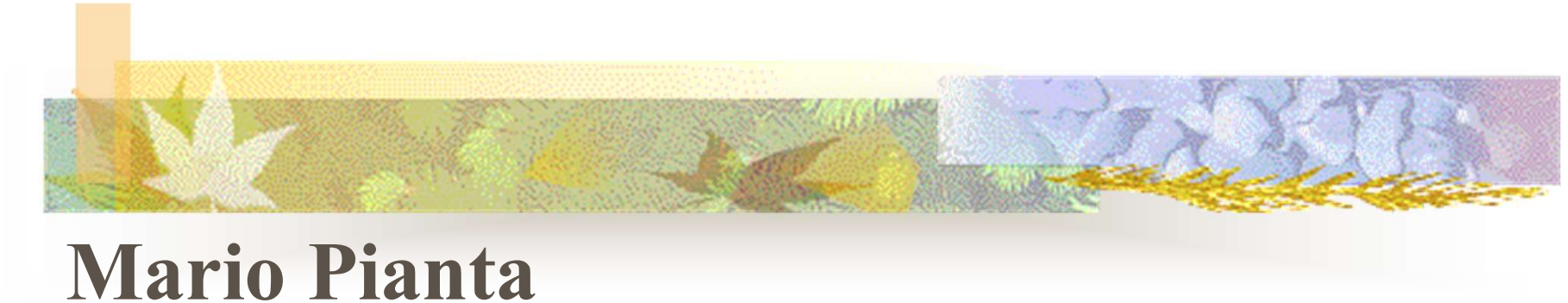
Fatti stilizzati su capitale, tecnologia e lavoro



Mario Pianta
Scuola Normale Superiore, Firenze

Capitale e lavoro nell'era digitale, Ferrara, 5 novembre 2019

L’insegnamento di Giorgio Lunghini

“la mia tesi è che la disoccupazione ha oggi carattere strutturale, ha origine nelle forme attuali del cambiamento tecnologico e organizzativo, ed è tendenzialmente irreversibile”

Giorgio Lunghini ***L’età dello spreco. Disoccupazione e bisogni sociali*** (Bollati Boringhieri, 1995)

Questioni chiave

- la divaricazione tra crescita della produzione di merci e ristagno dei lavoratori salariati;
- la compresenza di bisogni sociali e lavoratori disoccupati;
- la necessità di lavori ‘concreti’, di cura delle persone e dell’ambiente, fuori dal mercato, accanto al lavori ‘astratti’ dei salariati che producono merci.

Capire il capitalismo

- ***Conflitto crisi incertezza. Le teoria economica dominante e le teorie alternative*** (Bollati Boringhieri, 2012)
- Ricardo, Marx, Keynes, Sraffa
- il capitalismo, come un sistema in cui la distribuzione del prodotto sociale tra le classi è materia di conflitto;
- in cui la norma è la crisi e non l'equilibrio
- **troppe merci, poco lavoro**

Tecnologia e lavoro

- Come leggere la questione tecnologia-lavoro alla luce di una visione d'insieme del capitalismo?
- Quali **fatti stilizzati** emergono dalle analisi su questo tema?
- Quali cambiamenti con ICT e digitale?
- Il ruolo delle politiche

M. Pianta, *Technology and employment. Twelve stylized facts for the digital age*. Indian Journal of Labour Economics, 61, 2, 2018: 189-225.

1. Technology is shaped by social relations

- Technologies and resulting economic activities follow from decisions of key economic players and government policies, reflect social relations:
- On how capital wants to use labour (quantity and quality) in production: distributional outcomes
- On the choice between private or public, market or non-market activities
- On economic, social, environmental outcomes
- A policy debate is needed

Digital technologies are transforming capitalism

- We are in the techno-economic paradigm of Information and Communication Technologies: a digital age. Now **digitalisation** accelerates.
- Strategy of 'Industry 4.0' with automation, robotisation, 'Big Data', 'Internet of things', 'Cloud computing' 'platform economy'.
- **This is not an obligatory direction of technology, is the result of economic, social and political choices**

Digitalisation and jobs

- Impact: fewer jobs, more polarised occupations, faster obsolescence of knowledge, weaker union protection, greater inequality.
- Even mainstream views point out major job losses: within the next 20 years 47% of US jobs could be automated (Frey-Osborne 2017) (Acemoglu-Restrepo 2017)
- Change in activities and nature of jobs Special issue of *Economia e Politica Industriale*, eds Cirillo, Molero, 2019

Assessing the employment impact

- Digitalisation leads to less and polarized jobs in industries (Reljic, Evangelista, Pianta 2019).
- Positive effects when industries acquire from digital sectors greater intermediate inputs, improving performances; this is complementary to product innovations
- Negative effects when digital investments per employee increase; this is complementary to innovation in processes, restructuring of production, more efficiency, control, flexibility

The boundaries of accumulation

- Data are a new key commodity
- Boundaries change between market and non-market goods, between private and public goods, between work and (unpaid) human activities, between waged employment and other forms of (somehow paid) work
- Cases of Google, Facebook, AirB&B, Uber: platforms, monopolistic power, capture of non-economic activities, data

Rise of ‘surveillance capitalism’

- Zuboff (2019) Google, Facebook, etc. have world monopoly positions; ‘free’ services but capture of data on behaviour. Extraction of information to influence choices of consumers, workers, citizens, selling info to businesses
- End on uncertaintly for dominant firms, consumers’ choices are shaped
- Human experience becomes a key new commodity as in Polanyi land, labour and money were crucial for industrial capitalism.

Finance and digital firms

- Huge profit potential, booming stock market
- Google stock market value of $532bn in 2016, with 75,000 US employees
- General Motors' peak market capitalisation in 1965 at $225 bn with 735,000 employees
- No reciprocity and jobs, no domestic demand constraint, no taxes, global reach
- **Issues**: What are the boundaries of surveillance economy? How accumulation operates? Challenge from China ignored by Zuboff

2. Technology saves labour, technological unemployment is rooted in capitalism

- In capitalism technology is embodied in means of production and in knowledge of workers. Technology aims to replace labour, reduce wage, accumulate capital. Technological unemployment is rooted in the nature of capitalism
- The long term reduction in working hours per workers has been reversed

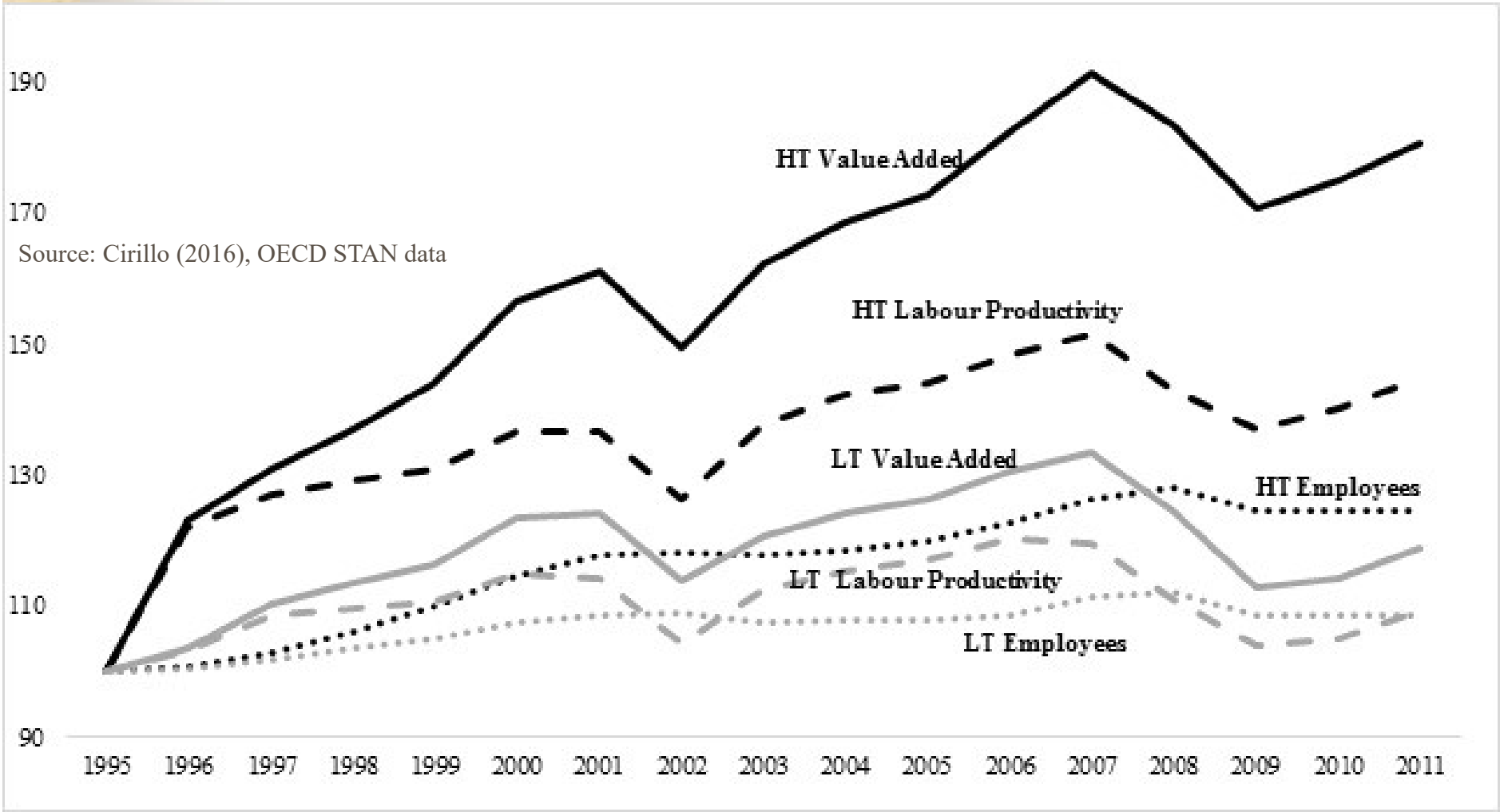
3. Different technol. strategies have contrasting effects

- Different technol. strategies exist
- *Technological competitiveness*: new products open up new markets, leading to job creation;
- *Cost (or price) competitiveness:* labour saving new processes lead to job losses
- Innovation surveys on firms show this diversity, beyond the limitations of R&D and patent data as technological indicators.

Industries differ in employment and technology

- High-tech/low-tech distinction and Pavitt taxonomy show how technology drives the the different evolution of activities and jobs
- Different tech-employm relationships in each industry group

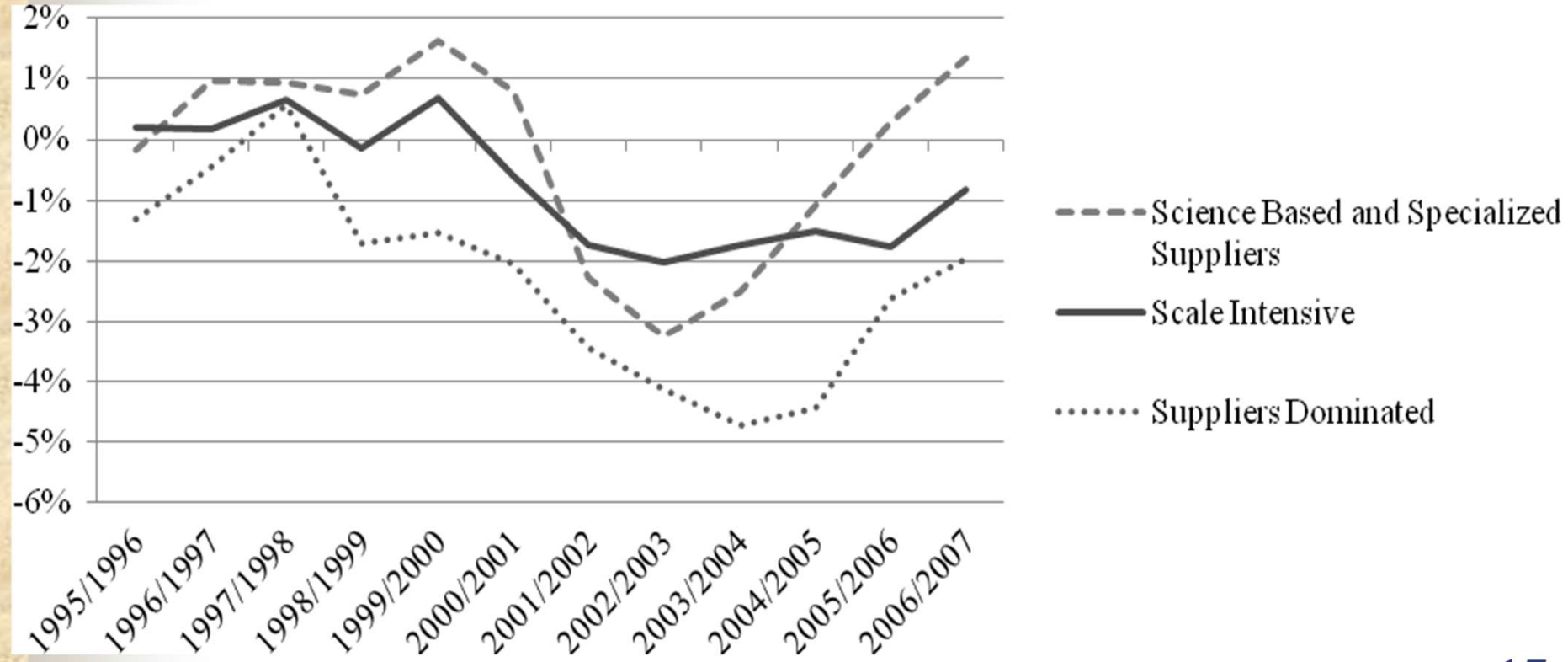
Value added, employment, productivity in high/low tech
five major EU countries (DE, ES, FR, IT, UK)



Source: Cirillo (2016), OECD STAN data

Employment change in Revised Pavitt classes

six major EU countries (DE, ES, FR, IT, NL, UK)



Occupational structure by Revised Pavitt industry groups, % composition, 2014

Manual workers

Managers

Effects are at the firm, industry and macroeconomic levels

- At firm level all innovations improve firms' performance (at the expense of non-innovators)
- At industry level (constrained by demand and trade) technology can create or destroy jobs
- At macroeconomic level indirect effects and compensation mechanisms operate (changes in prices, wages, demand for new goods, etc.)

4. Technol.: disequilibrium, demand and struct. change

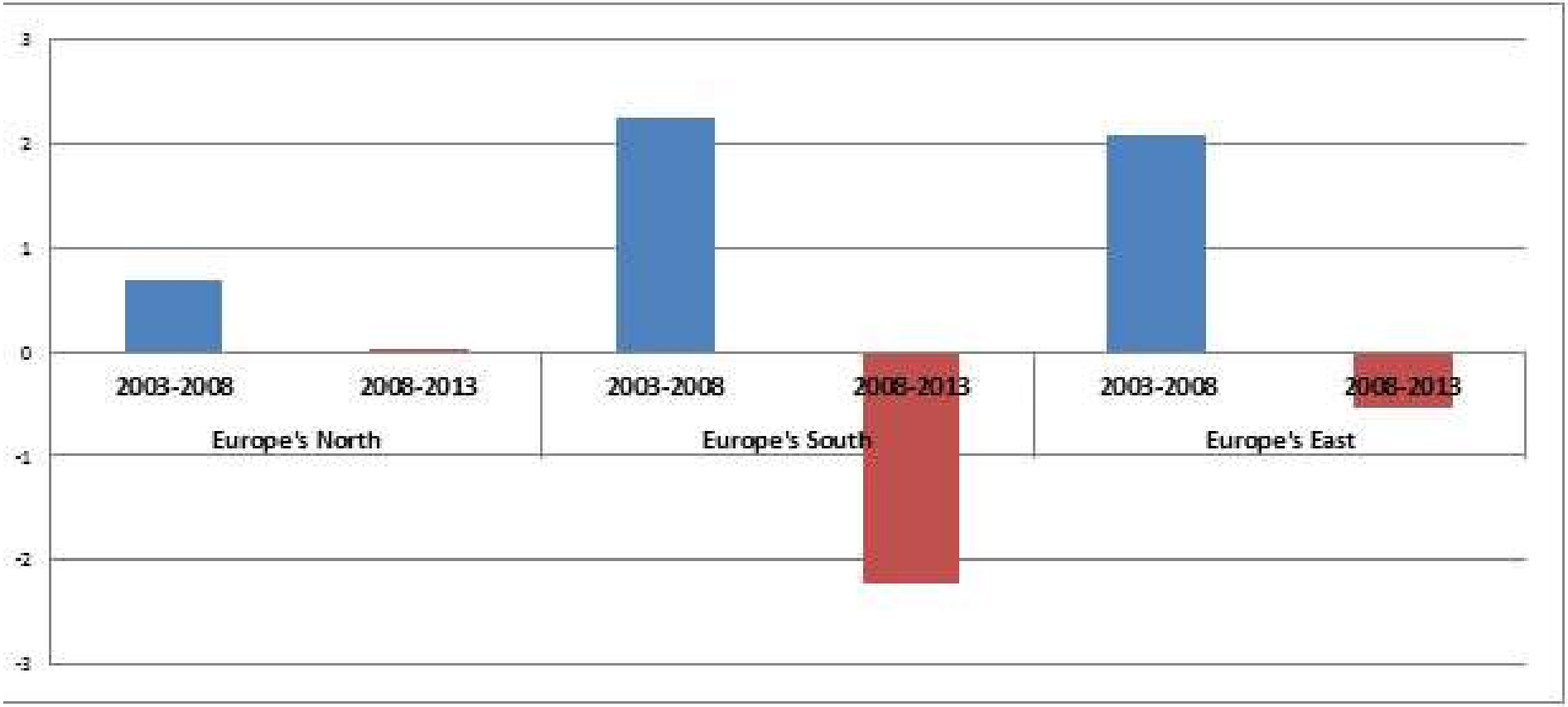
- **Mainstream econ**: equilibrium of product and labour markets; technology is exogenous. New growth theory assume some firms innovate. Techol. unempl. is ‘assumed away’
- **Disequilibrium approaches** more appropriate:
- Neo-Schumpeterian: technol. paradigms, waves
- Evolutionary: innovation variety and selection
- Post-Keynesian: demand and structural change

Business cycles matter

- Technol. change and job dynamics are cyclical
- Expansions provide space for new products, new markets, new jobs;
- Recessions bring new processes, restructuring and job destruction.
- The nature of the innovation-employment relationship changes in up/downswings

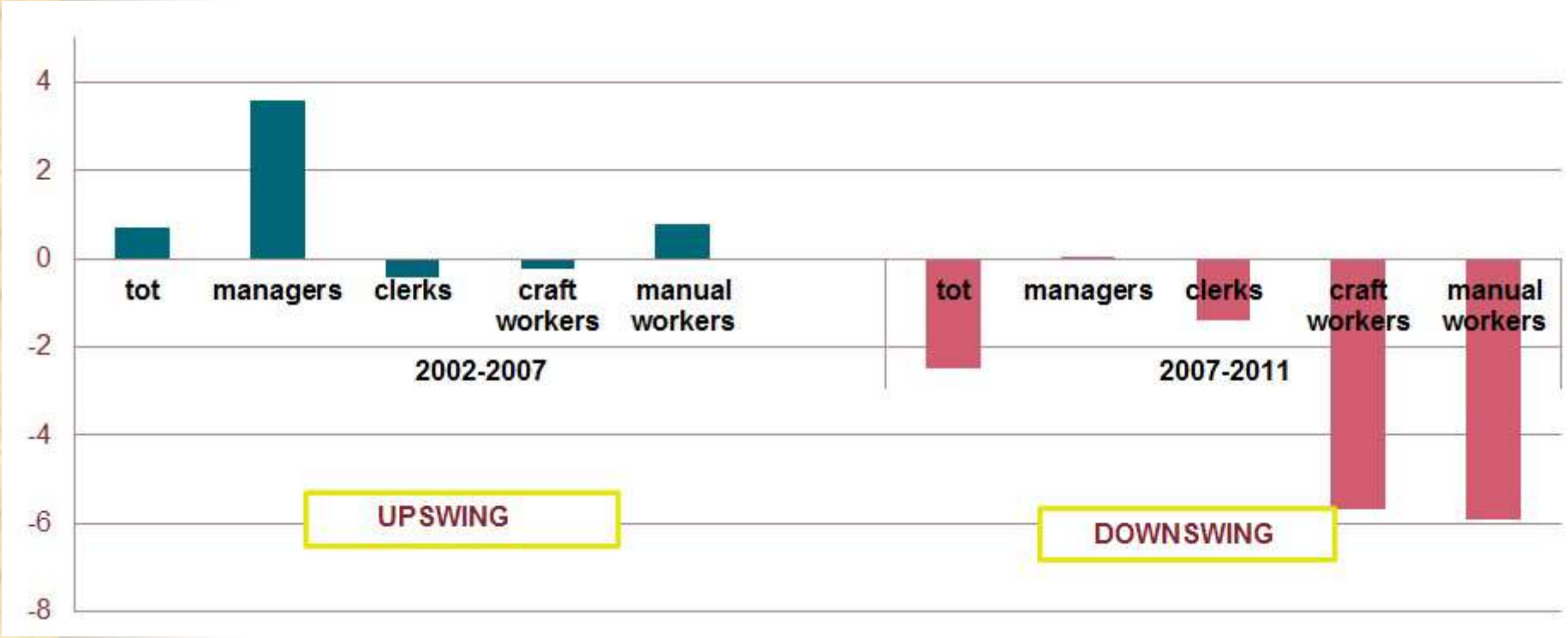
Employment change in North, South, Eastern Europe Upswing and Downswing

Annual rates of growth (2003-2008; 2008-2013)



Employment by professional groups

Average annual growth rate. Percentage change (DE, FR, IT, ES, UK)

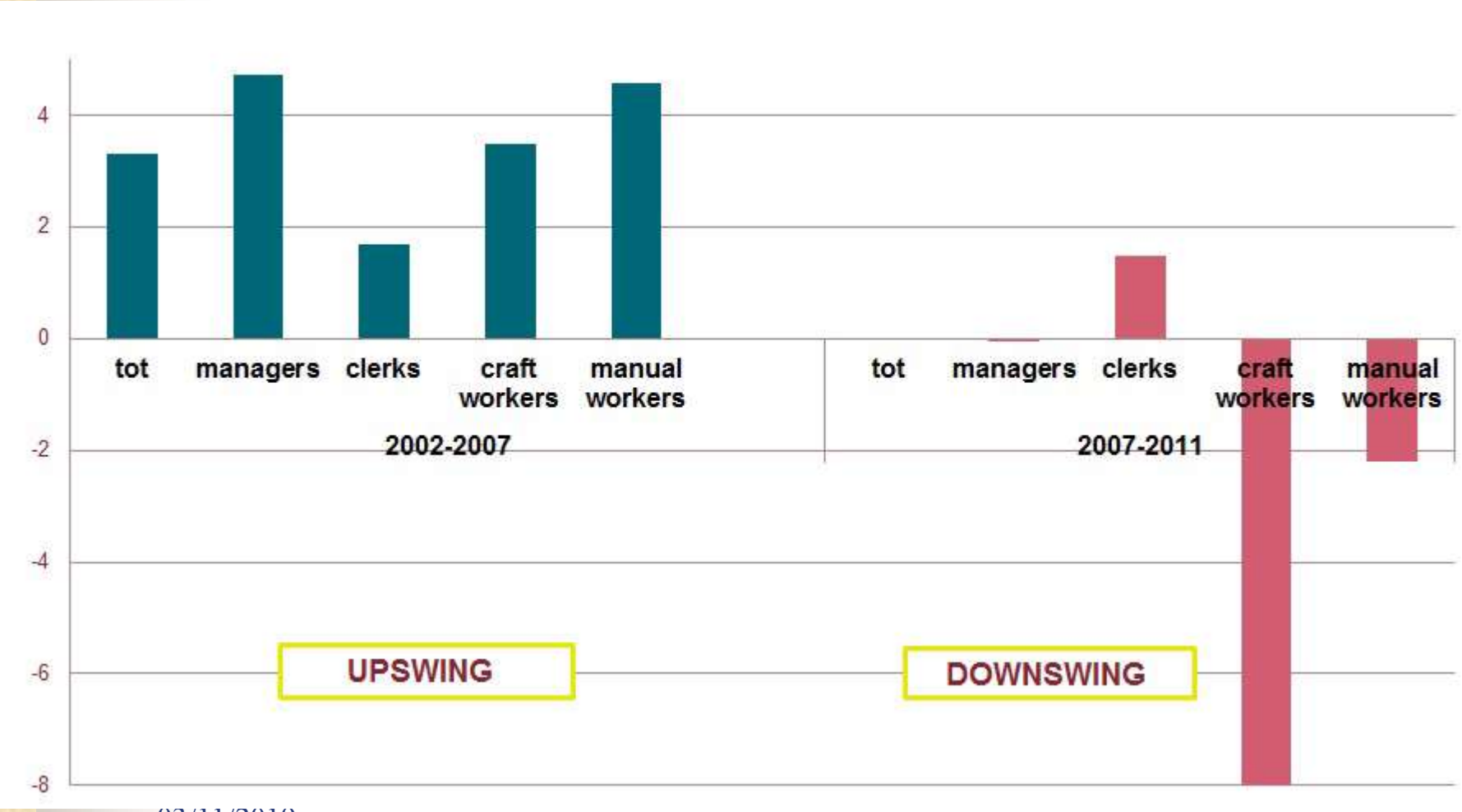


Expansions are polarising, mostly in services

Contractions are reducing polarisation mostly in manufacturing due to huge losses of lowest skills.

Manufacturing

Services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managers
clerks
craft workers
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2002-2007
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managers
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2007-2011
UPSWING
DOWNSWING

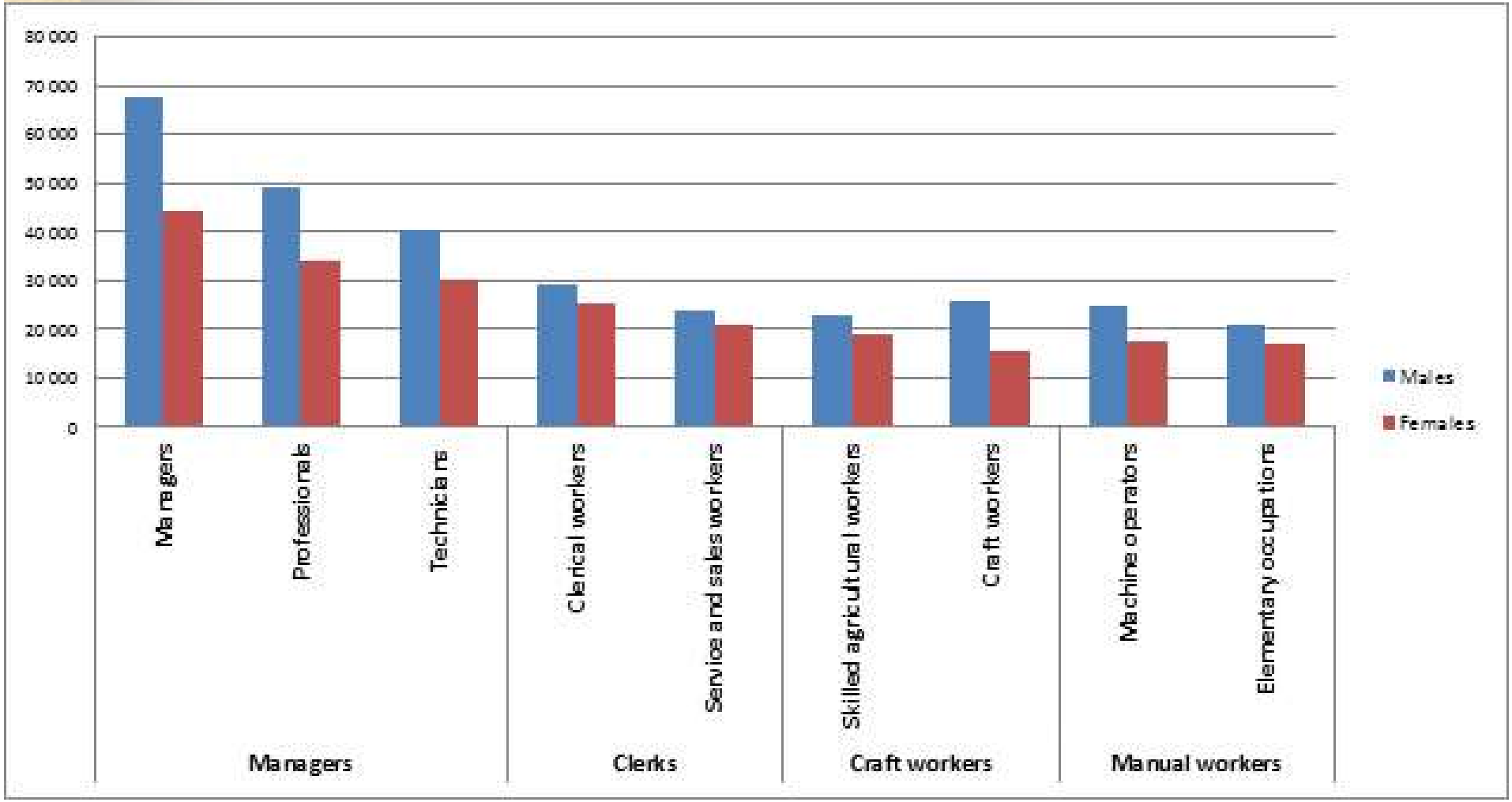
5. The impact of technology differs across occupations and skills

- Quality of jobs matter
- *skill bias technical change*: upskilling (not happening)
- *routine biased technical change:* computers replace routine (cognitive and manual) tasks
- More polarised employment structure shown by data on *occupations* (that reflect hierarchy)

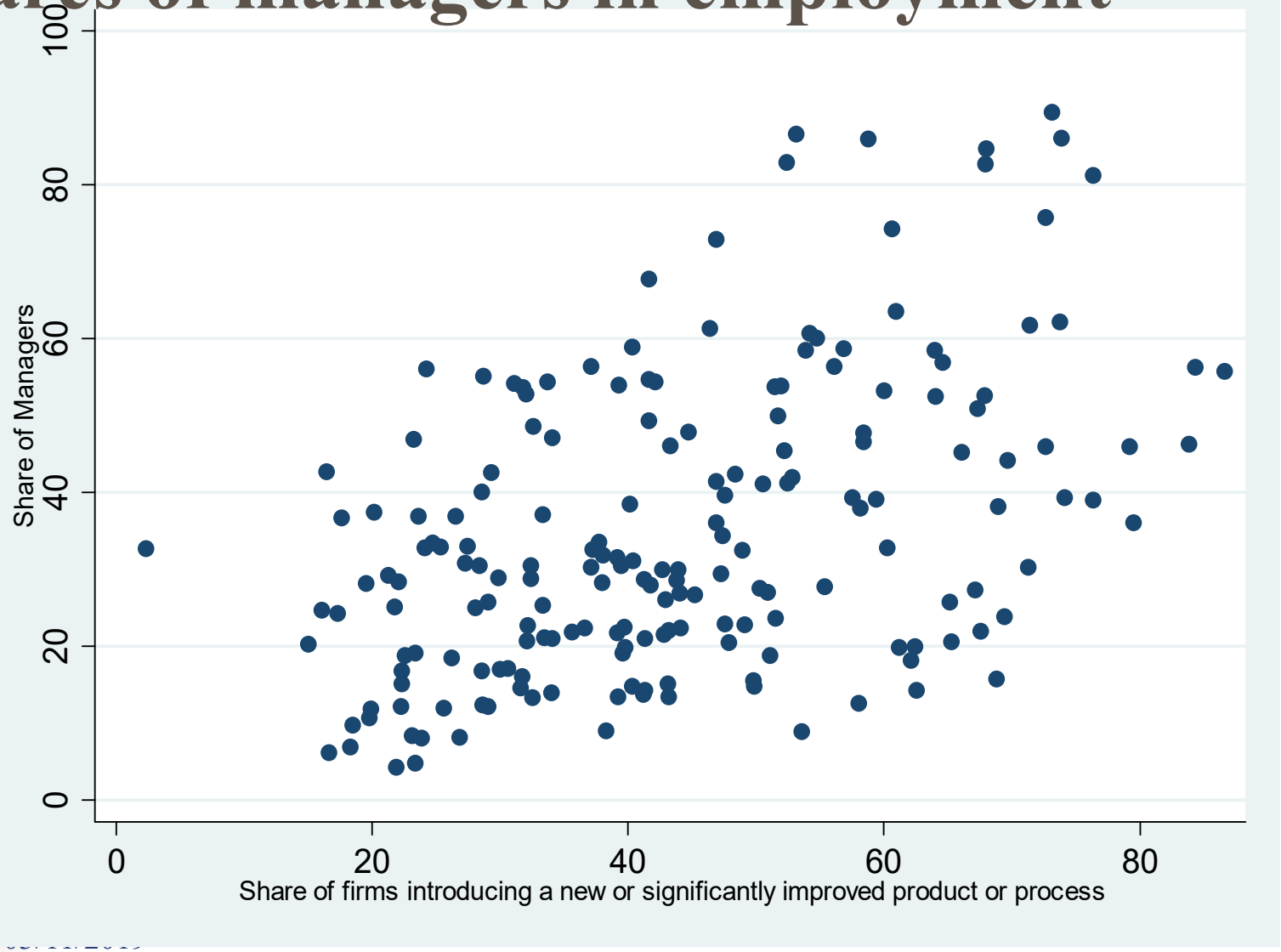
Four ISCO occupational groups

PROFESSIONAL GROUPS	ISCO 1 Digit	ISCED
MANAGERS	Managers, Senior officials and legislators	3 + 4
	Professionals	4
	Technicians and associate professionals	3
CLERKS	Clerks	2
	Service and sales workers	2
CRAFT WORKERS	Skilled agricultural and fishery workers	2
	Craft and related trade workers	2
MANUAL WORKERS	Plant and machine operators and assemblers	2
	Elementary occupations	1

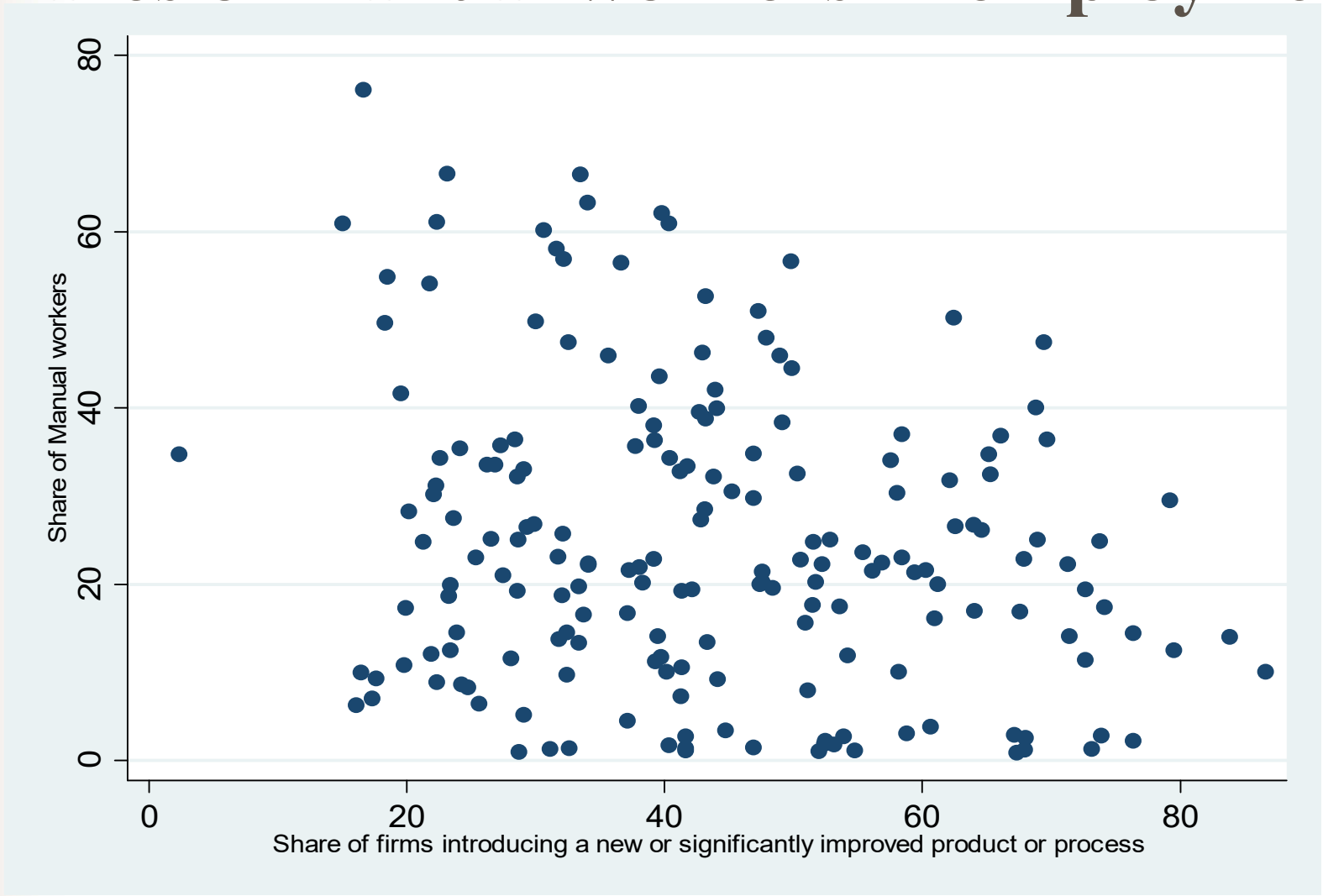
Annual earnings of occupational groups in EU 28
(Euros 2010)



Product innovation in EU industries and shares of managers in employment



Process innovation in EU industries and shares of manual workers in employment



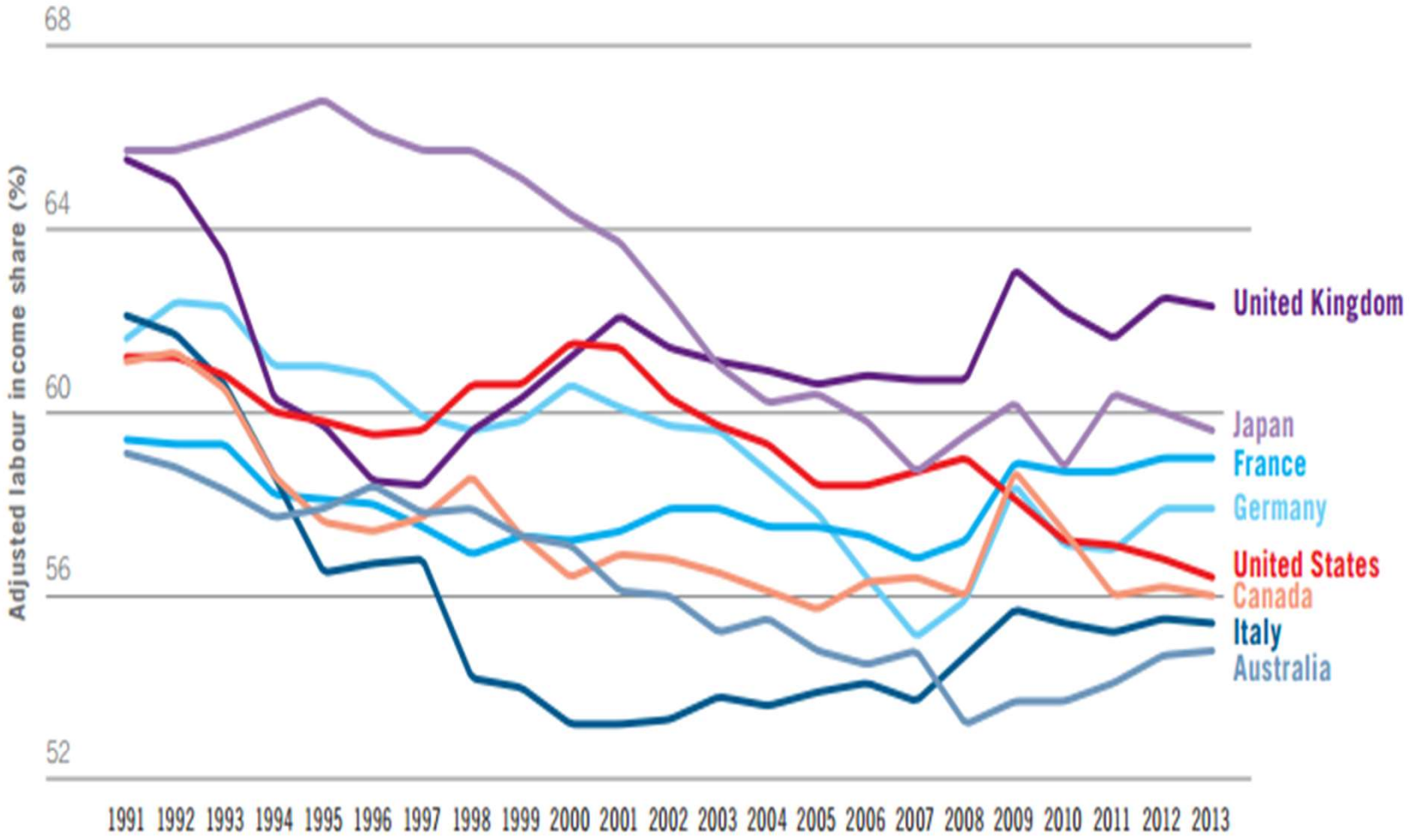
Outcomes are not shaped by labour markets alone

- Mainstream econ: flexible labour markets reduce unemploym. But employm. depends on technology and labour demand shaped by markets for goods
- Labour markets should focus on match for education, skills; wage-productivity; institutions supporting innovation

6. Technology is an engine of inequality; profits above wages

- Record income inequality,10-15 percentage points of GDP from wages to profits
- productivity growth is leaving behind wages
- Technology favours profits: extra-profits on new prod.,wage savings on new processes
- Wage disparities increase, low wage for low skills, precarious workers.
- Policies favoured disparities. Now OECD: “when income inequality rises, growth falls”.

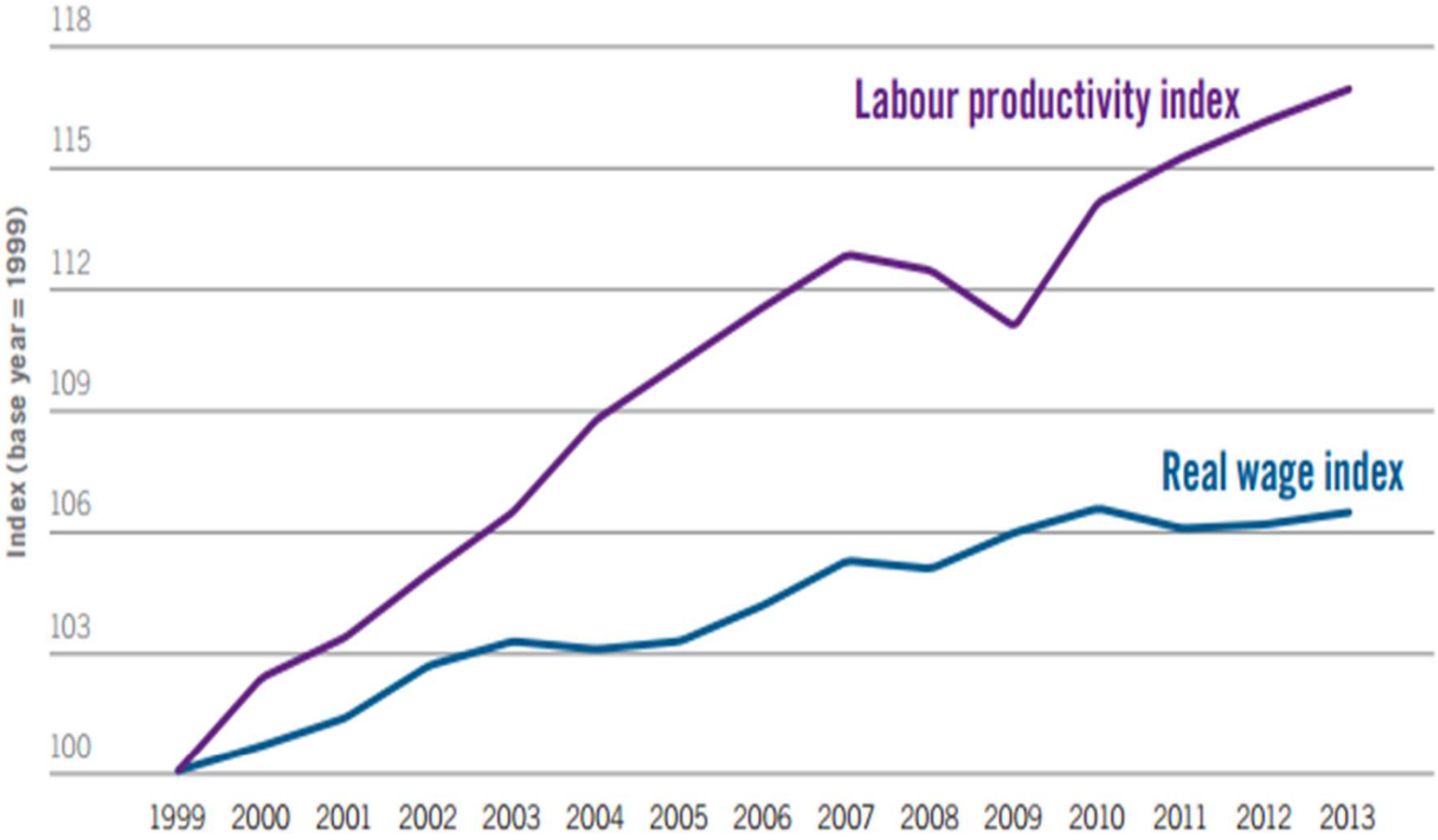
Figure 10 Adjusted labour income share in developed G20 countries, 1991–2013



Note: Adjusted wage share, total economy, as a percentage of GDP at current market prices (compensation per employee as a percentage of GDP at market prices per person employed).

Source: European Commission AMECO database. Data accessible at: www.ilo.org/gwr-figures

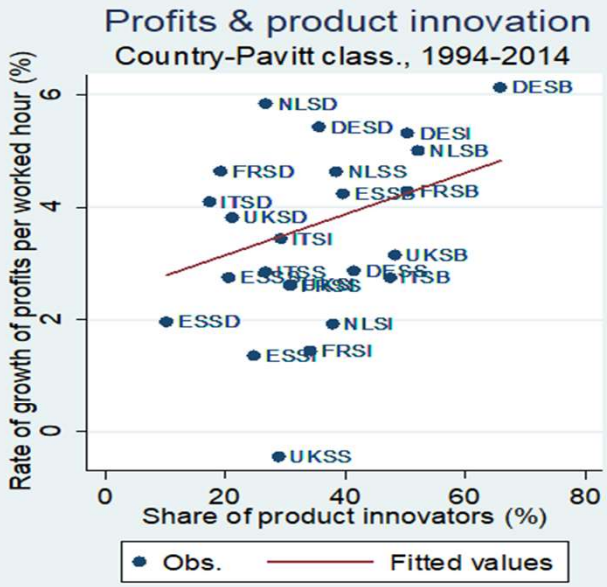
Figure 7 Trends in growth in average wages and labour productivity in developed economies (index), 1999–2013



Note: Wage growth is calculated as a weighted average of year-on-year growth in average monthly real wages in 36 economies (for a description of the methodology, see Appendix I). Index is based to 1999 because of data availability.

Sources: ILO Global Wage Database; ILO *Trends Econometric Models*, Apr. 2014. Data accessible at: www.ilo.org/gwr-figures

Innovations, wages and profits In EU industries



Policies are needed for:

- shaping technological change in the interest of society and of the development process
- reducing its negative employment effects with economic, demand, struct. change, institut. policy
- making sure that the gains from innovation and productivity go (also) to labour in the forms of higher wages, lower working hours and improved working conditions