COEN TEULINGS
University of Cambridge

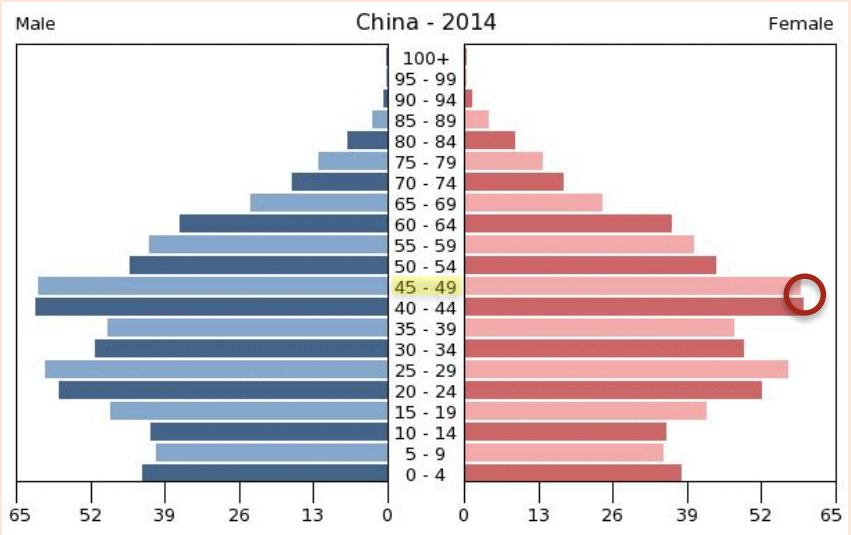
Secular Stagnation: Demography or technology?

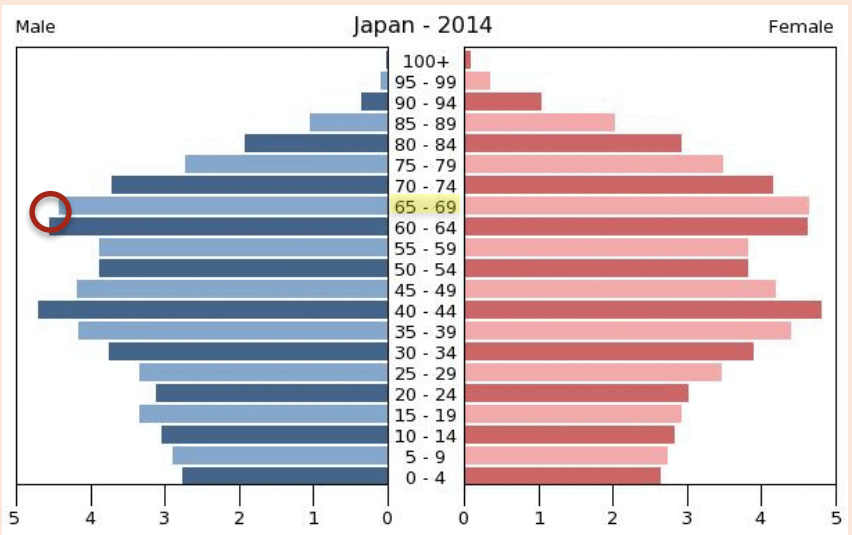
Inet Secular Stagnation conference
New York
December 15, 2017

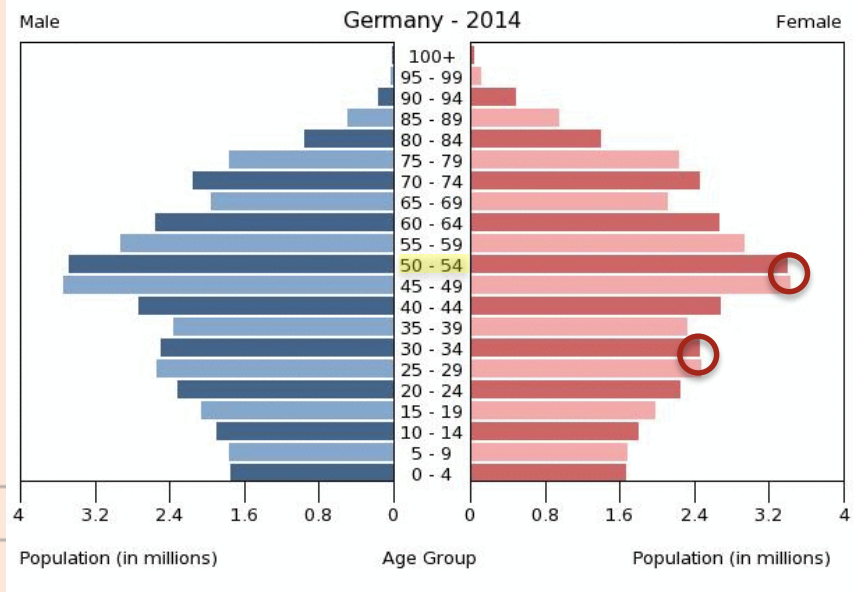
Menu of the day

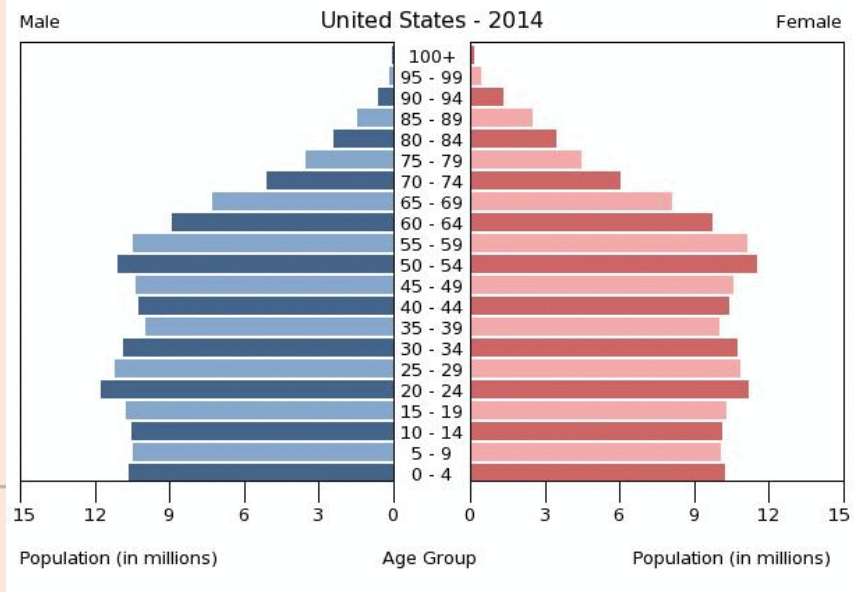
1. Demography: the introduction of the pill
2. Technology: sharply increasing markups
3. …and their implications for wage dispersion

Demography in the four largest economies

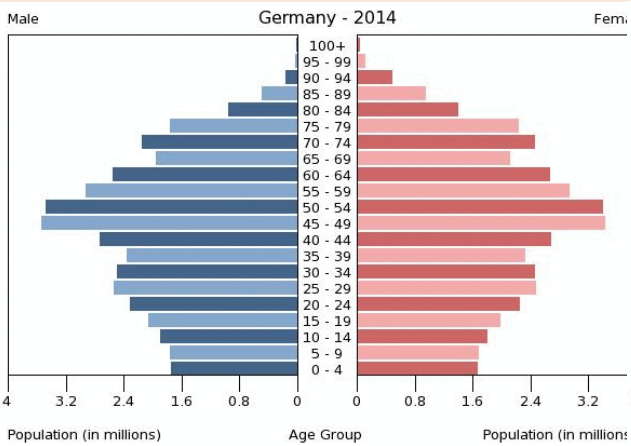


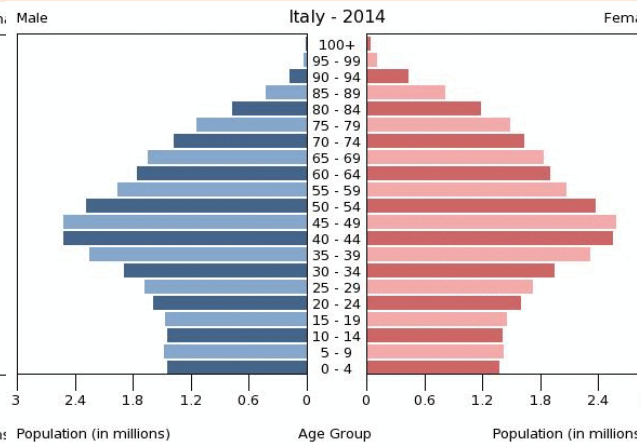


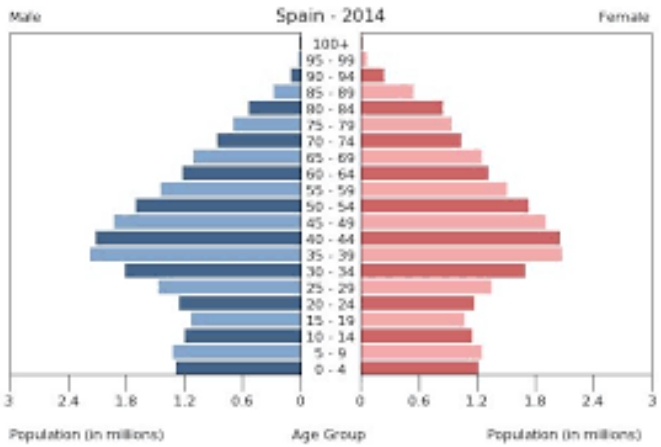


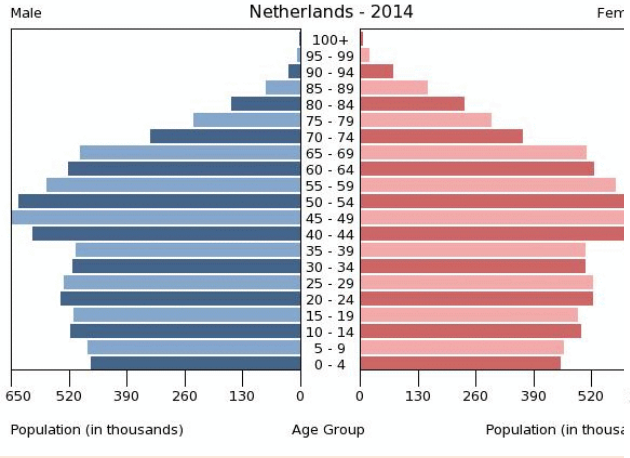


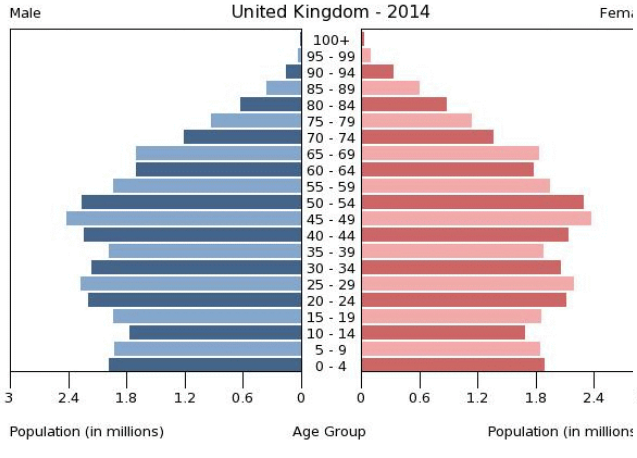
Demography in Europe

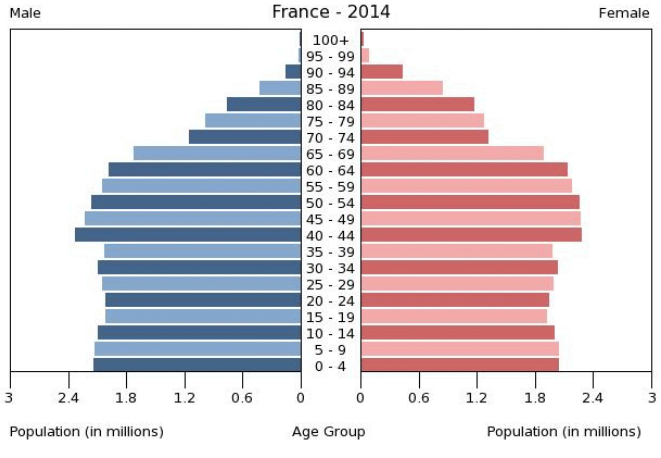




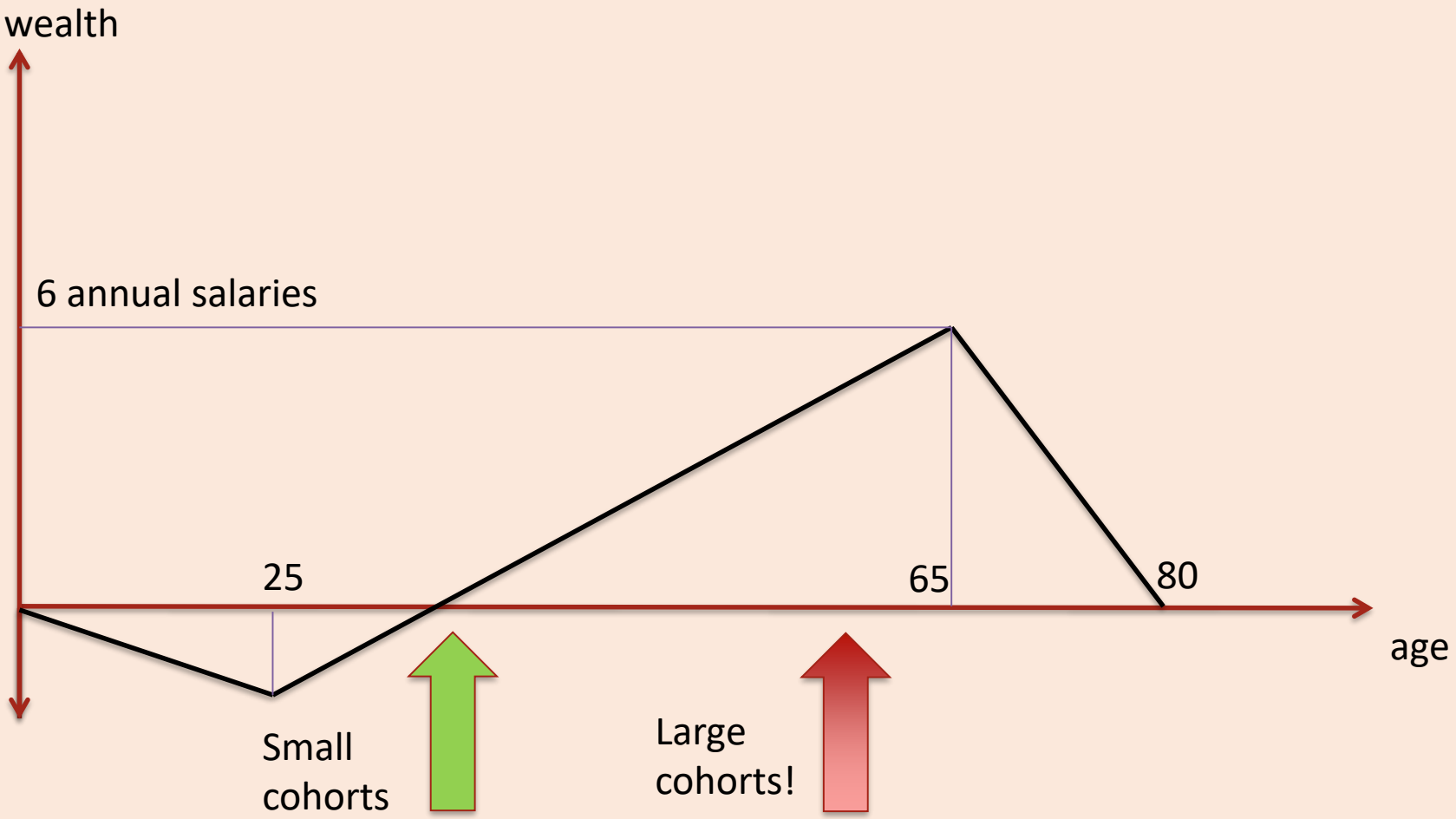




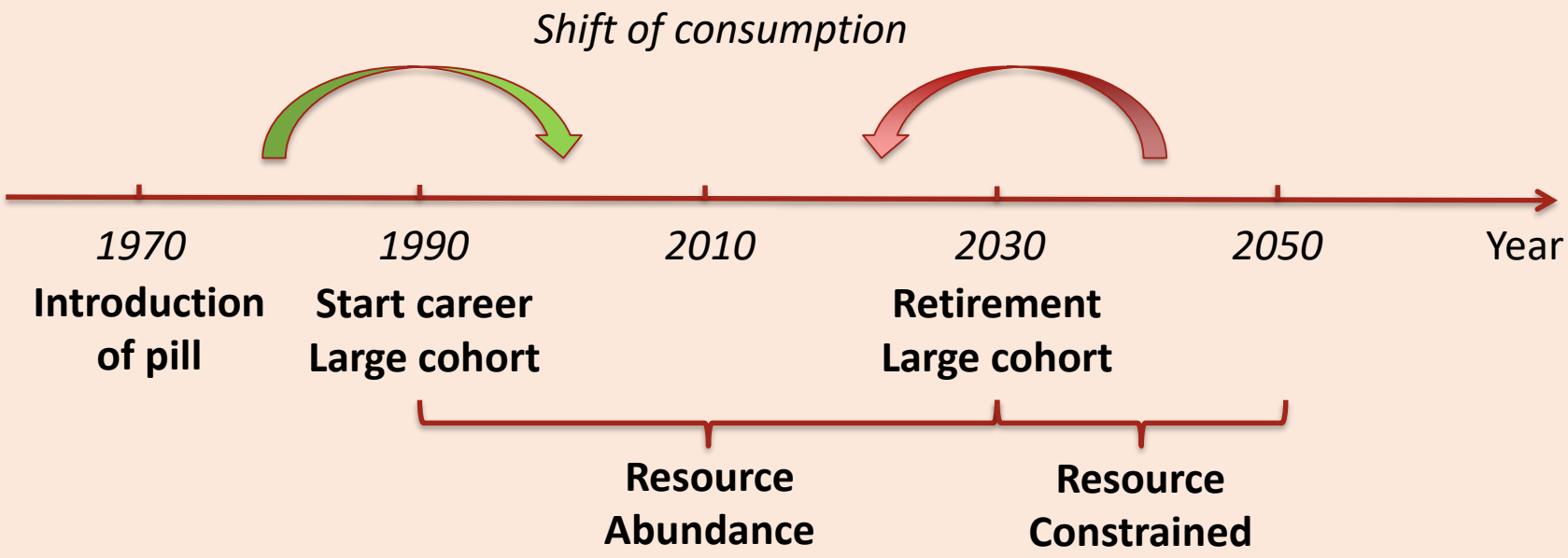




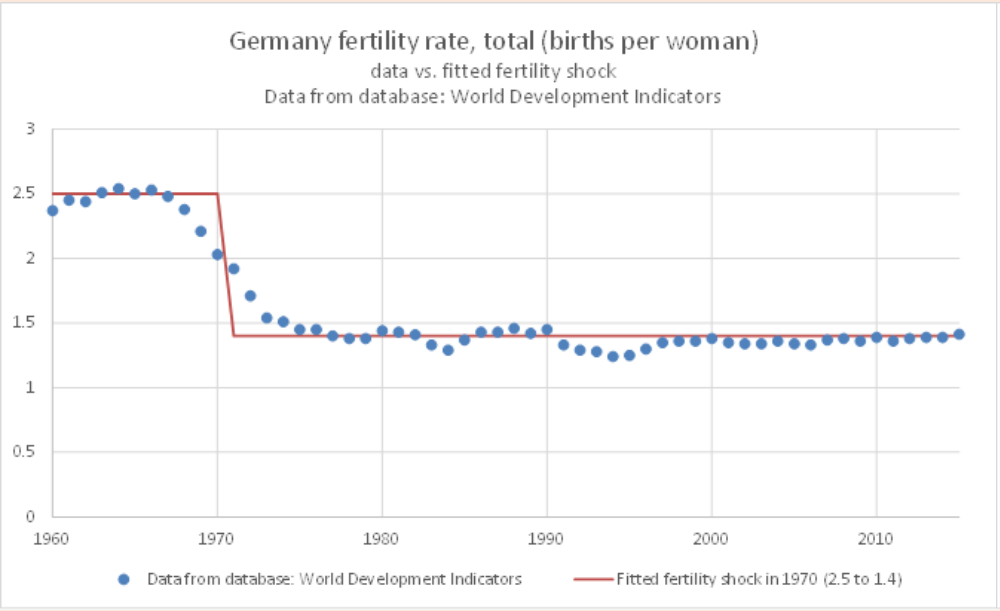
Savings and the life cycle

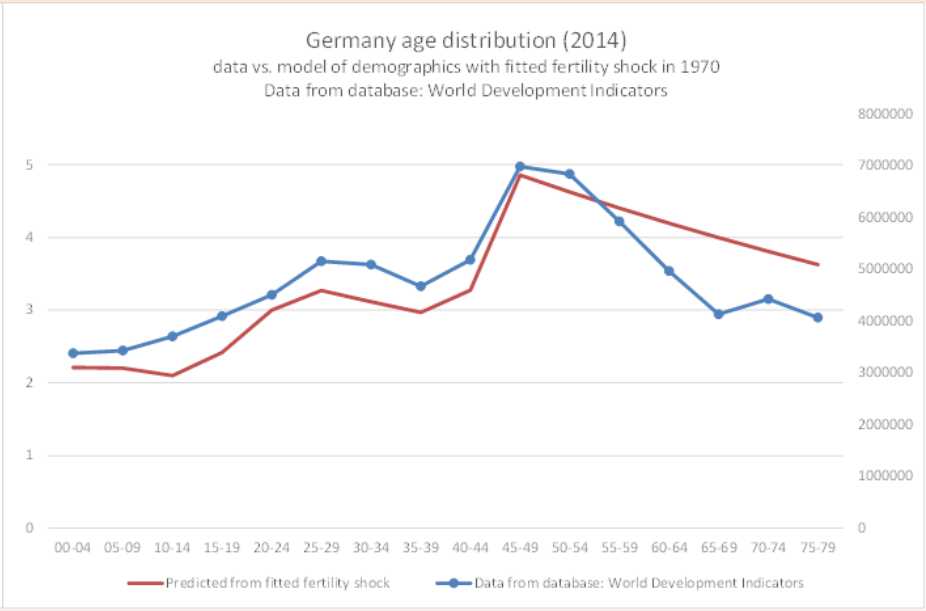


Shifting consumption over time



A simple model of German fertility

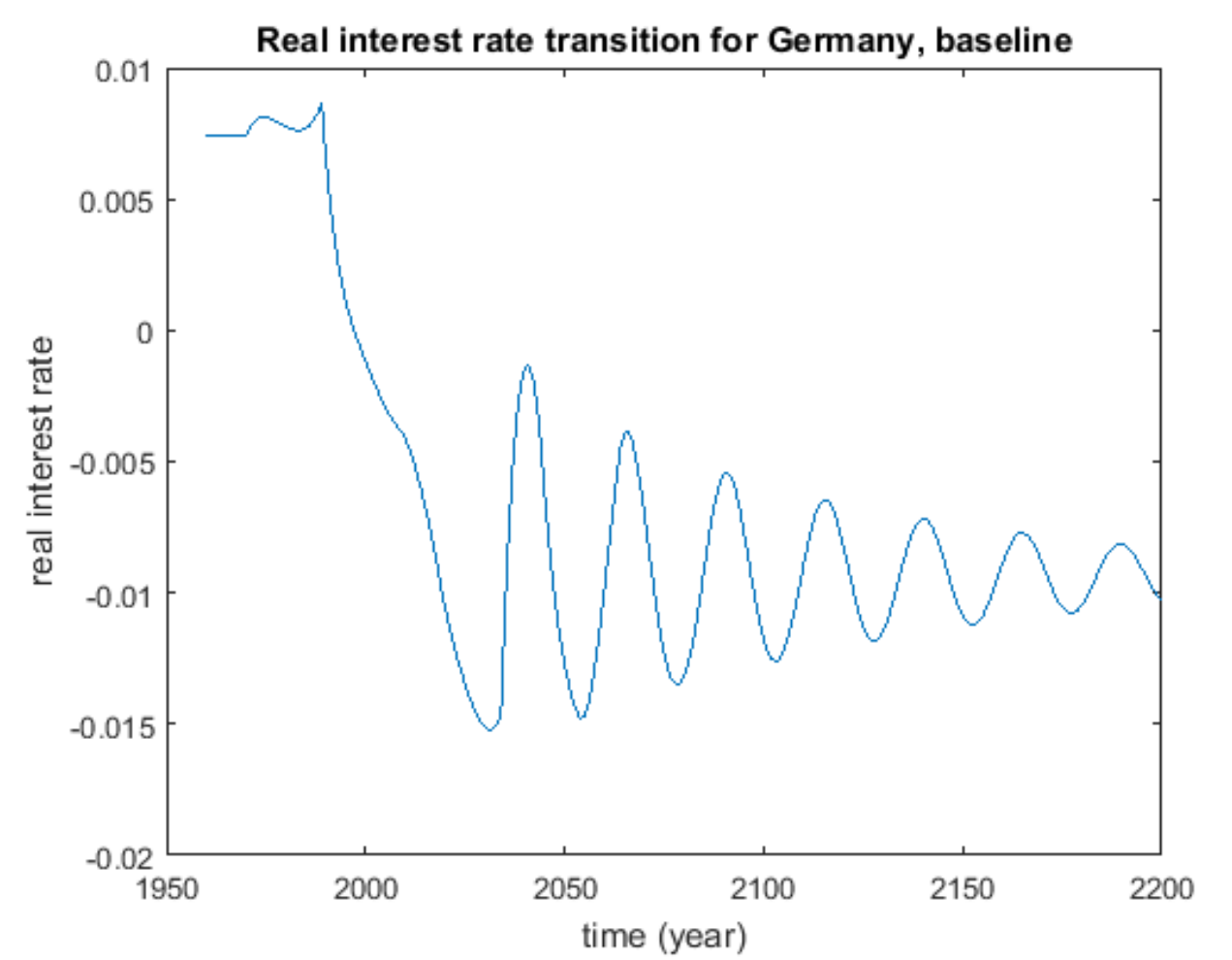




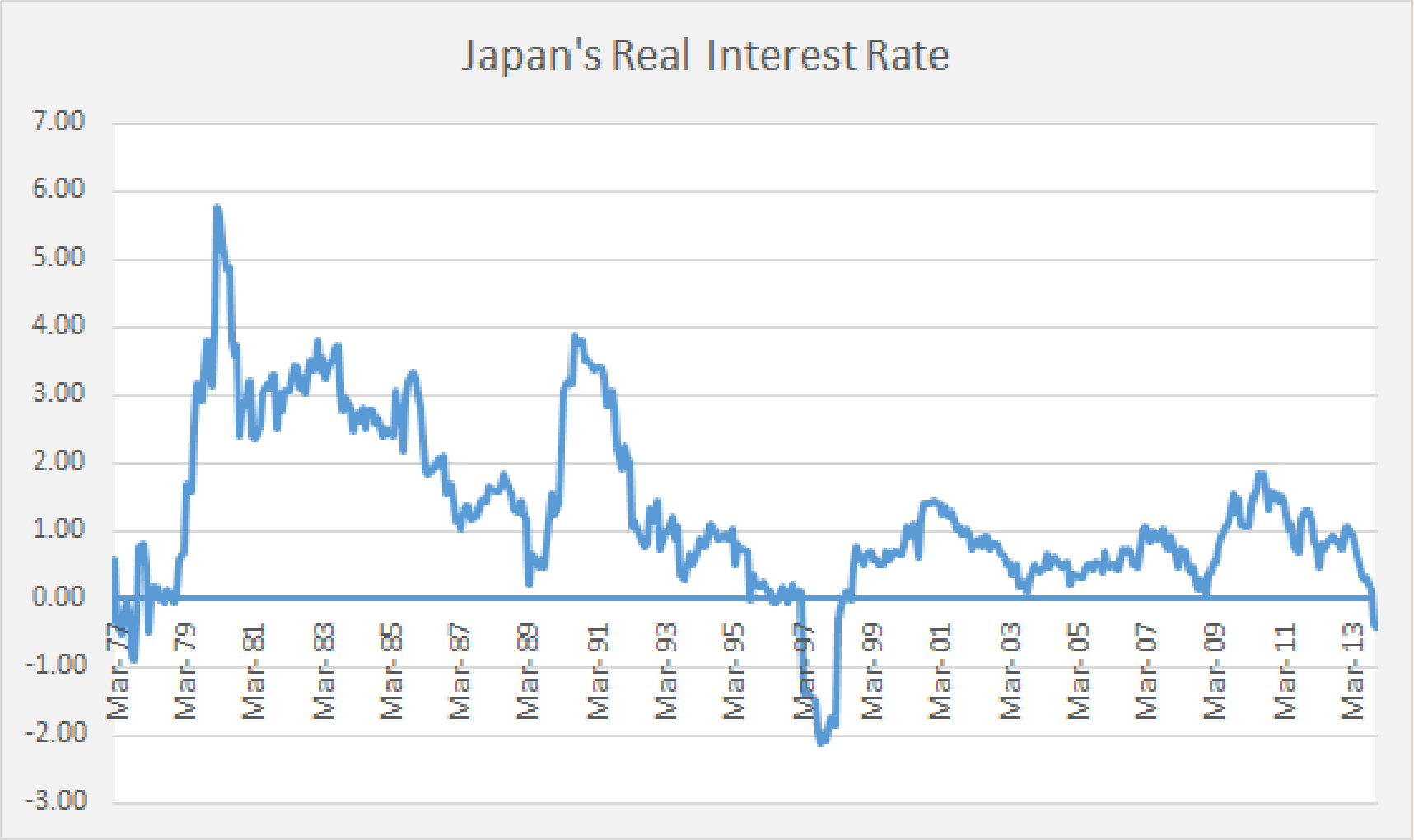
OLG model

Capital-labour substitution	0.40
Intertemporal substitution	0.50
Depreciation rate	0.10
Time discount factor	0.99
Fertile age	20-30
Life expectancy	75
Working age	20-65

The effect on the interest rate



Japan’s real interest rate



http://angrybearblog.com/wp-content/uploads/2014/04/japan-real-int.png

PofB imbalances 2017

Block	PofB in % GDP	GDP ($)	PofB ($bn)
United States	-2.5	17960	-449
China	+1.6	9810	+157
Japan	+3.6	5220	+188
Euro-zone	+3.2	11660	+373
United Kingdom	-3.4	2940	-100

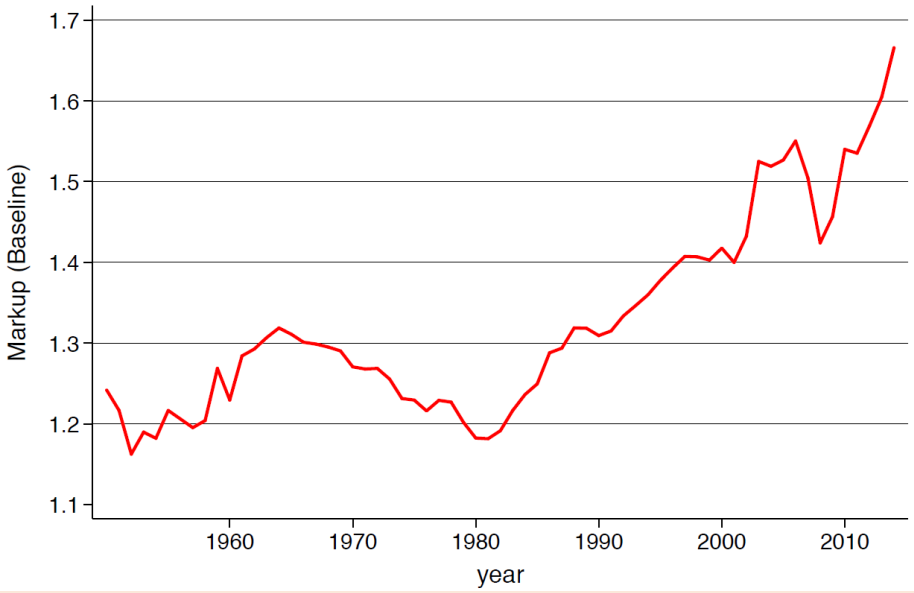
Conclusion demography

1. Transitional demographic disequilibrium
2. Japan leads Europe by 15 years
3. Europe leads China by 5 years
4. Predicts trough in interest rates when largest cohort is between 55 and 65
5. … as is currently the case
6. Low interest can be expected to be persistent

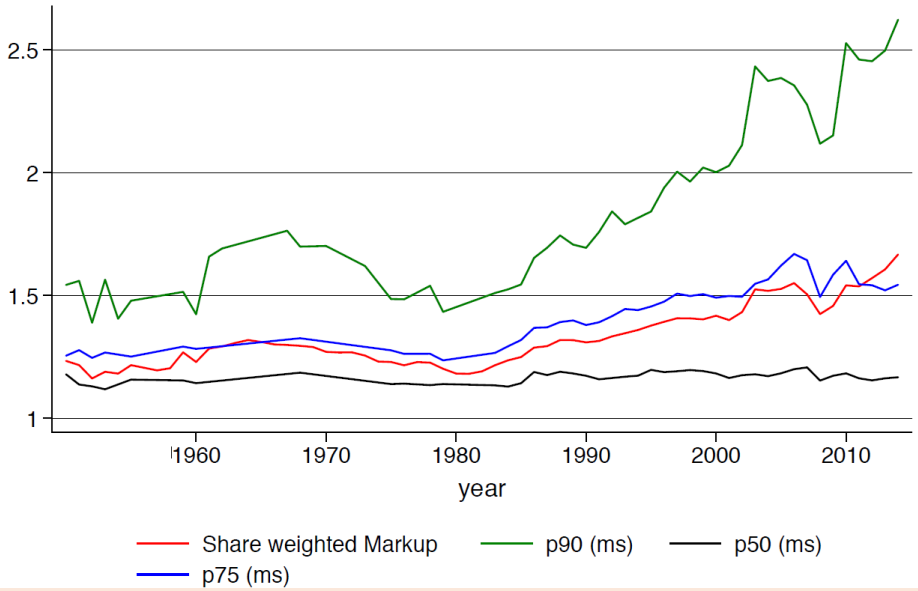
Sharp increase markup over MC

de Loecker & Eeckhout on United States, http://www.janeeckhout.com/wp-content/uploads/RMP.pdf

In levels



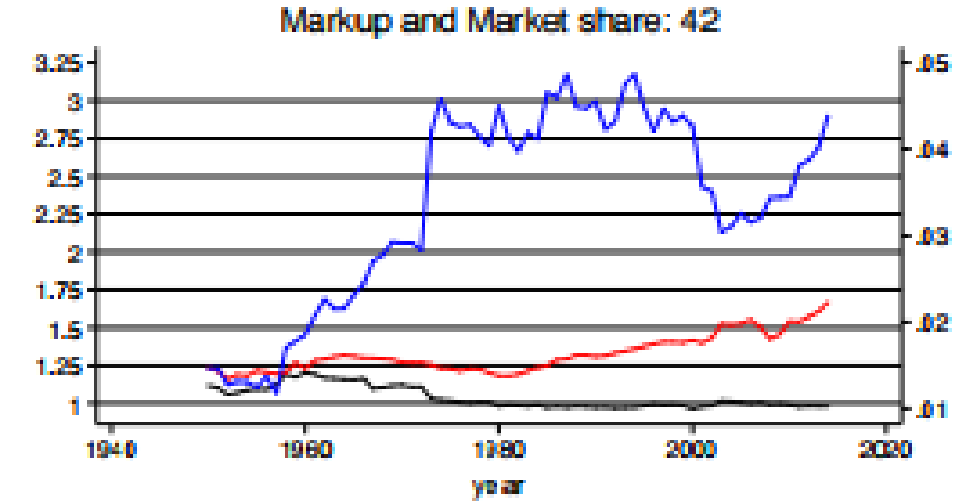
Dispersion

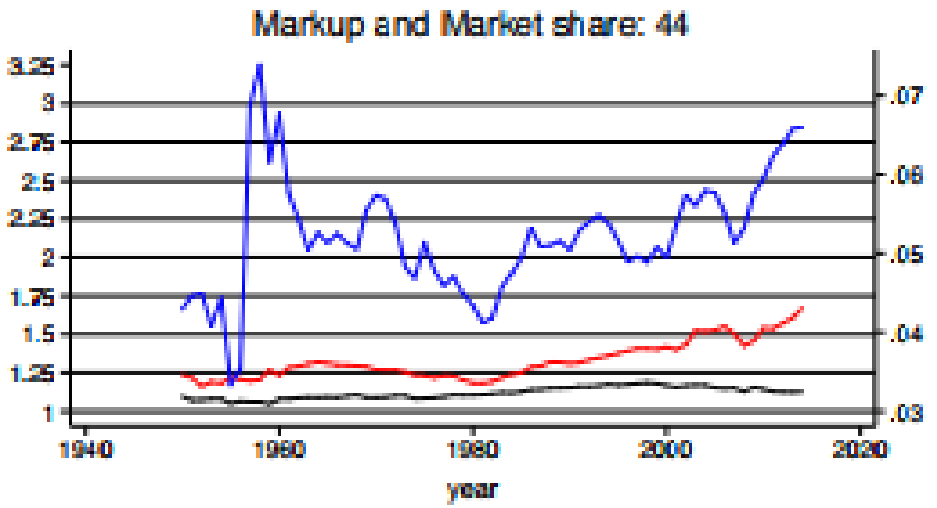


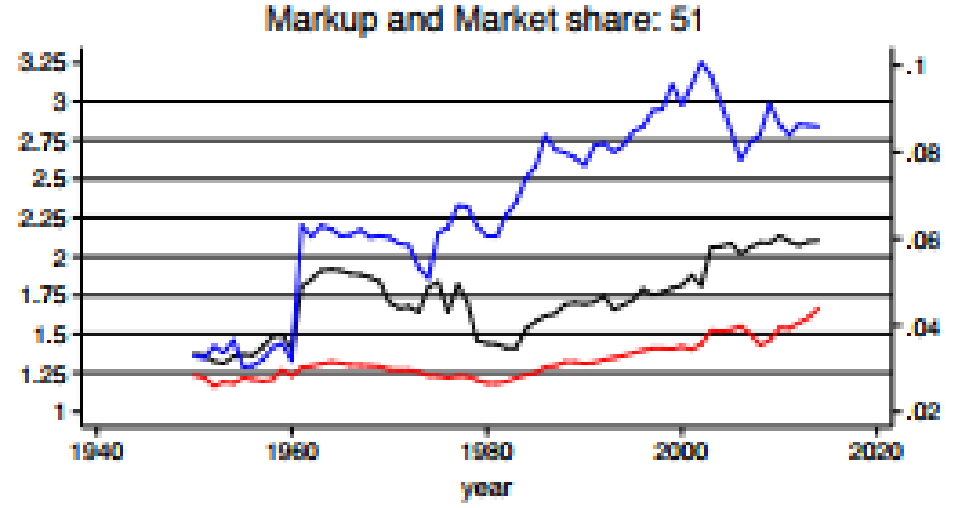
Mainly within industry

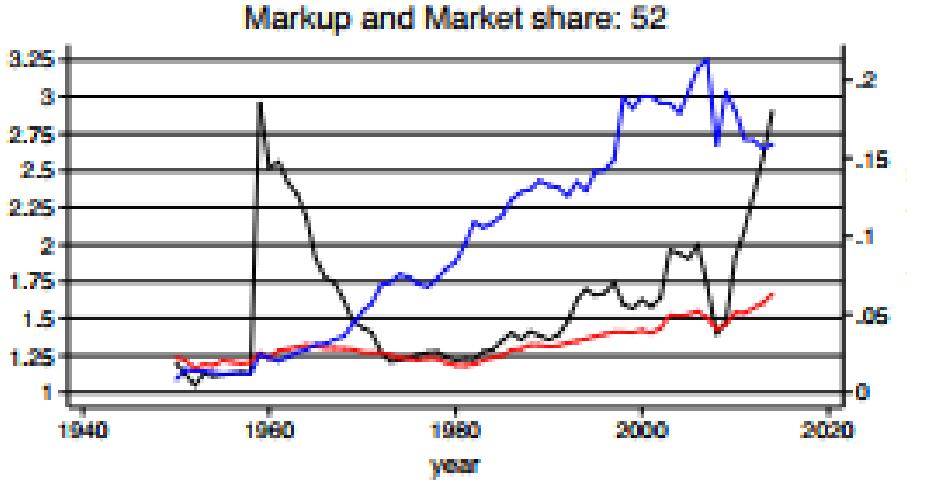
	Markup	Δ Markup	Δ Within	Δ Between
1964	1.319	0.135	0.067	-0.011
1974	1.231	-0.088	-0.084	0.042
1984	1.236	0.004	-0.008	0.025
1994	1.360	0.124	0.126	0.004
2004	1.519	0.159	0.116	0.031
2014	1.667	0.151	0.187	-0.018

Markups by industry





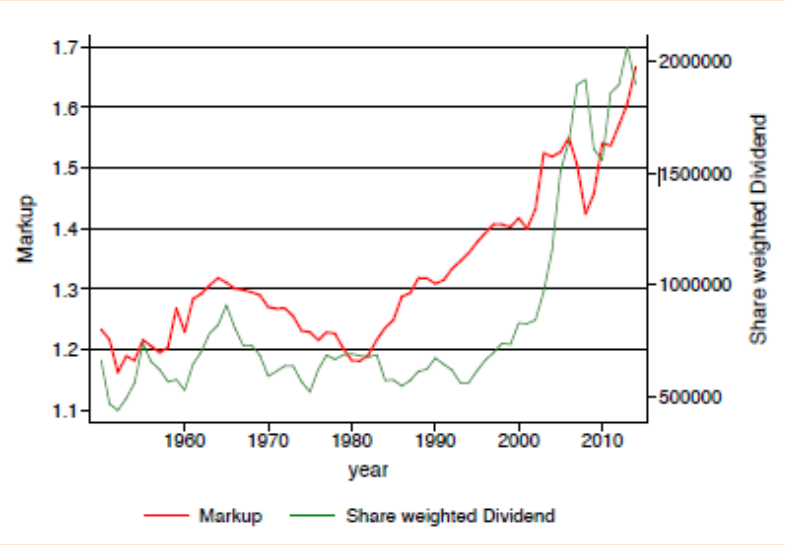


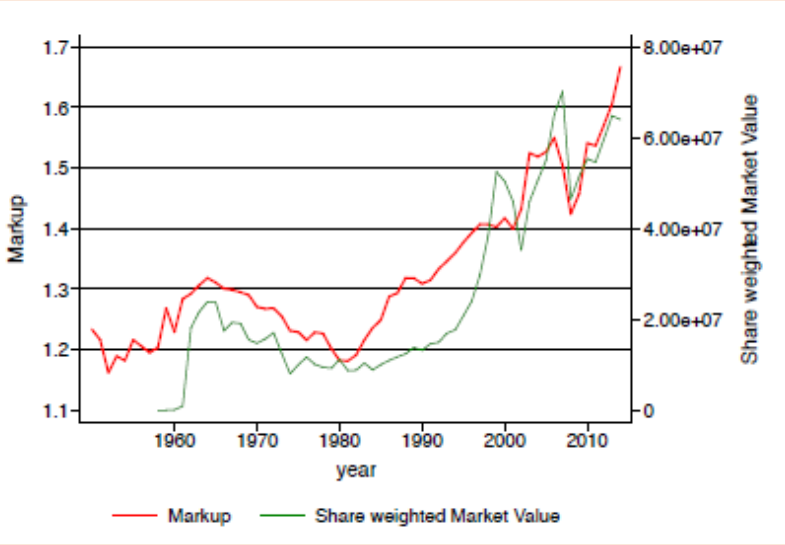


Suggestive evidence: by firm

	Markup μ_i			Sales S_i millions (2010 $)			Empl. L_i thousands		
	1980	1990	2014	1980	1990	2014	1980	1990	2014
Google (Alphabet)			2.71			60,600			53
WalMart	1.17	1.10	1.15	3,702	48,800	444,000	27	328	2,200
Mylan	1.05	1.49	1.87	49.9	136	7,093	0.23	0.51	30
Apple	1.50	1.97	1.49	263	8,324	168,000	1	14	97
General Electric	1.19	1.45	1.71	56,200	86,500	134,000	402	298	305

Not fixed cost go up, but rents!





Puzzle: globalisation increases markups?

- Why decreases low cost of capital its share?
  - Elasticity of substitution is less than one
- Globalization & monopolistic competition
  - Dixit & Stiglitz: more diversification (fixed markup)
  - Baldwin: more competition (lower markup)
  - Melitz: fixed cost of exporting?
- Hence: technology?
  - Network industries
  - Should network be run as public utilities?

Conclusion markups

1. Sharp increase in markups since 1980
2. Mainly in the top of the distribution 90%
3. Across industries, but mainly IT
4. Fall in labour and capital share
5. Increase in profit share
6. Rents? Network industries?
7. Lower elasticity investment for cost of capital

Methodological remark

- Methodology based in cost minimization
- Assume fixed input prices
- Are labour cost independent of profits?
- Models with (on-the-job) search suggest not
  - Search frictions account for 10% of wage dispersion

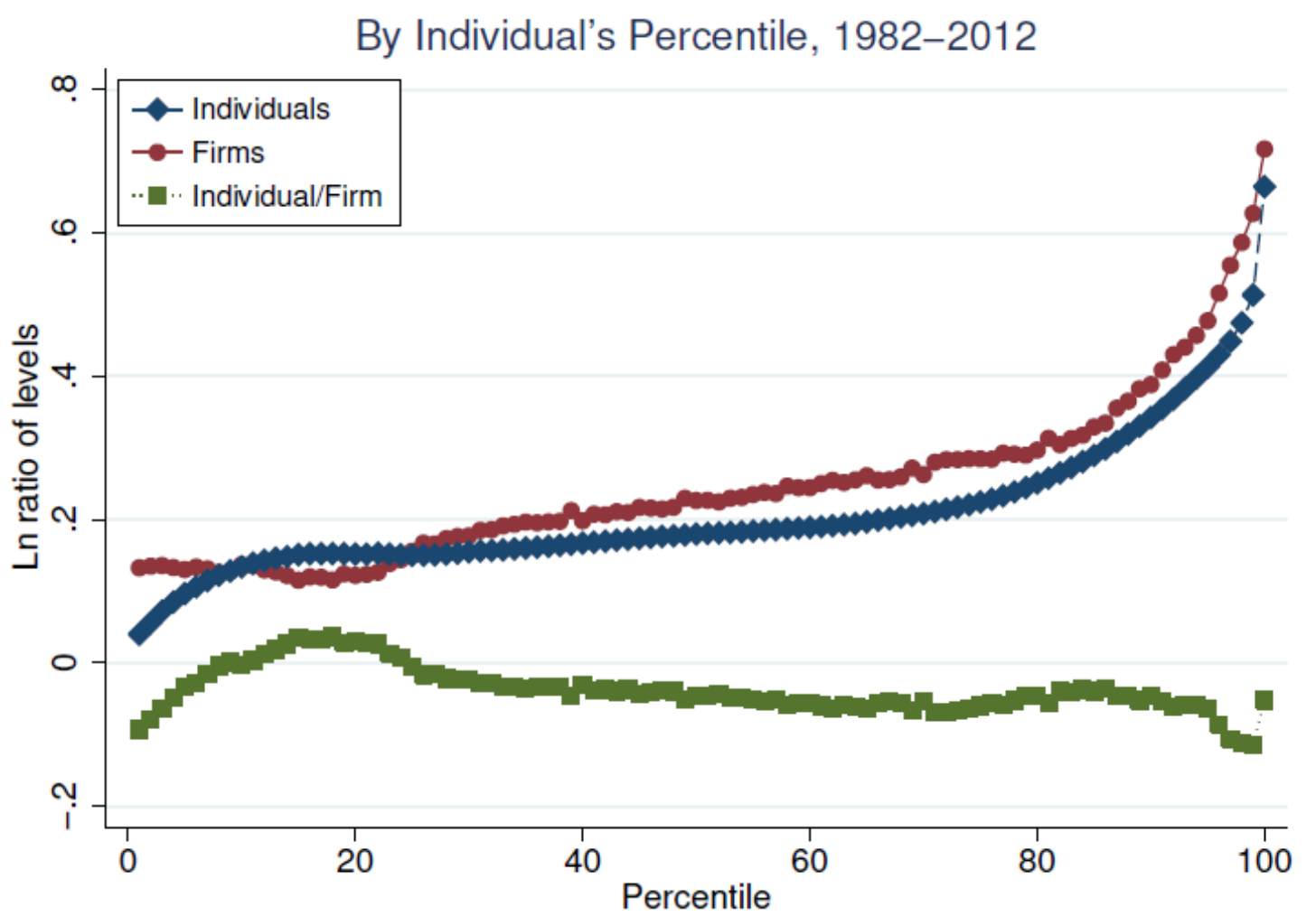
    Gottfries & Teulings: Returns to on-the-job search

    http://cepr.org/active/publications/discussion_papers/dp.php?dpno=11921
- Neither does evidence on minimum wages
  - Large spill over effects of increase in minimum on wage levels far above the minimum

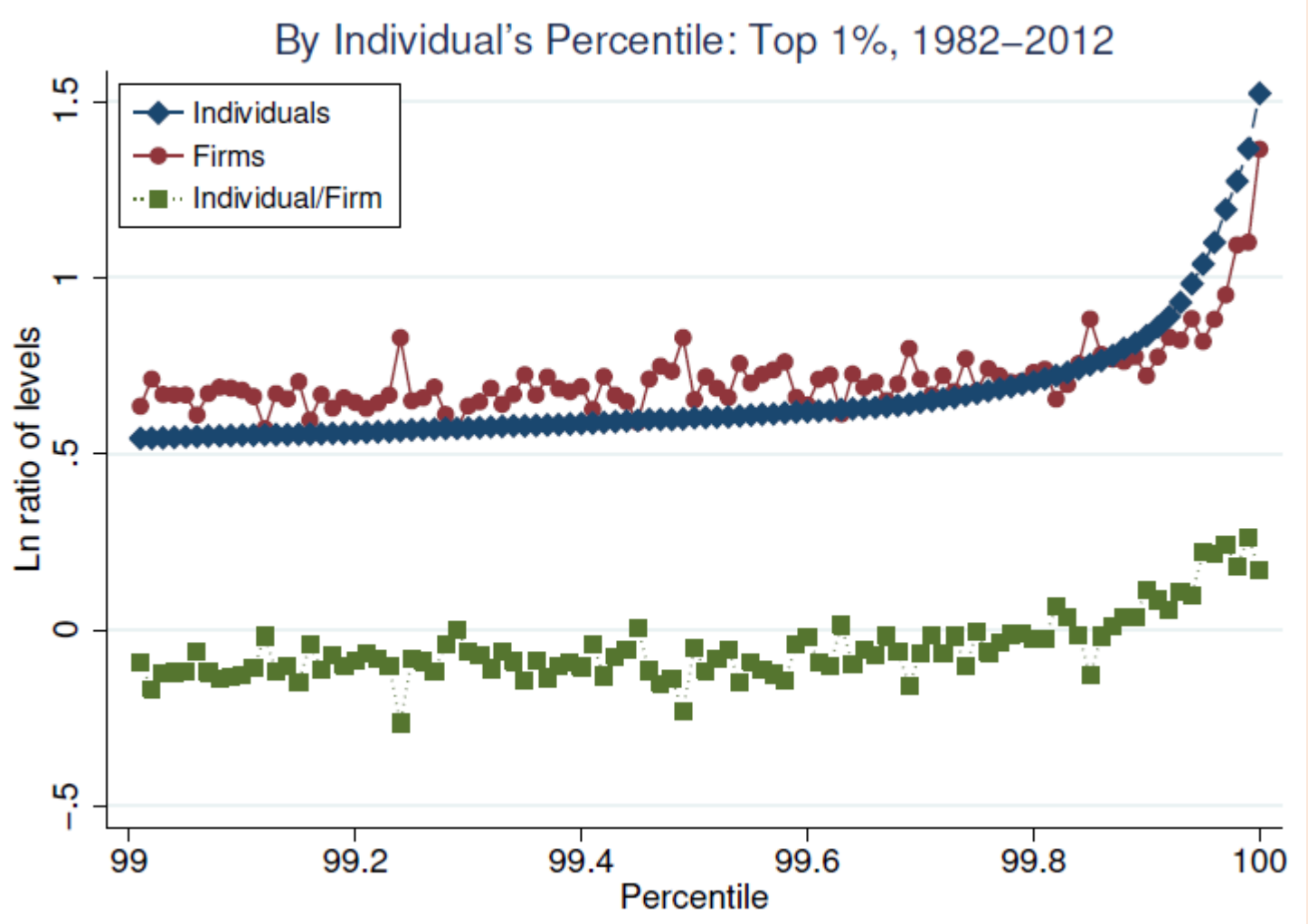
    Engbom & Moser: Minimum wage: evidence from Brazil
    https://site.stanford.edu/sites/default/files/eimw.pdf

Firming up inequality I

Bloom et.al. 2015, http://www.econ.ucla.edu/tvwachter/papers/FUI_website_NBER_SI.pdf



Firming up inequality II



Conclusion rent sharing

1. Should bargaining power of labour be increased to extract rents for the population at large?
2. Should there be a world wide capital gains tax?
3. Political differences between US and EU might be helpful