Eurofound

European Foundation for the Improvement of Living and Working Conditions

The tripartite EU Agency providing knowledge to assist in the development of better social, employment and work-related policies

Empirical perspectives: will we still have work for everyone?

European Social Week

Milan, 170219

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Eurofound

Outline of presentation

1. How is employment changing?
2. What is the digital revolution?
3. How is it predicted to affect work and employment?

Relevant Eurofound research

- **Labour market change: *the European Jobs Monitor***

- **Digital age and work:** One of two major areas of transversal research in Eurofound's 2017-20 work programme
- Builds on previous work on new forms of employment
- Concentrates on three areas of innovation likely to have the biggest impact on work and employment:
  - **Digitisation**
  - **Automation**
  - **Platforms**

How is employment changing?

Shifting composition of employment (ppts), EU28, 2011-18

Occupation / sector	Agriculture / extractive	Manufac / utilities	Construction	Primarily private services	Primarily public services	**Total occupation**
White-collar high-skilled	0.00	0.19	0.02	1.60	**0.58**	**2.40**
White-collar low-skilled	-0.01	-0.09	-0.04	-0.25	**-0.11**	**-0.51**
Blue-collar high-skilled	-0.80	-0.39	-0.40	-0.02	**-0.03**	**-1.65**
Blue-collar low-skilled	-0.14	-0.06	-0.22	0.24	**-0.06**	**-0.24**
Total sector	**-0.95**	**-0.35**	**-0.64**	**1.57**	**0.37**	**0.00**

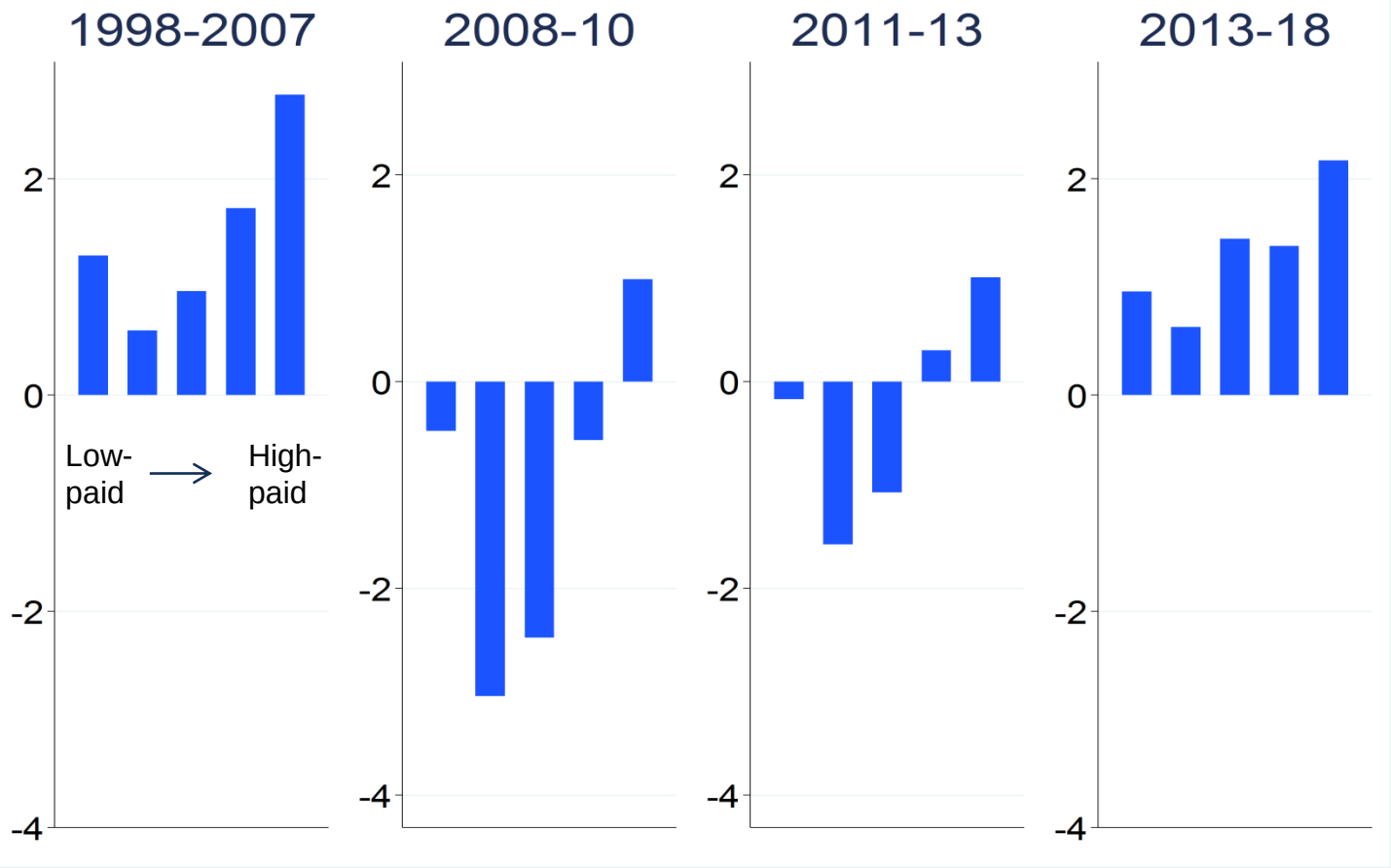
Source: European Jobs Monitor, EU-LFS (author's elaboration)

How is employment changing? (2)

EU-28	2018, %	change 2008-18, ppts
Employment rate (20-64)	73.2	+2.7
Gender employment gap (15+)	8.0	-2.5
Part-time share of employment (15+)	20.3	+2.1
Older worker (>=55 yrs) share (15+)	19.4	+5.7
Graduate share (15+)	34.9	+9.3
Services share (15+)	71.4	+4.2

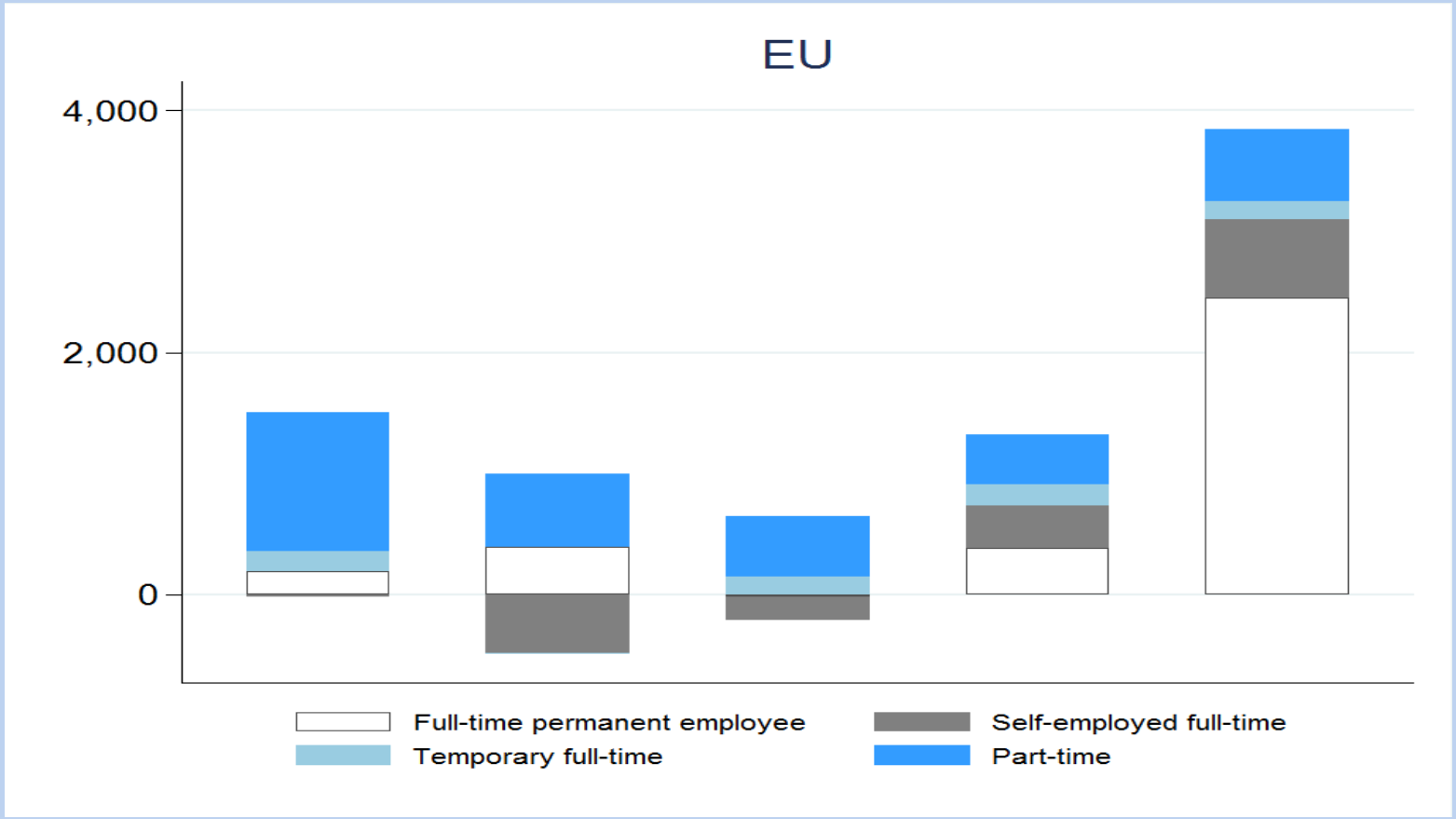
Source: Eurostat / EU labour force survey, author's calculations

Employment shifts (%pa), EU, by job-wage quintile



Source: Eurofound. European Jobs Monitor annual report 2019 (forthcoming)

Growth of atypical employment, 2011-16



Source: Eurofound. European Jobs Monitor annual report 2017

The digital revolution

- “a general acceleration in the pace of technological change in the economy, driven by a massive expansion of our capacity to store, process and communicate information using electronic devices”

- Core inventions: microprocessor, networking/internet, artificial intelligence / self-learning algorithms

Four key attributes of digital technologies with transformative potential for economic activity

- Flexibilisation of production
- Fast and pervasive information availability
- Emergence of digital goods with low or zero marginal costs
- Strong network effects

Some predictions

- Differing assessments of the likely impacts of the digital revolution
  - the ‘second machine age’ (Bryjnolfsson/McAfee, 2014)
  - Digital Revolution as the trigger of an evolutionary leap in humankind equivalent to the appearance of the Homo Sapiens (Kurzweil, 2005; Harari, 2016) … or
  - ‘a peripheral set of innovations mostly relevant for leisure industries’ (Gordon, 2016)
- And impact on employment
  - Technological displacement – 47% US employment automatable via computerisation, Frey/Osborne (2013) within ‘a decade or two’
  - More recent, more modest estimates – 9-14% ‘of jobs in OECD countries are highly automatable’. OECD (2018), Arntz et al, (2016)
    - Above assessments based on a technical, ‘tasks’ approach – where occupations / jobs / work are decomposed into sets of discrete tasks

Will the digital revolution reduce employment?

1. In any previous tech revolution, jobs destroyed were more than matched by those created in new and growing occupations and jobs.
2. Because specific tasks are technically capable of being replaced does not mean that people doing them will lose their jobs. They may just be reassigned to new duties – high street banks employ similar levels of staff now as before the introduction of ATMs.
3. Many jobs are restricted to those with qualifications, subject to occupational licensing, including many very high paid jobs. Increasing specialisation implies greater regulatory, administrative and technical overhead – more jobs, not less jobs.
4. An example: technically, computers are probably better now than radiologists with 12+ years of professional training at detecting cancer in a diagnostic scan. Will radiologists become superfluous? Or will they just become better, more accurate, more productive in their principal tasks?

Will the digital revolution reduce employment? (2)

- Let's look at the data…
  - **Employment and volume of hours worked** in EU and USA in 2018 higher than it has ever been
  - Employment rates idem – 65% in 1998, 73.5% in 2018 (20-64 yrs)
  - Unemployment rate in some larger developed countries (DE, USA) at lowest level in a generation
  - More jobs than people …

Will the digital revolution reduce employment? (contd)

- Hard to automate tasks, the three ‘hard boundaries’:
  - Tasks requiring perception / manipulation, especially in unstructured environments,
  - Tasks requiring creative thinking, new ideas
  - Tasks requiring sociability, interactive communication

- All socio-technical transformations revolve around new “general purpose technologies” – steam, electricity, digital communication.

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- … humans are still the most evolved, adaptive general purpose technology of them all….

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Thank you for your attention!

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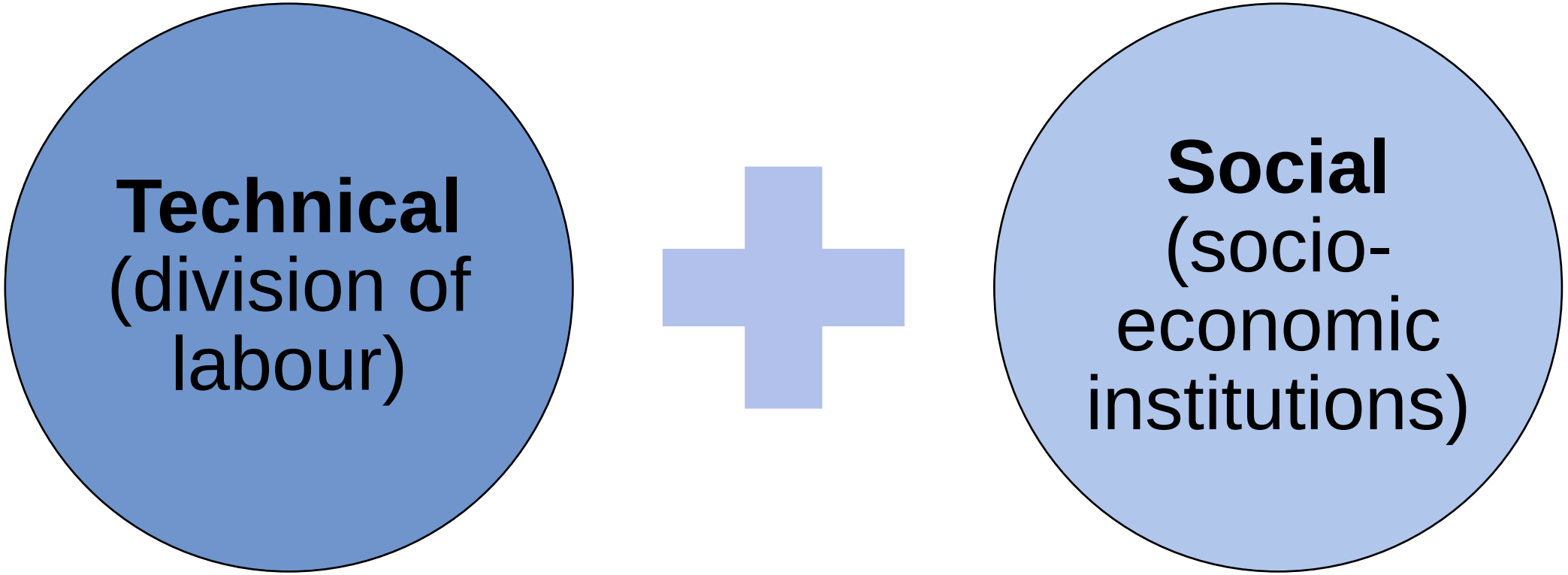
- All socio-technical transformations revolve around new “general purpose technologies” – steam, electricity, digital communication.
- These technologies are developed by humans for human purposes; we decide how new technologies develop, how social systems adjust to accommodate them
- … humans are still the most evolved, adaptive general purpose technology of them all….

Human input in production process



= Separation and allocation of tasks to different persons cooperating in an economic process

= Social coordination supports the functioning of economic processes by providing stability and by dealing with their external effects