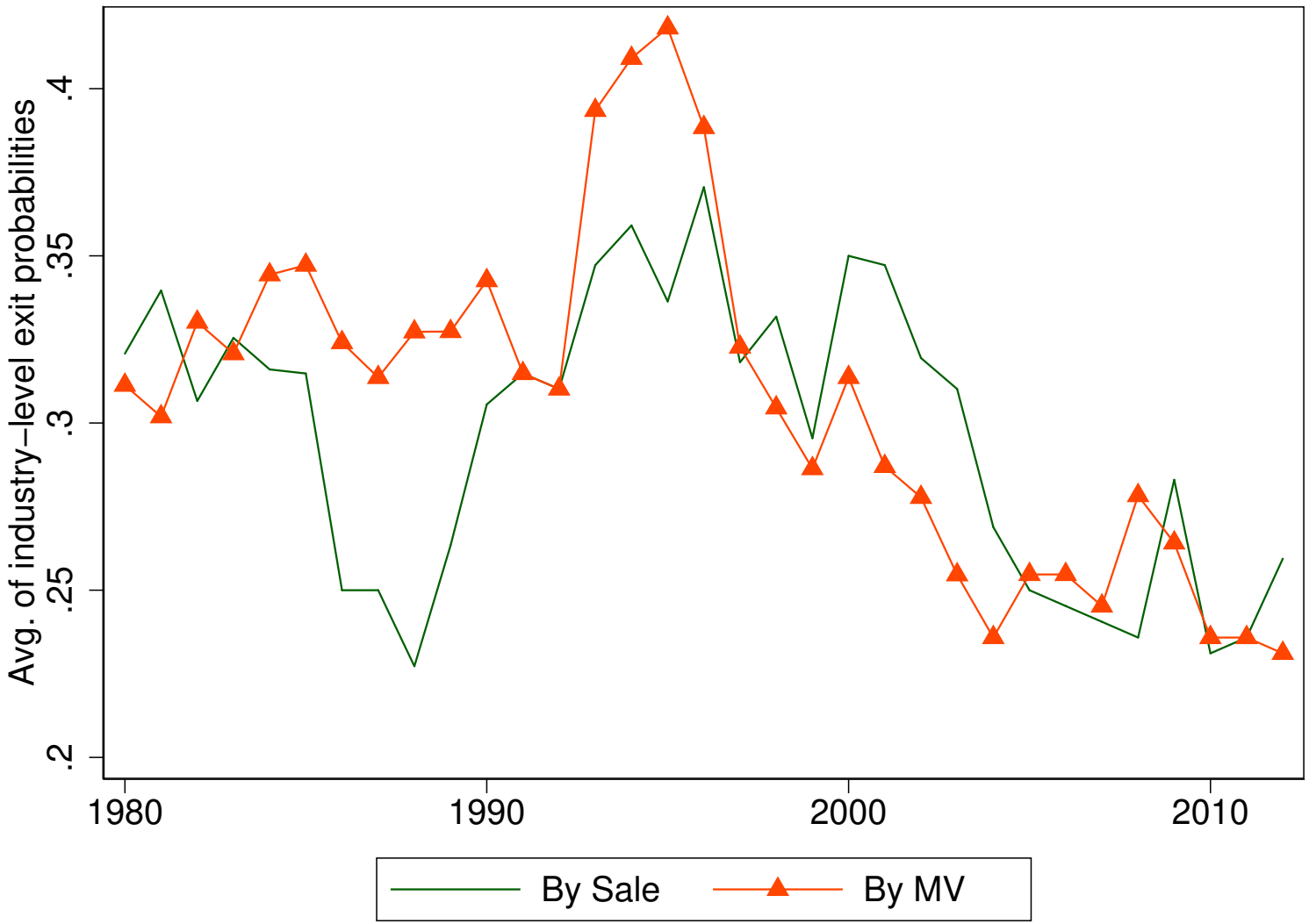
Airlines and Telecom





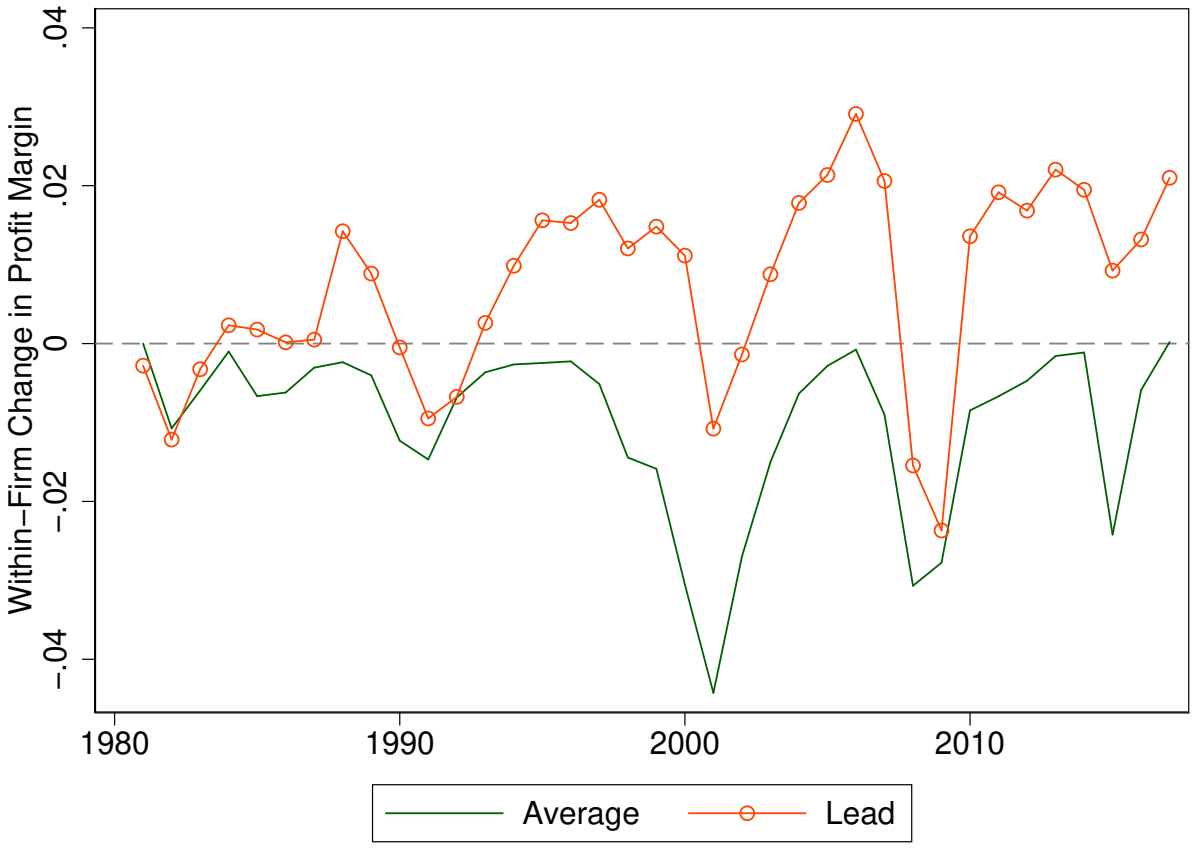
Source: BLS multifactor and Compustat.

Turnover of Leaders



Source: Compustat NA, following BEA industries.

Change in Profits - Within or Between Firms?



Source: Compustat NA. Regression: $\pi_{i,j,t} = \beta_t \times Lead_{i,j,t} + \delta_i + \gamma_t + \varepsilon_{jt}$. Average: γ_t. Leader: $\gamma_t + \beta_t$.

Increasing Harm at High CR?

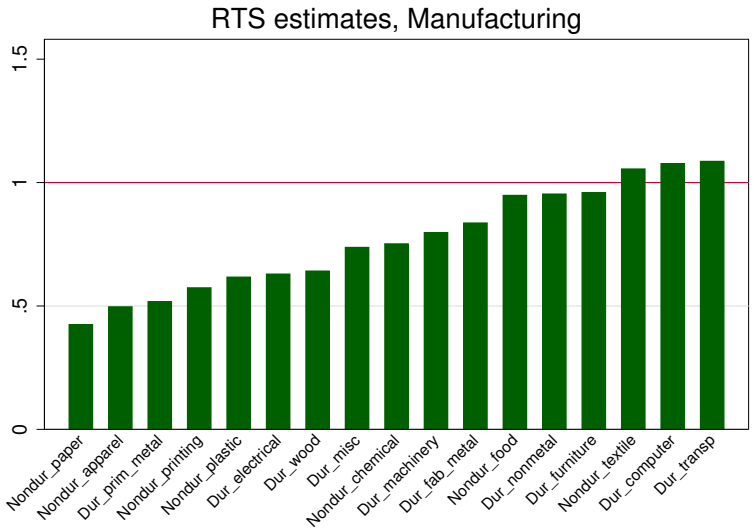
	$\Delta_5 \log(\mu)$			$\Delta_5 \log(\mu)$		
	(1) All	(2) Mfg	(3) NonMfg	(4) All	(5) Mfg	(6) NonMfg
$\Delta_5 \log(CR4_{jt})$	0.00	0.09**	0.00	0.12*	0.10**	0.12*
	(0.01)	(3.73)	(0.01)	(2.06)	(3.35)	(2.01)
$\Delta_5 \log(CR4_{jt}) \times 1_{>2002}$	0.26**	0.14*	0.26**			
	(3.70)	(2.16)	(3.62)			
$\Delta_5 \log(CR4_{jt}) \times$ High CR				0.40**	0.10	0.40**
				(2.87)	(1.61)	(2.81)
High CR				-0.01	0.07**	-0.01
				(-0.40)	(2.95)	(-0.39)
Cons	0.03**	0.10**	0.03**	0.02+	0.07**	0.02+
	(3.42)	(7.18)	(3.35)	(1.92)	(11.97)	(1.88)
Sec x Yr FE	Y	Y	Y	Y	Y	Y
R2	.36	.33	.36	.35	.36	.35
Observations	3,141	2,743	398	3,141	2,743	398

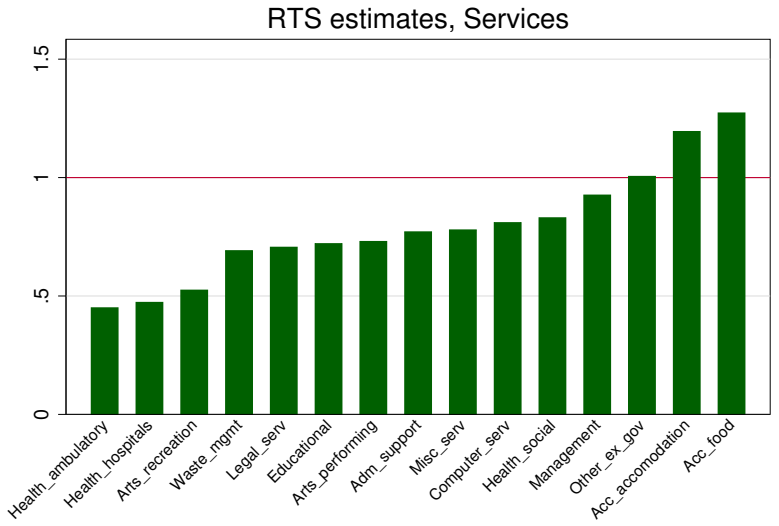
Source: U.S. Economic Census, NBER-CES and BEA

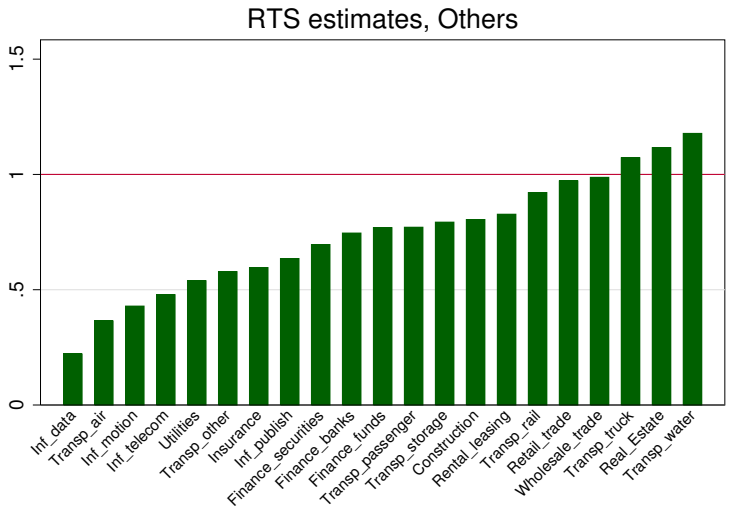
Why After 2000? Returns to Scale?

- Why is bad concentration more prevalent after 2000?
- Perhaps returns to scale have increased?
  - Using the approach of Basu and Fernald (1997), we find a moderate increase from 0.78 to 0.80.
  - De-Loecker et al. (2019) estimate increase from 1.03 to 1.08 in US.Diez et al. (2018) reach similar conclusions globally.
  - There is no evidence that returns to scale have increased significantly in recent years

Estimates

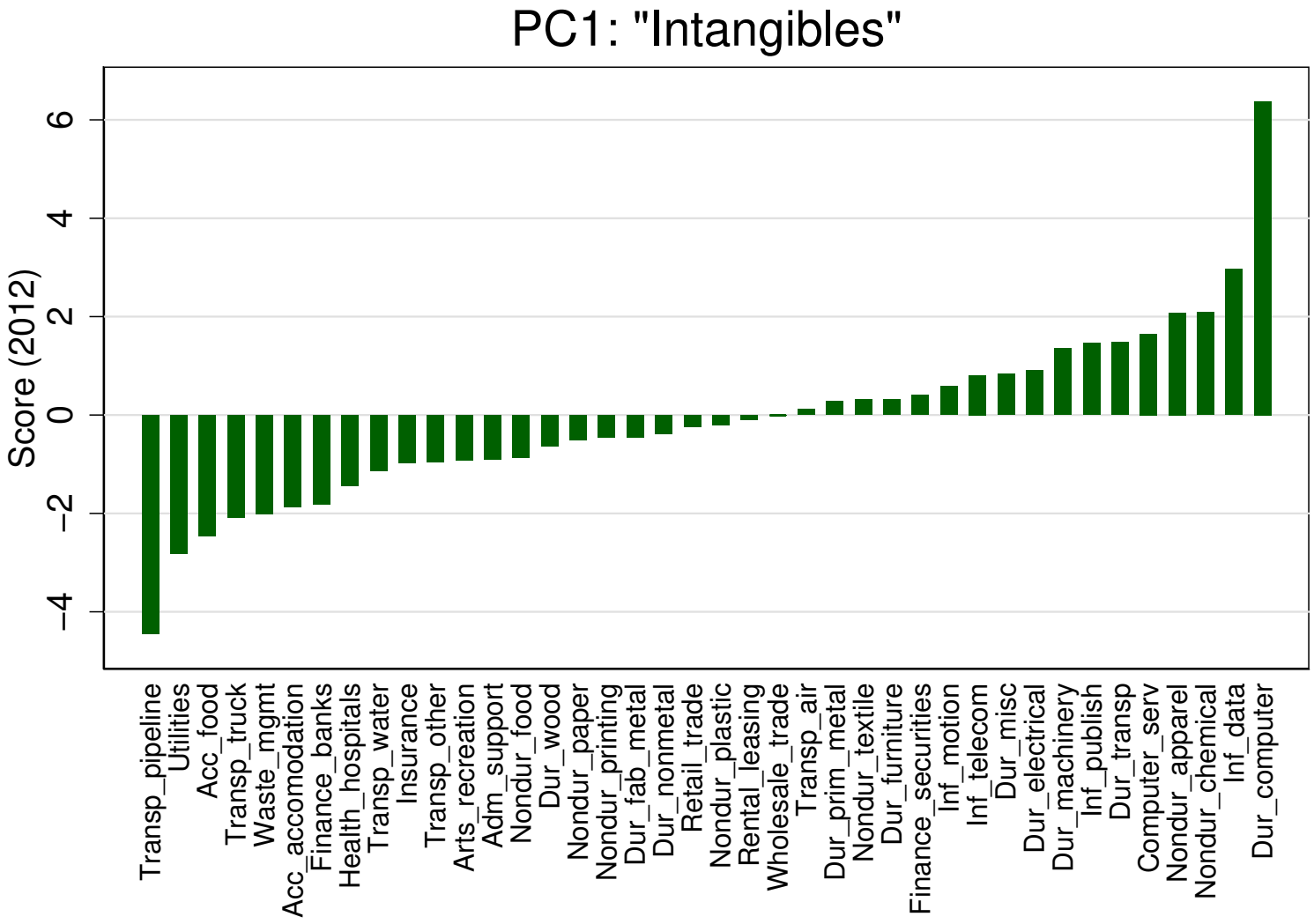




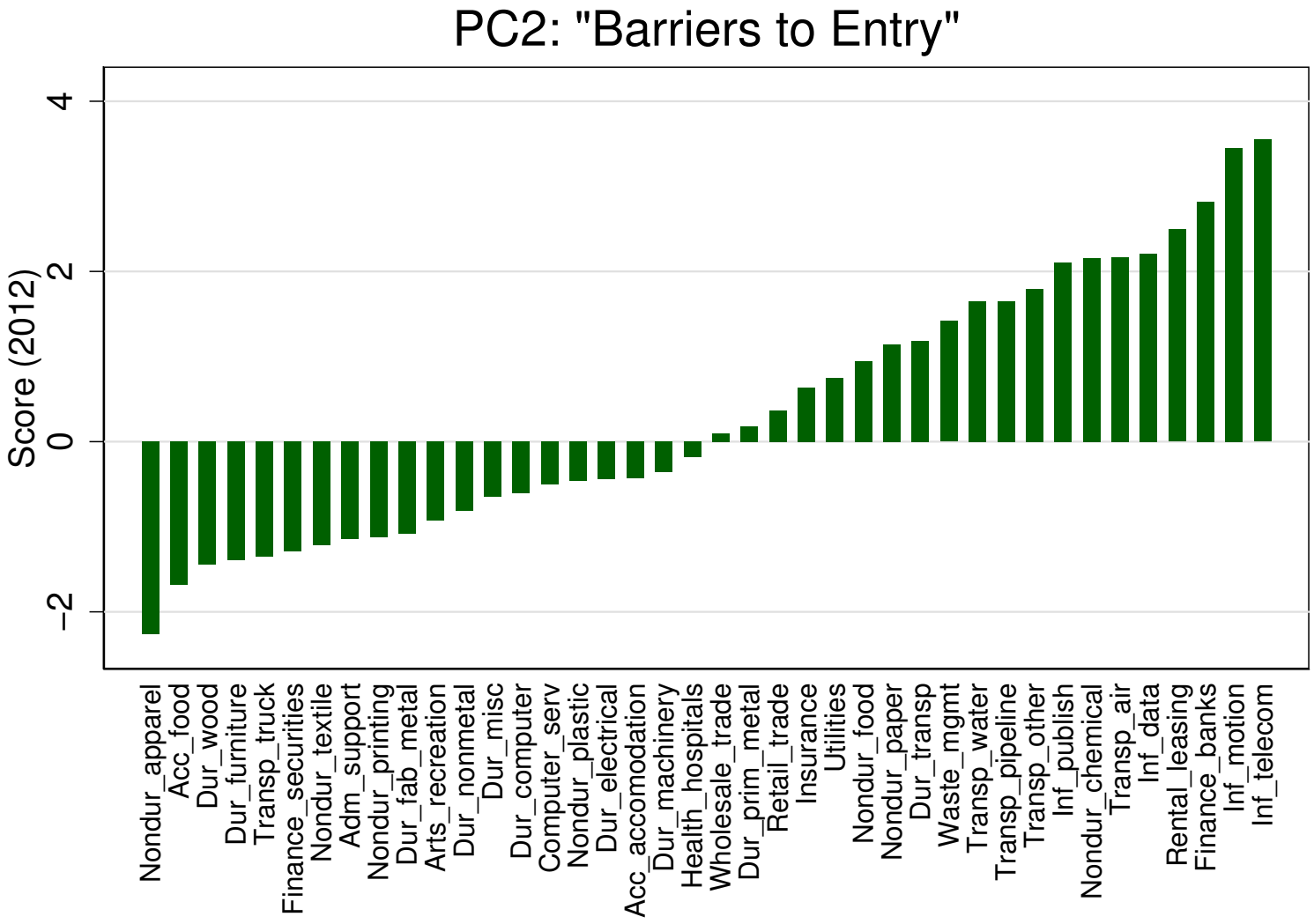


Source: BLS multifactor

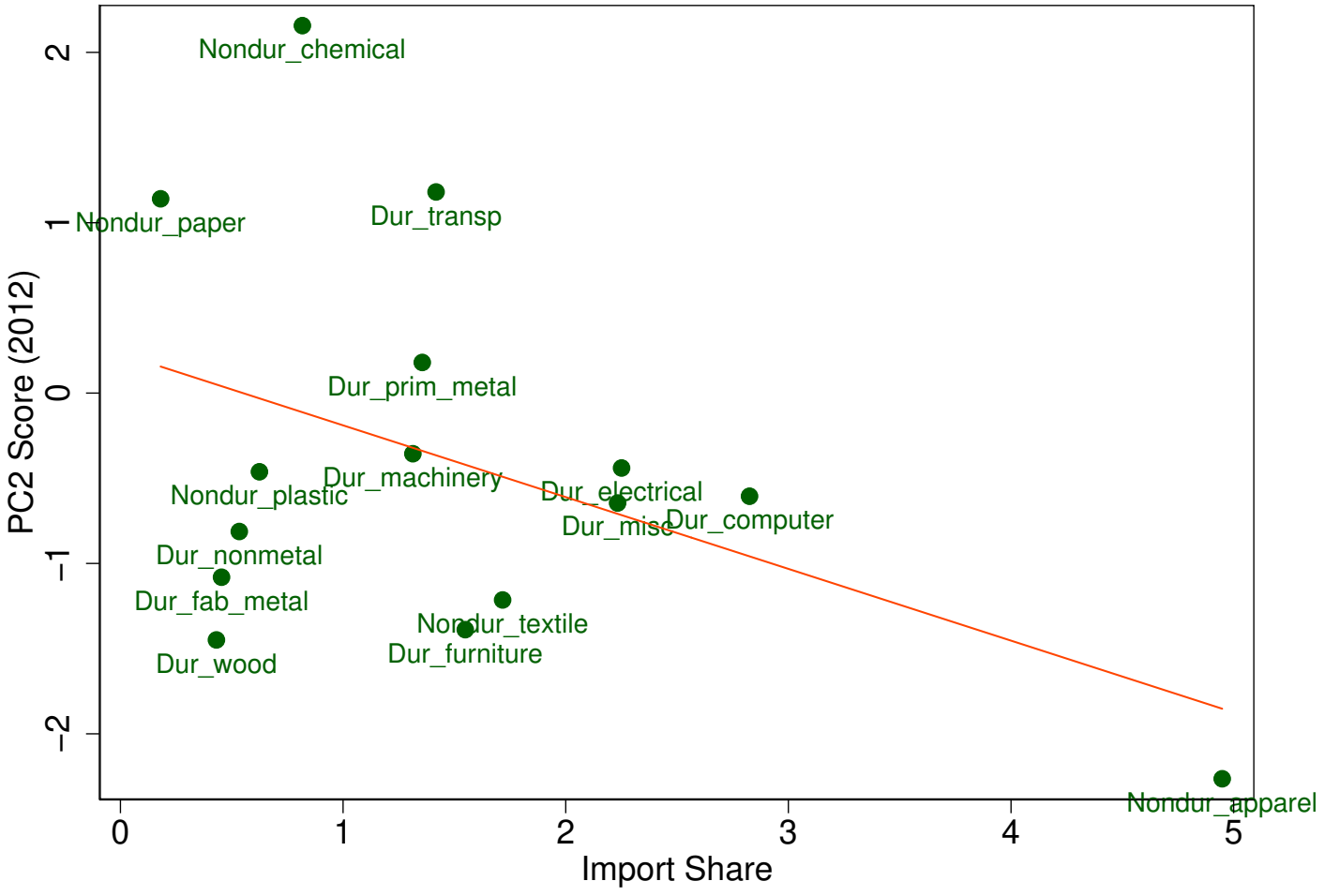
First Principal Component: Intangibles



Second Principal Component: Barriers to Entry



PC2 scores ("Barriers to Entry") vs Import Shares



Sources: BEA. Imports from Peter Schott's data. Notes: Only manufacturing.

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