

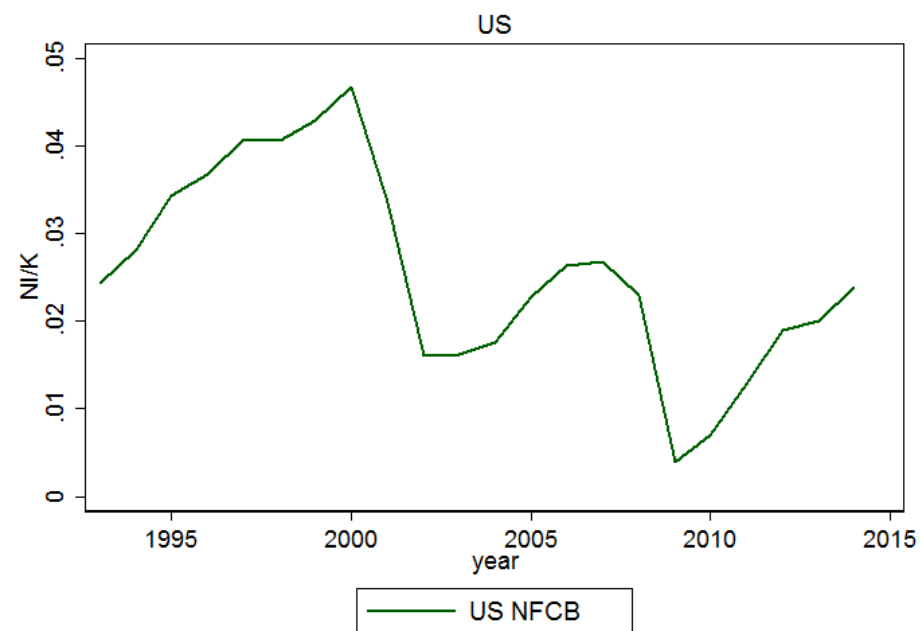
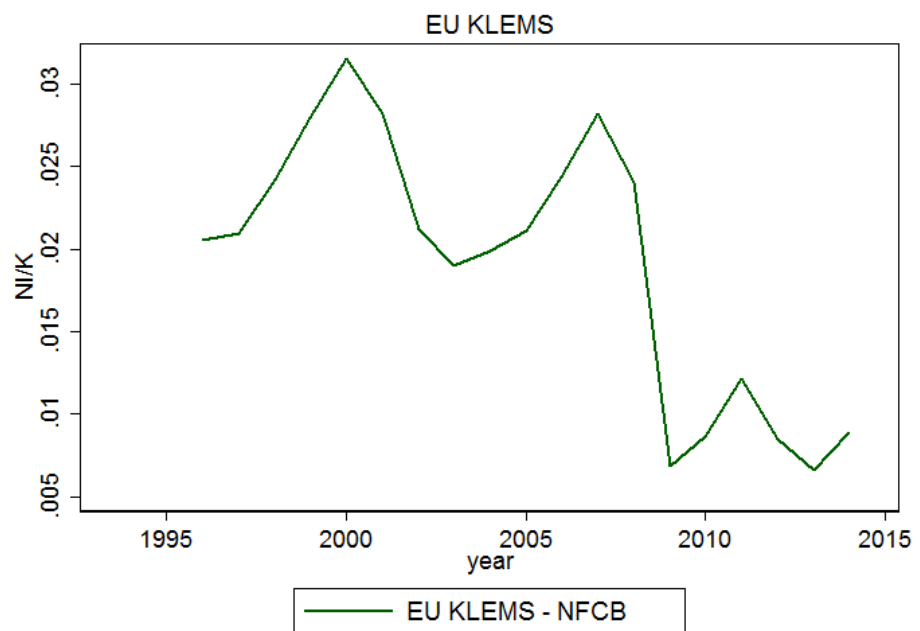
An Investment Gap in Advanced Economies? If so, Why?

Robin Döttling, Germán Gutiérrez
and Thomas Philippon

ECGBF, Sintra, June 2017

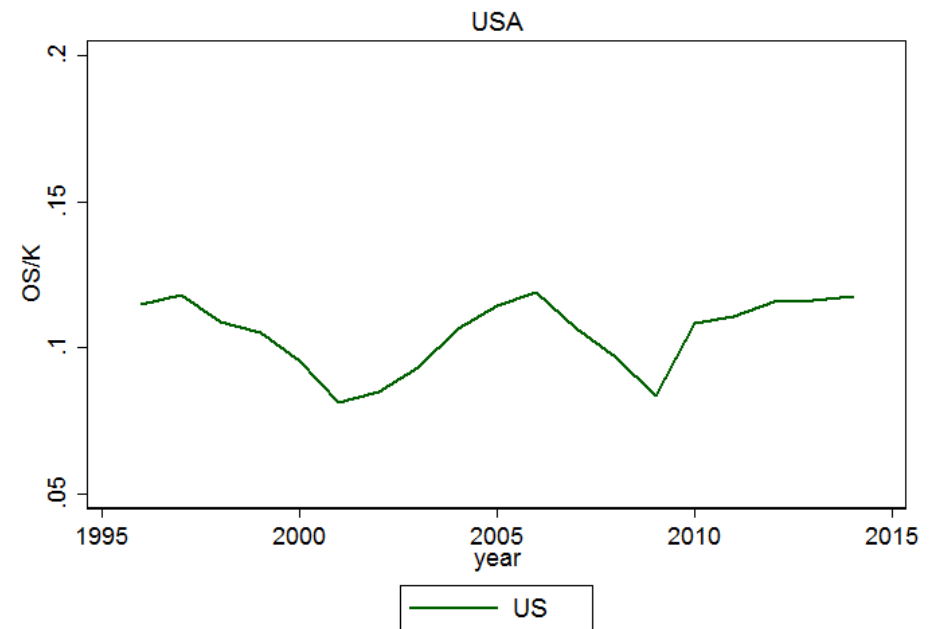
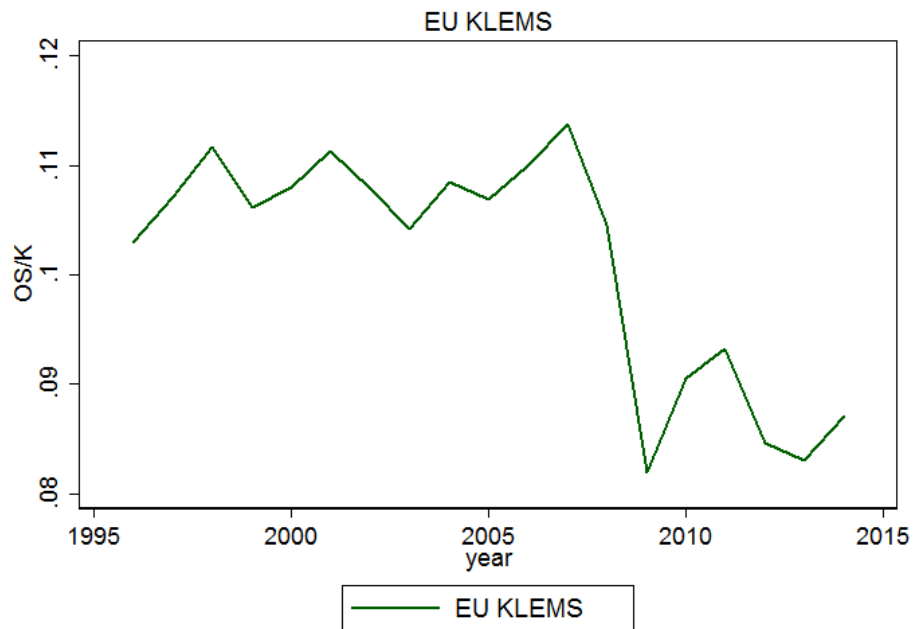
Fact #1: I/K Low in the US and Europe

Net Investment Rate (NFC)



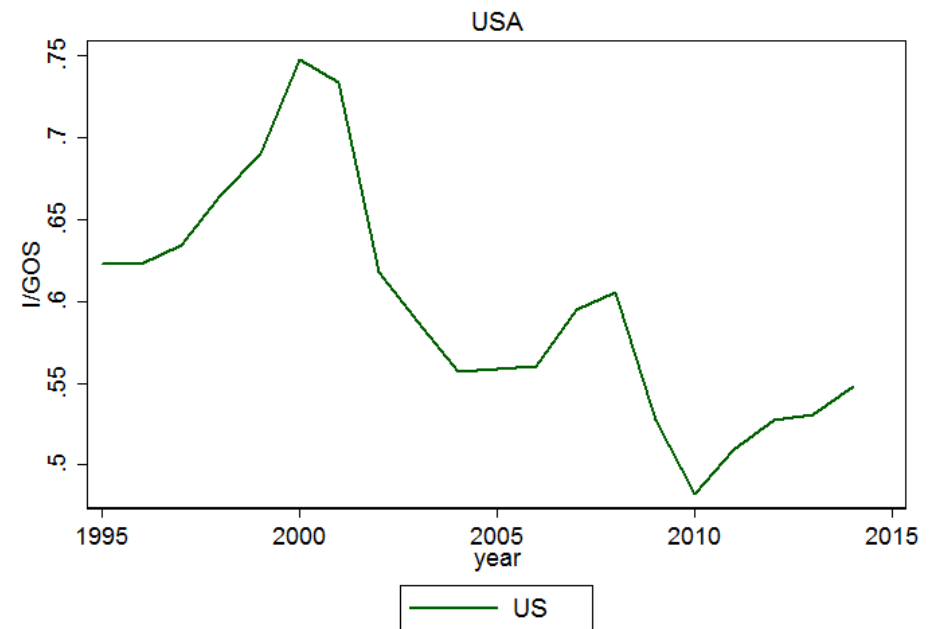
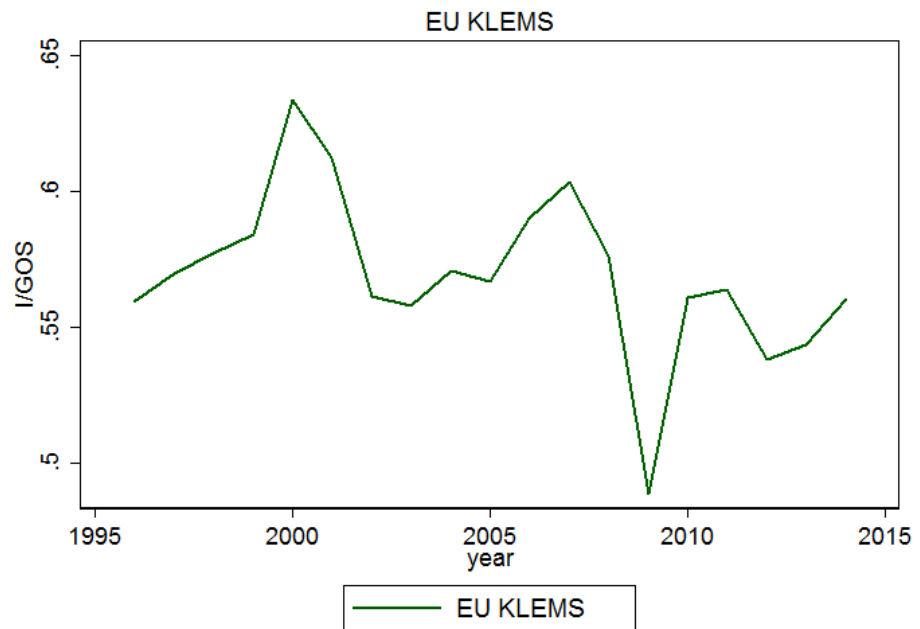
Fact #2: Profits High in the US, Low in Europe

Operating Surplus / Capital (NFC)



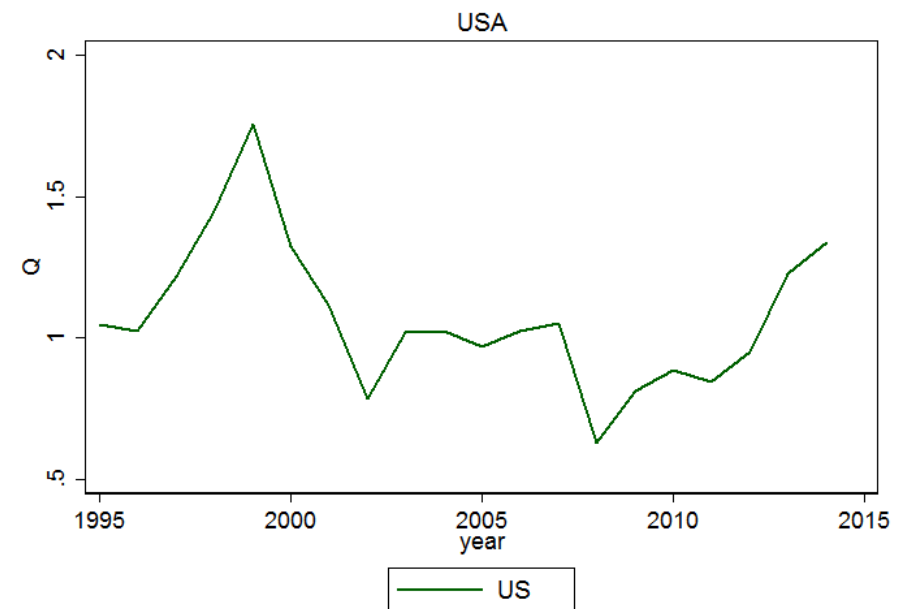
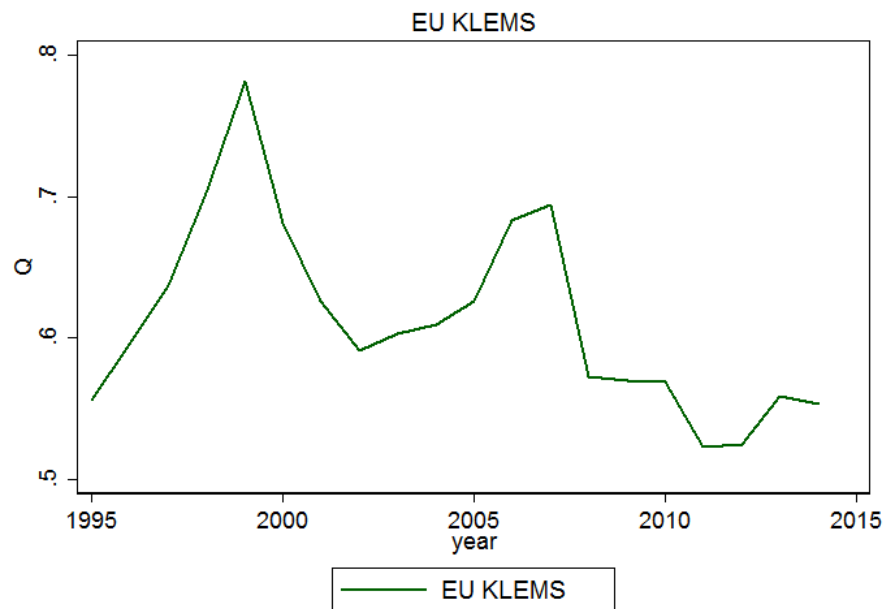
Fact #2': I/GOS is low in US and stable in Europe

Investment Relative to Gross Operating Surplus (NFC)



Fact #3: Q High in the US, Low in Europe

Tobin's Q (NFC)



Two Classes of Theories

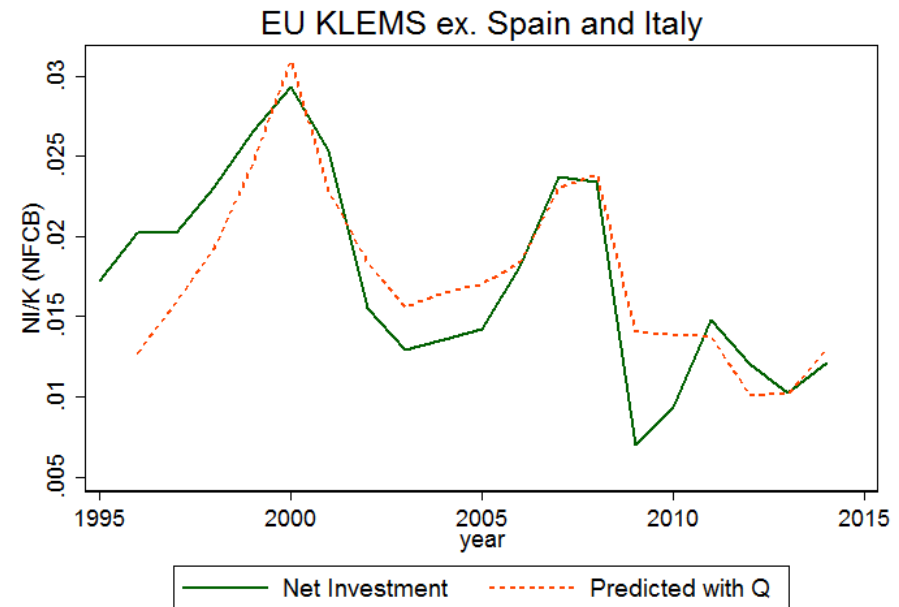
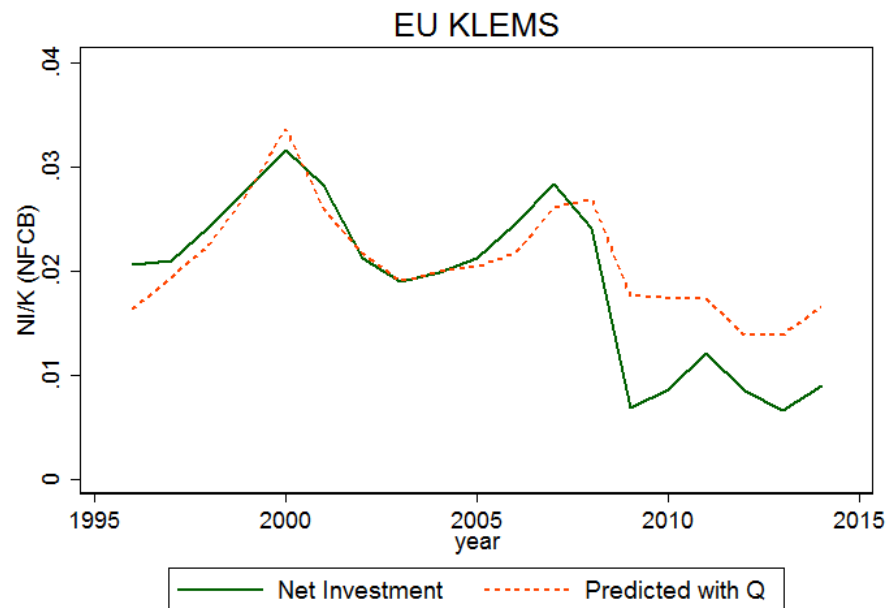
- Low I/K because low Q
 - spreads & risk premia, weak aggregate demand, low expected growth, etc.
- Low I/K despite high Q
 - Financial frictions, intangible (Alexander & Eberly, 2016), competition (regulatory or technological barriers)

Two Classes of Theories

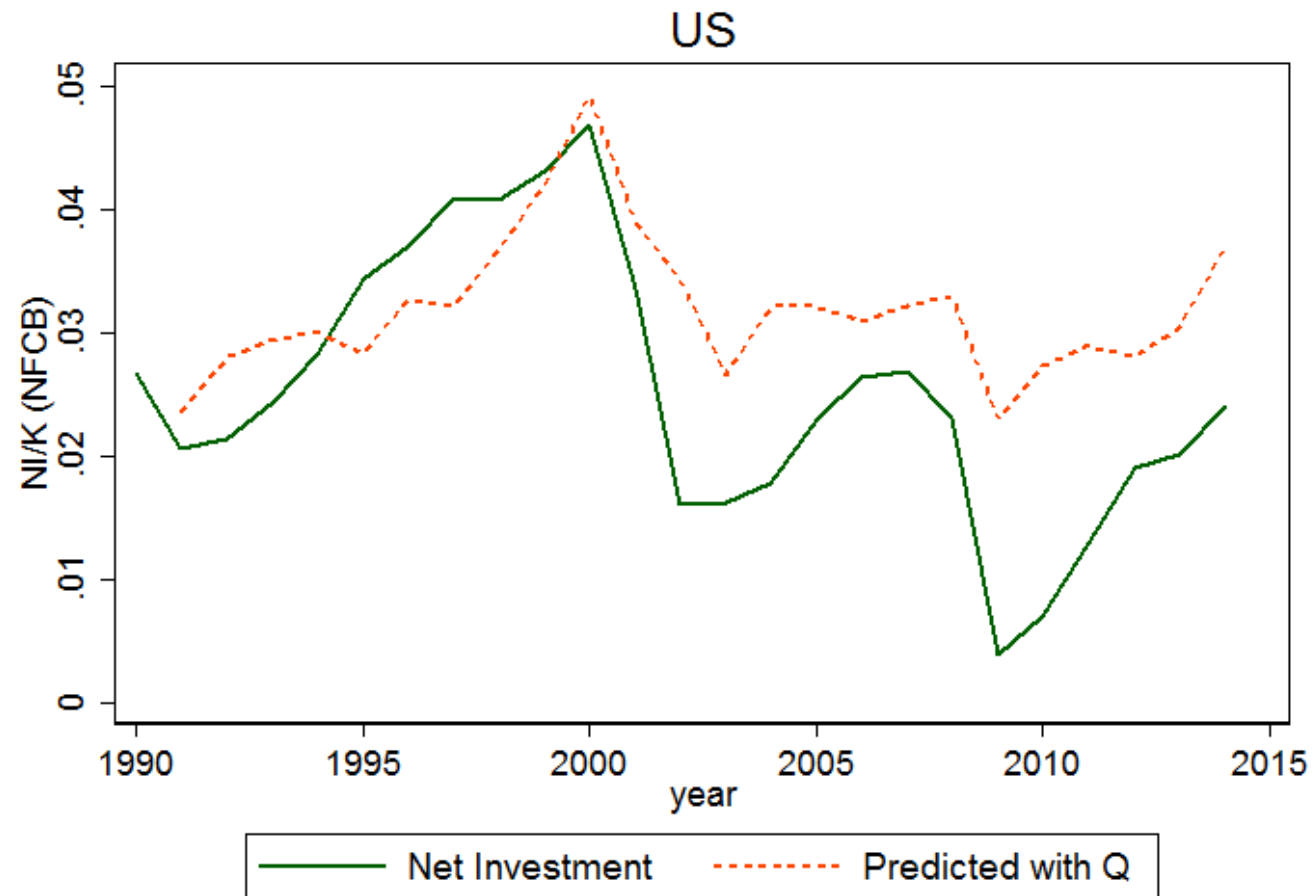
- Low I/K because low Q: **EU**
 - spreads & risk premia, weak aggregate demand, low expected growth, etc.
- Low I/K despite high Q: **US**
 - Financial frictions, intangible (Alexander & Eberly, 2016), competition (regulatory or technological barriers)

Investment on-par with Q in (most of) Europe

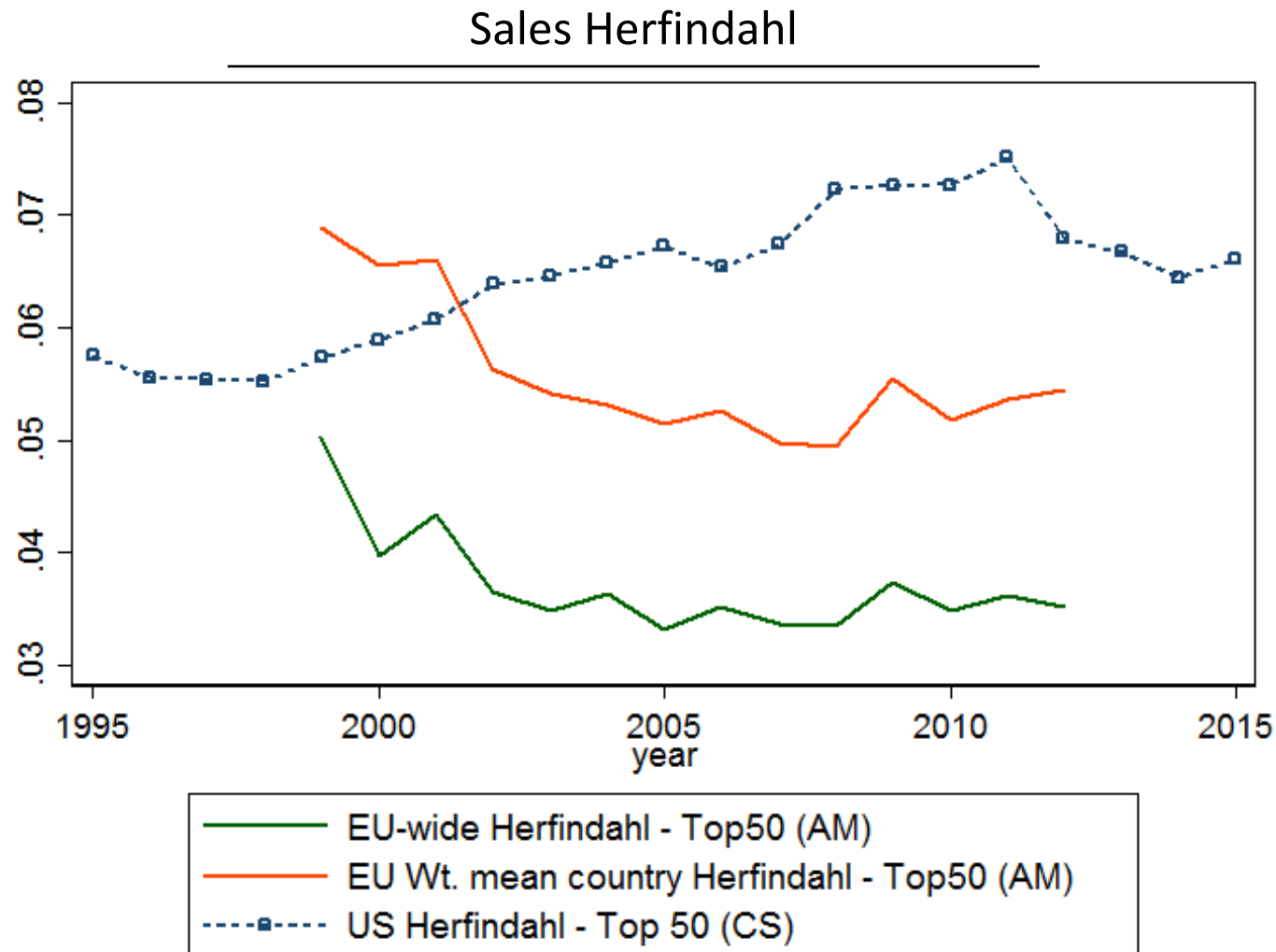
Actual and Predicted Net Investment Rate



By Contrast, Investment Below Q in US



Fact #4: Concentration is Rising in the US and Falling in Europe



Data

- Focus on Eurozone countries in KLEMS
 - Austria, Belgium, Germany, Spain, Finland, France, Italy, Netherlands
 - Country-industry: OECD STAN and EU KLEMS
 - Firm: Compustat Global and AMADEUS/ORBIS
 - **Sebnem Kalemli-Ozcan and Carolina Villegas-Sanchez**
- Caveat: heterogeneous accounting standards
 - Imperfect comparability Europe vs US
 - Differences across European countries (earlier in the sample)

Country-Industry: Herfindahl

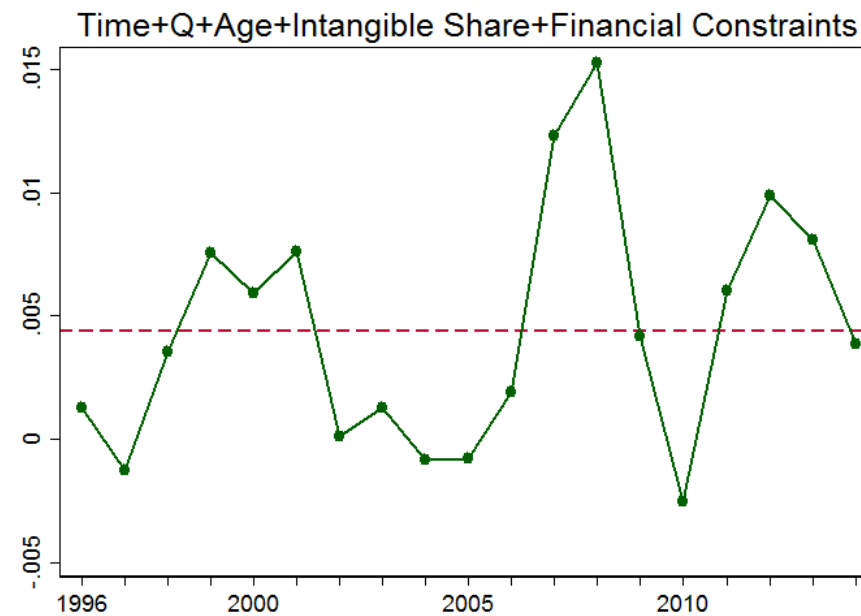
	All Fixed assets			
	(1)	(2)	(3)	(4)
Time period	1995-2014	1999-2012	1995-2014	1999-2012
Data source	STAN	STAN	STAN	STAN
Median $Q_{j,t-1}$ (CS)	0.020**	0.017**	0.018**	0.015**
	[7.37]	[4.45]	[6.39]	[3.94]
$Herfindahl_{c,j,t-1}$ (AM)		-0.037**		-0.035**
		[-5.61]		[-5.06]
$Intangible\ inv.\ share_{j,t-1}$ (KL)			-0.121**	-0.119**
			[-3.75]	[-3.24]
Observations	3616	2650	3616	2650
R^2	0.388	0.403	0.394	0.416
Controls for Age, financial constraints	NO	NO	NO	YES
Industry, Country, Year FE	YES	YES	YES	YES

Firm-level: Financial Constraints

Asset type	Log(I/K)	
Log-Q (t-1) (CS)	0.475** [19.86]	0.503** [32.25]
Recession x Log-leverage(t-1) (CS)	-0.044** [-3.90]	
Recession x Maturity(t-1)	0.100* [2.07]	
GIIPS		-0.471** [-5.69]
GIIPS x Log-leverage(t-1)		-0.101** [-2.91]
GIIPS x Maturity(t-1)		0.165+ [1.75]
Industry and Year FE	YES	YES
Firm FE	NO	NO
Observations	25119	55326
R²	0.121	0.121

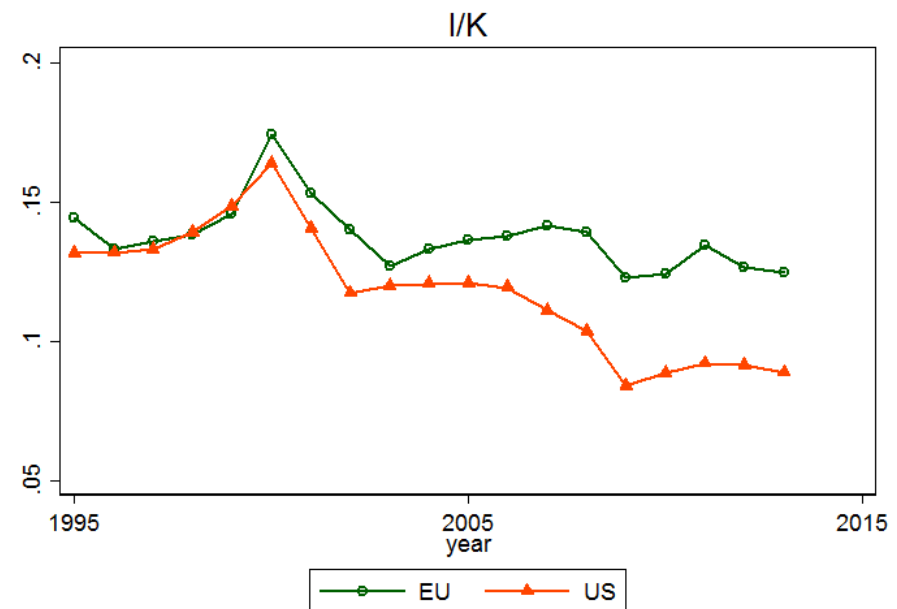
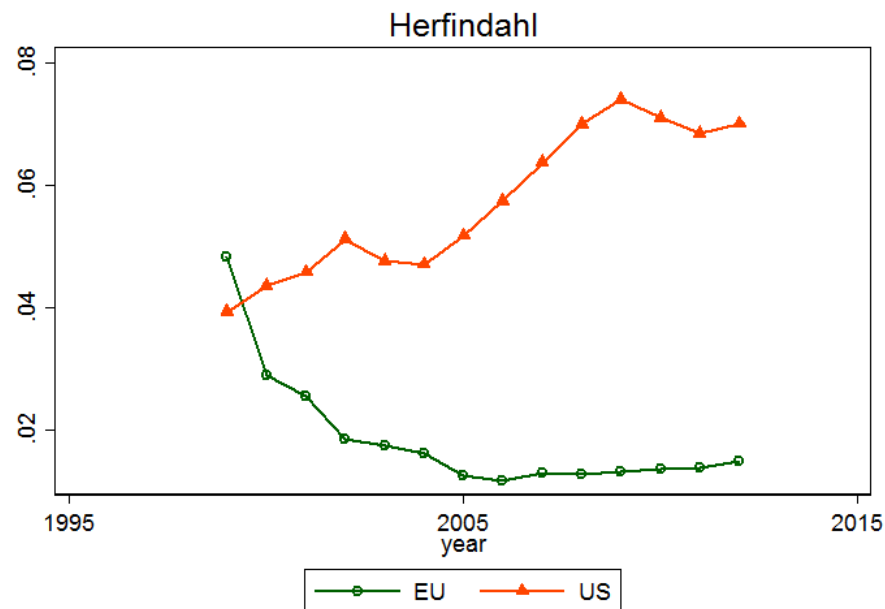
Q and Financial Constraints Explain Low Investment in Europe

Time effects of country-industry regression, by variables included



Difference (Partly) Explained by Increasing US Concentration

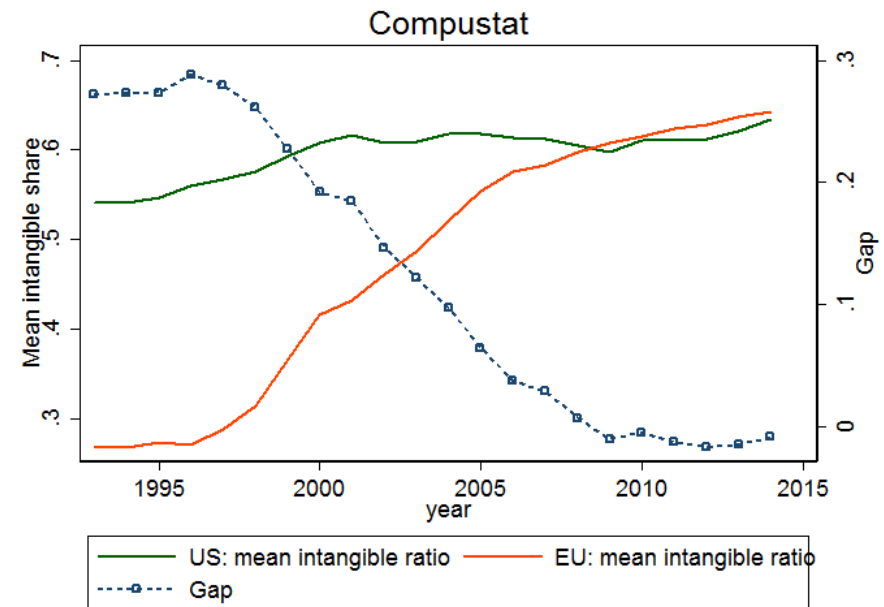
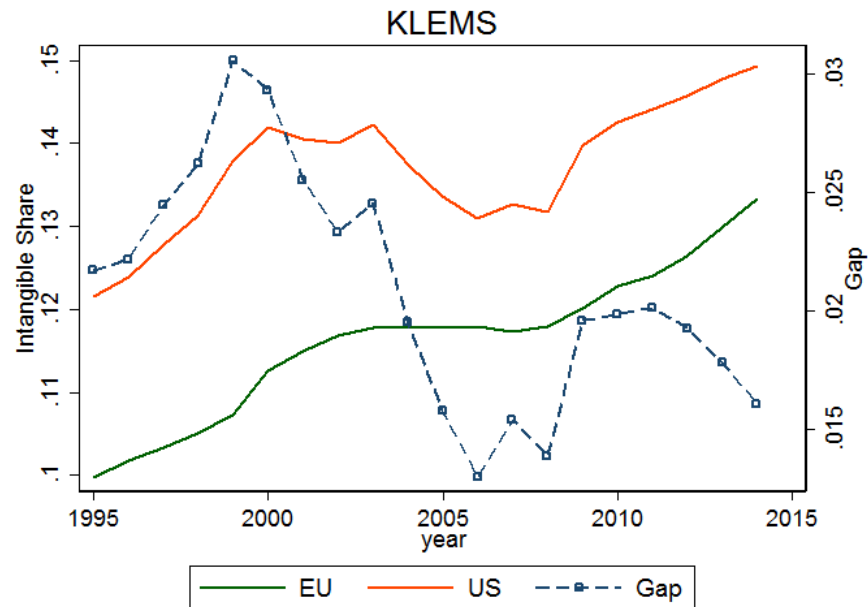
Comparison of concentration and investment at top 5 concentrating industries in US



Trends in Intangible investment

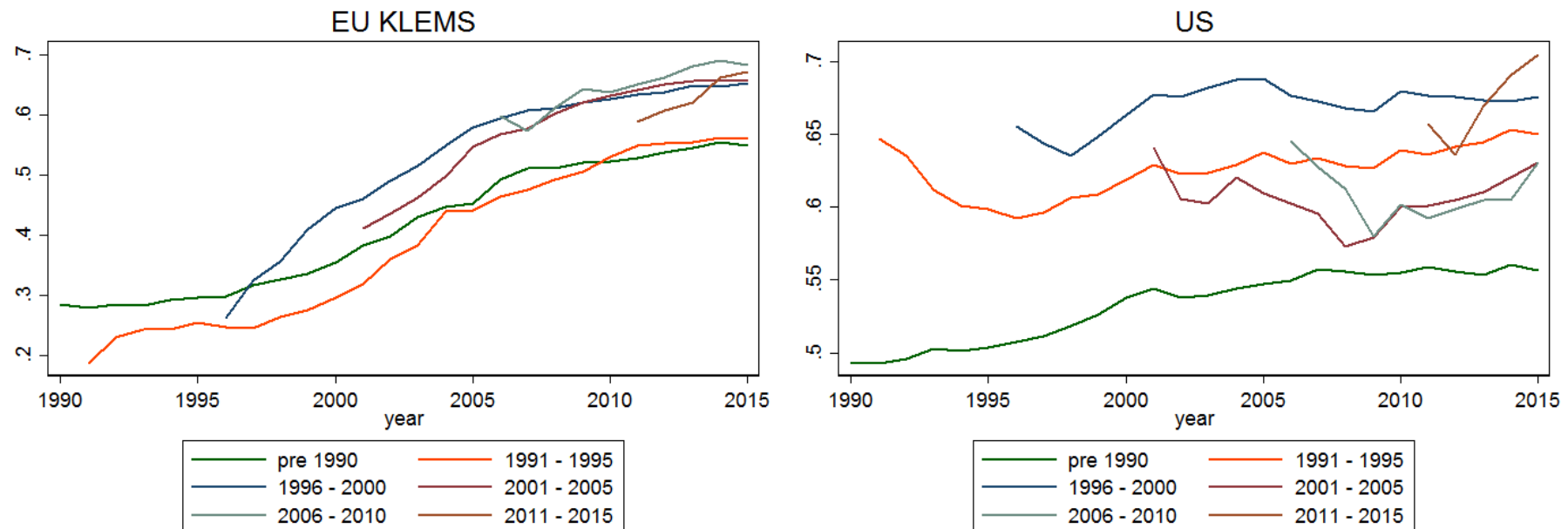
Intangible Investment Catch-Up

Comparison of Intangible Share Based on Capital Stocks



Catch-up in Europe driven by Incumbents (vs. New Entrants in US)

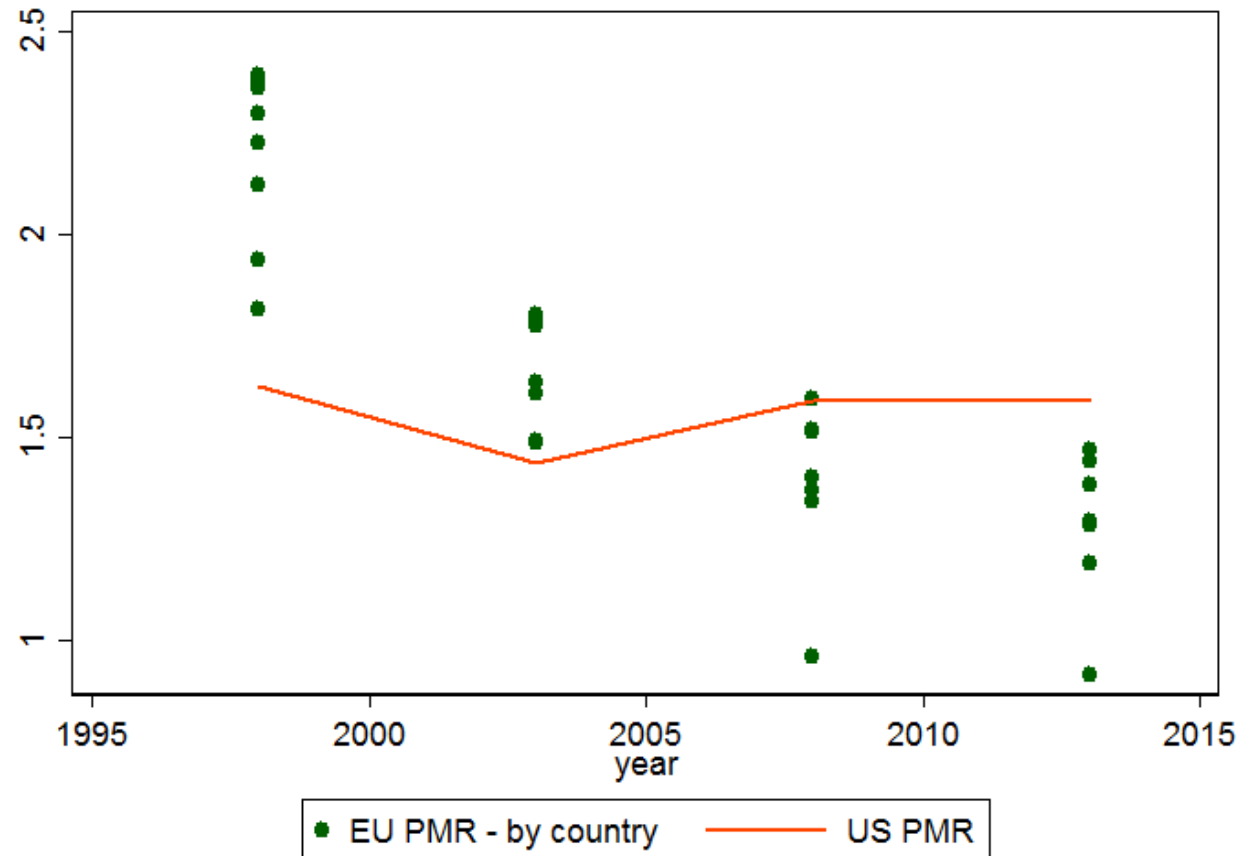
Intangibles Ratio by Cohort (Compustat)



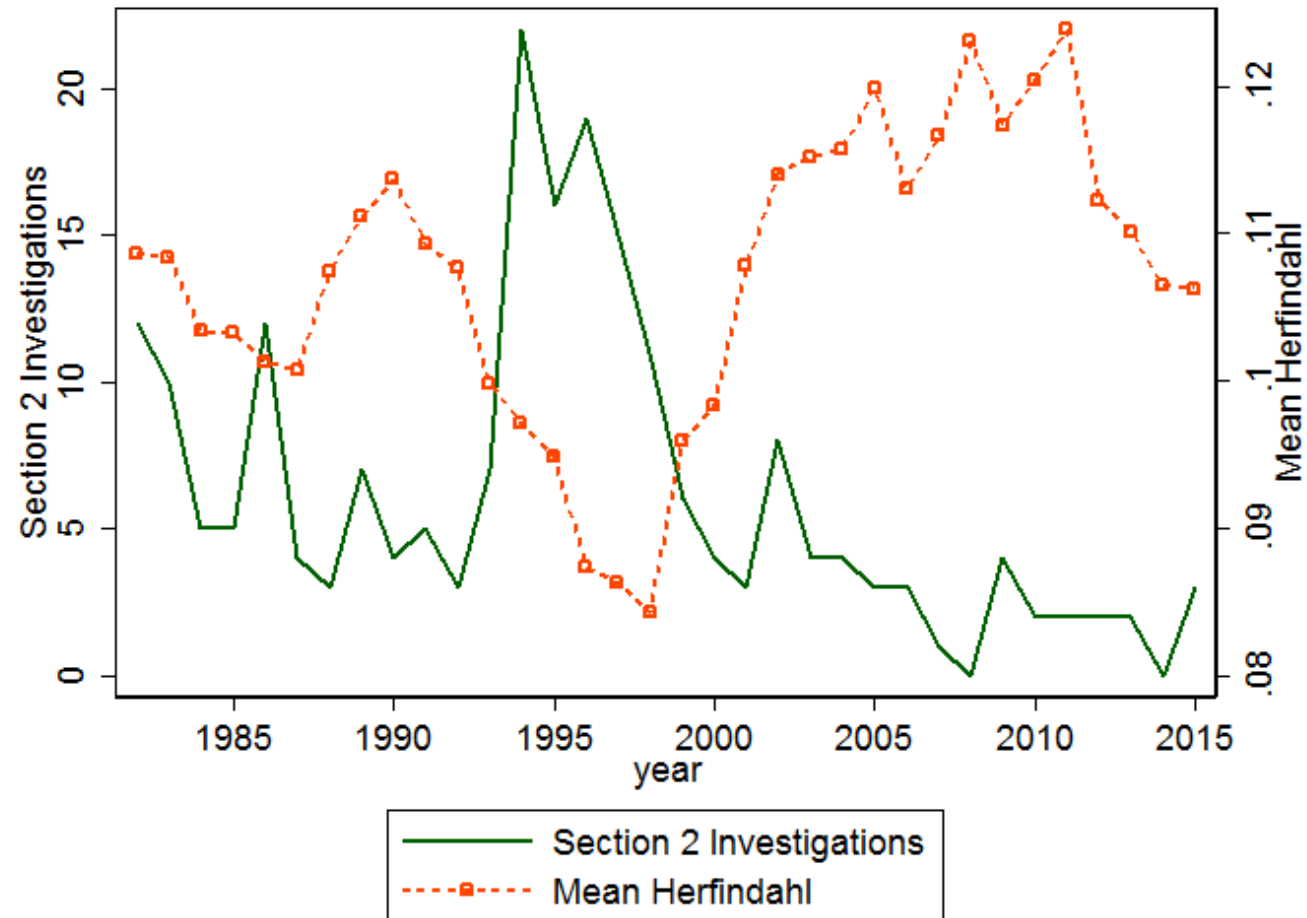
Summary: Weak Investment

- US : structural
 - Weak incentives to invest due to broad decline in competition in most industries
- EU : cyclical
 - Risk premia, weak demand, and credit constraints following Eurozone banking/sovereign crisis
- Intangible : EU catching up via incumbents
- Role for PMR and Antitrust

Contrasting Trends in Regulation: OECD PMR Index



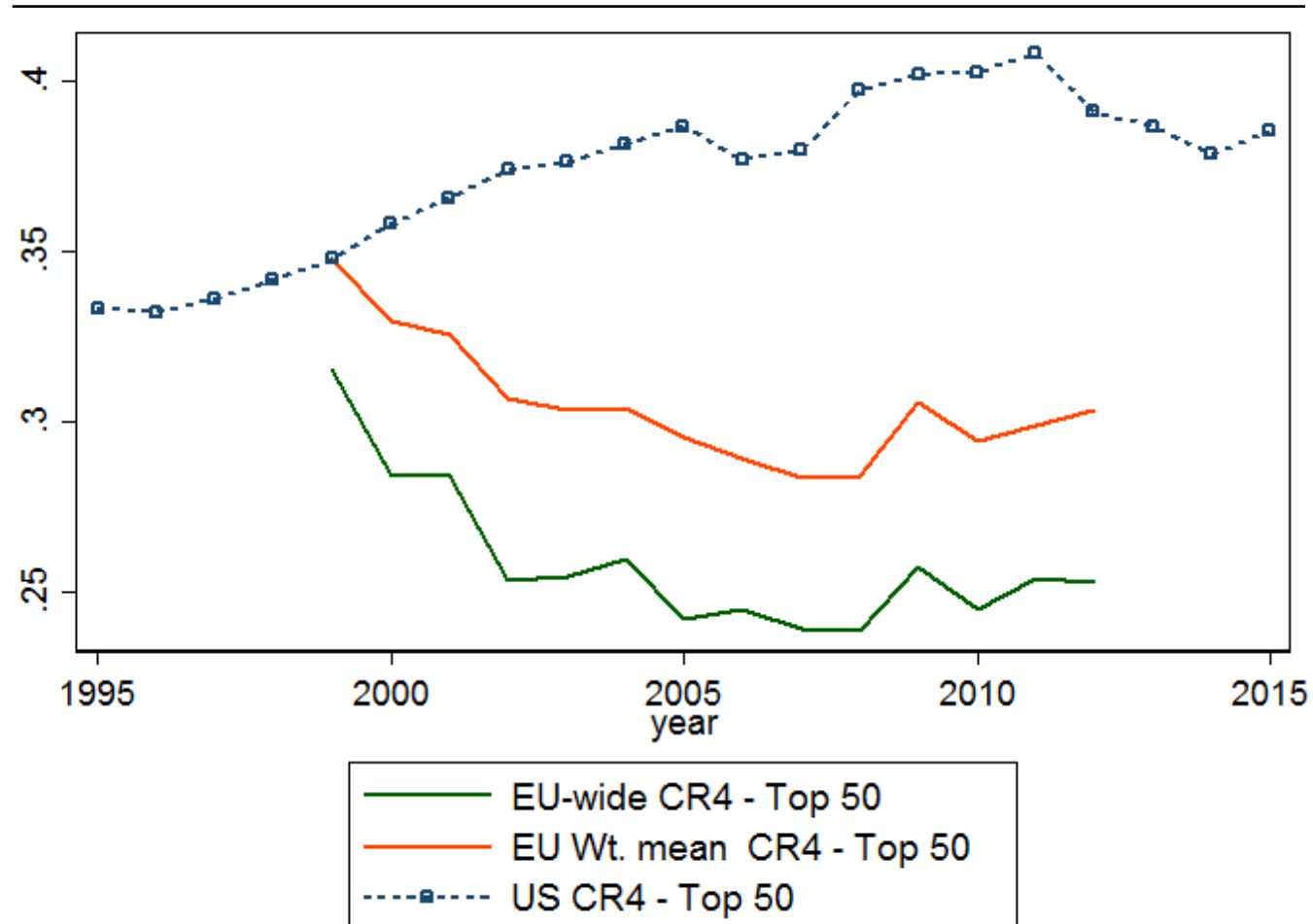
Declining Anti-trust Enforcement in the US ?



Appendix

Fact #4: Concentration is Rising in the US and Falling in Europe

Concentration Ratios (% sales by Top 4 firms)



Data Sources

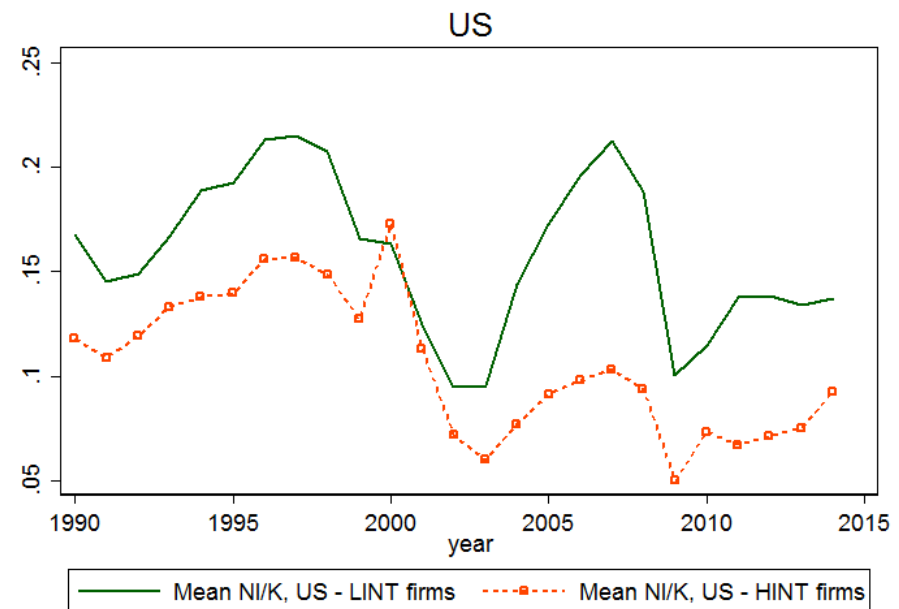
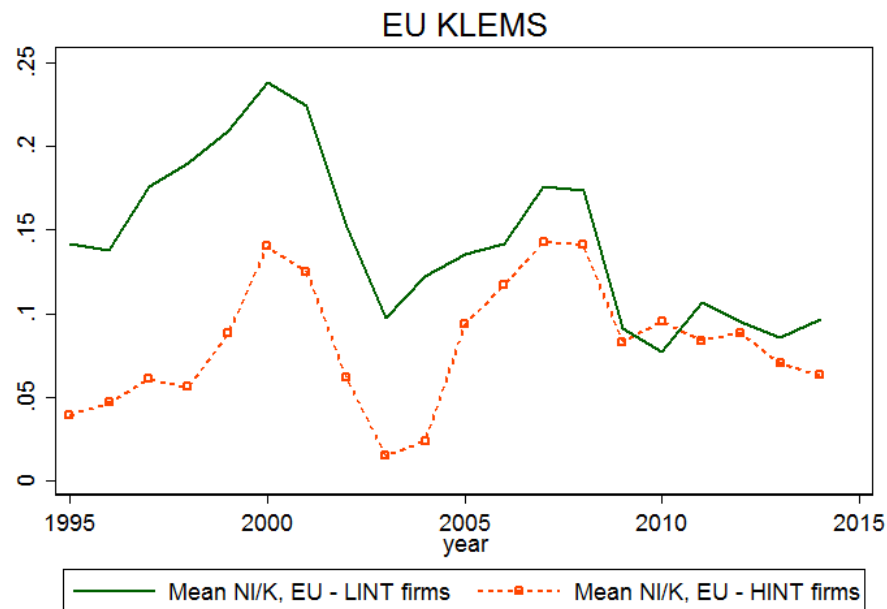
Data sources	Data Fields used	Granularity	Coverage	History	Notes
OECD National Accounts	Output (GOS, OS, etc.) from SNA Table 1 Balance Sheet (Financial and Non Financial Assets) from SNA Tables 710R and 9B Non-Financial Transactions (Capital Formation, etc.) from SNA Table 14	Country and sector	~EU28	1976-2015 for most countries	Supplemented with data from Bank of Spain and Bank of Italy
OECD STAN	Output (GOS, OS), Capital (K) and investment data (I, NI)	Country and industry	~EU28; ISIC Rev. 4 Level 2	1976-2015 for most countries	Supplemented with KLEMS when missing
KLEMS EU	Output (GOS, OS), Capital (K) and investment data (I, NI)	Country, industry and asset type	10 EU countries 35 segments based on ISIC Rev. 4 Level 2 10 asset types	Starts between 1970 and 2000 depending on country. Ends on 2014.	
Compustat Global	Firm-level Financials	Firm-level	All public firms	Good coverage from 1990	Substantial missing data for some fields, even as late as 2005
BvD Amadeus	Firm-level Financials	Firm-level	Public and Private firms	1999-2012 following vintage merging	Substantial missing data for some fields

Firm-level variables

- Firm-level Q computed using market values from Compustat Global's Security Daily
- Tangible investment: CAPX
- Tangible capital: PPENT
- Intangible capital often not on balance sheet (even in IFRS)
 - Follow recent literature, capitalize related expenditures
 - R&D and 20% SG&A: knowledge and organizational capital
- Total capital = tangible + intangible capital

High-Intangible Firms Invest Less

NI/K by firms in top tercile (HINT) and lowest tercile (LINT) of intangibles distribution



Firm-level regressions: Competition and Intangibles

	(1)	(2)	(3)
	NIK	NIK	NIK
Asset type	All	All	All
Log-Q (t-1) (CS)	0.052** [6.86]	0.057** [7.33]	0.058** [7.17]
Industry Herfindahl_{c,j,t-1} (AM)		-0.107* [-1.98]	
Intangible ratio (t-1) (CS)			-0.093** [-6.44]
Log Age (t-1) (CS)	0.021** [2.73]	0.016* [2.03]	0.021** [2.70]
Year FE	YES	YES	YES
Industry FE	YES	YES	YES
Firm FE	NO	NO	NO
Weighted by Capital	YES	YES	YES
Observations	27433	20577	27417
R²	0.099	0.109	0.128