Worker Transitions in the Digital Economy

Sir Christopher Pissarides

Regius Professor, London School of Economics and Professor of European Studies, University of Cyprus

Powering the European Digital Transition
CEDEFOP, 9 December 2022

Topics

1. Technological transformations
2. Digital technologies and job loss
3. Worker transitions
4. Meeting the upskilling challenge

1. Technological transformations

Innovation and growth

- Innovation is the driver of growth and well-being
- Since modern economic growth began, large scale innovations have brought one industrial revolution after another
- They are periods of intense technological change and social transformations, that brought the development of science, the reduction of poverty and the improvement of the quality of our lives

Sources of growth

- Each industrial revolution is characterized by a big new discovery, usually associated with energy - steam power, waterways, railways, the internal combustion engine and electricity
- The current one, based on digital power, broadly fits that model: it makes better use of energy to process data and perform tasks

Sustainable and inclusive growth

- Growth can benefit all in society if it is **sustainable and inclusive,** and modern digital technologies have the potential to achieve this objective, if used wisely

- Unfortunately the signs are not good so far. Inequality is high and not falling, many jobs created for the less-skilled are not good, and there is evidence of use of digital technologies for political purposes

2. Digital technologies and job loss

Digital technologies

- Digital technologies are affecting all aspects of the economy (they are “general purpose technologies”)
- Digital technologies started disrupting production and working conditions in the 1980s, with the introduction of computers to the office
- But they took off much more recently, with automation in manufacturing and artificial intelligence disrupting the office at all levels as well

Where are we heading?

- We still do not know where digitalisation is leading us
- That’s largely because we have a choice how to apply it. Humans can influence the next steps
- We know that no company can survive without it and no country can compete in international markets
- The challenge is how to “go digital” without leaving people behind or using it for restricting human liberties

How are digital technologies affecting production?

- Digitalisation went through three phases, computer software that could automate administrative work in the 1980s, robotics that automated manufacturing in the 1990s and AI entering production in the 21st century

- Computer software and robotics are simpler to integrate into production than AI

- AI has not yet affected production as much but the future now is in AI

Job loss

- Early on computers and especially robots were thought to be taking jobs away from workers
- The early claims were vastly exaggerated – but workers engaged in automatable jobs still live in fear of them
- This divergence clearly comes out in the worker survey that you will be hearing today. I found the following finding striking: 34% of workers think that new technologies will **not** affect their job but as many as 65% are continuing in their present job without having to learn new skills (maybe they are good forecasters?)

Estimates

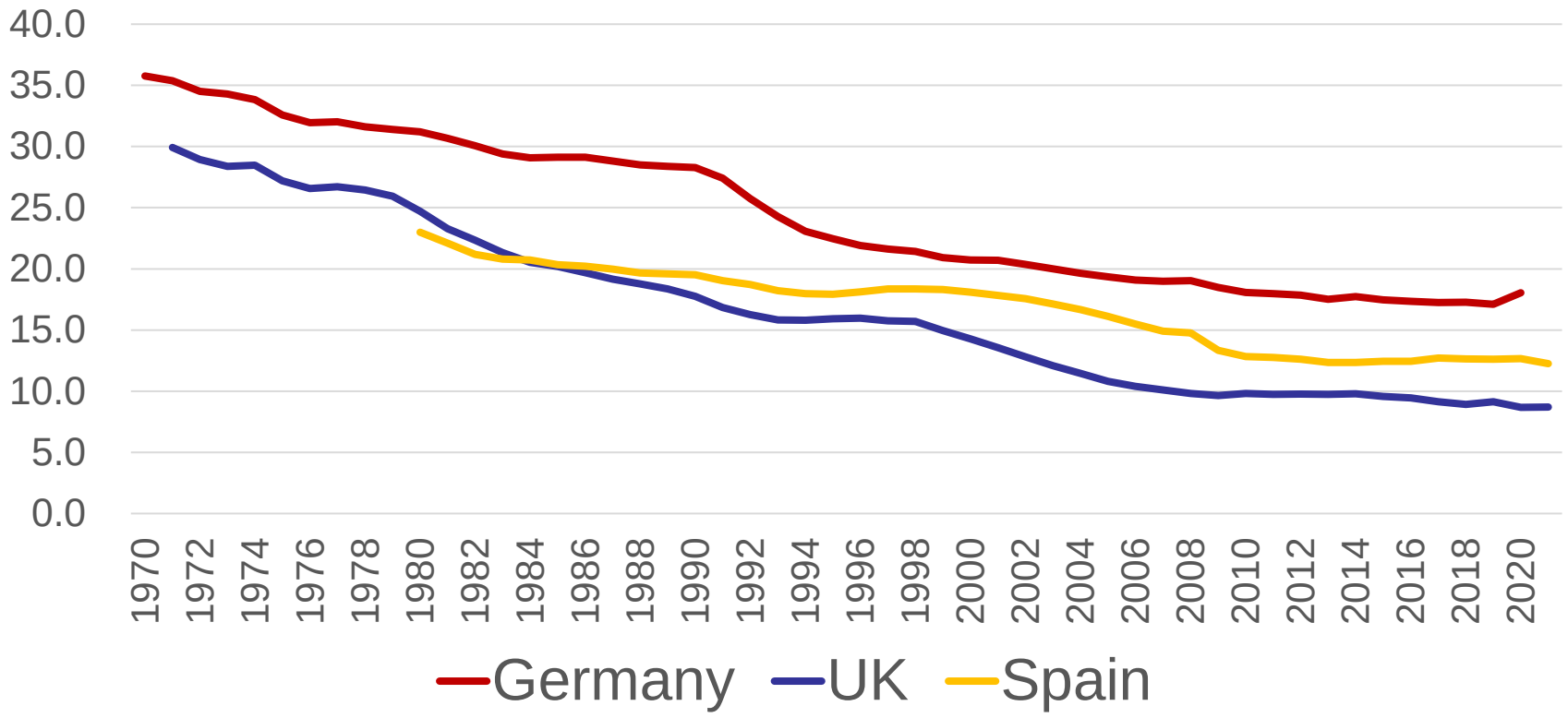
- Careful estimates by the OECD, MGI and others put the likely number of job loss at about 20% over the next ten years
- The pandemic accelerated the process
- But an equal number of jobs are expected to replace them
- And more recently researchers don’t count jobs lost but study task replacement, which is much bigger than job loss

Manufacturing

- As an illustration, consider manufacturing, the pioneering sector in automation (digital) technologies
- New labour-saving technologies and competition from low-labour cost countries (since 1990, China) led to a monotonic decline in employment, even for successful countries like Germany
- Robots appeared on a large scale after 2000, and we don’t see a break in behaviour since then

Manufacturing share of employment, %

(most robotised Germany, then UK, then Spain)



3. Worker transitions

Worker transitions

- In light of this, the real challenge is how to ensure that the labour market prepares workers for taking on new tasks
- Digital skills are needed across the economy for fuelling the “general purpose” technology of digitalisation
- But new jobs are expected to open in hospitality, health and care and in personal services across the economy

Digital skills

- Low skills in demand are in the hospitality and online business – delivery drivers, warehouse workers, food preparation in “dark kitchens,” gig jobs
- But it is expected that digital skills will be needed in non-technical sectors too – virtually all of labour will need digital skills, in the same way as two generations earlier all labour needed literacy

Skills in demand

- Employers are currently encountering skill shortages. They are seeking to increase employment in these jobs (Manpower survey results)
- Most in demand
  - IT specialists
  - banking, finance, insurance and real estate
  - Restaurants and hotels (hospitality)
  - Manufacturing, construction, primary production, retail trade

Competences

- The competences most in demand are
  - Data collection, organisation, understanding the message and processing
  - Ability to communicate information to supervisors and subordinates
  - Ability to plan and organise work
  - Ability to work with others collaboratively
  - Ability to communicate well with clients

4. Meeting the upskilling challenge

Meeting the challenge: companies

- Both companies and governments have a role to play in achieving smooth transitions
- Companies need to develop training programmes and opportunities for role changing within their companies to improve the match between workers and jobs
- Workers need to be motivated to “own” the role transition
- Best way to achieve this is to abandon old management styles and restructure their jobs

Create “good jobs”

- Research by economists, sociologists, psychologists and health researchers (including some of our own at the Institute for the Future of Work) paints a picture of what’s good work
- The most important principle is engagement of workers in decisions made at work
- This could take the form of information exchange, autonomy of the worker within the broader framework of company objectives and informal interaction with line managers

Other features of good work

- Terms of employment, “fair” pay and equal treatment across workers
- Social support, health, safety and psychological well-being are becoming increasingly important
- Job design – is the job exciting to do? Does it offer training opportunities and career advancement?
- Does the job enable the worker to balance work and personal life? Flexibility is important here, in hours of work and location

Meeting the challenge: governments

- More and better designed education at all levels
- Be modern and flexible, teach STEM skill as well as managerial and social skills
- Help with training programmes at the company level
- Provide good infrastructure, especially digital one and help with start-ups, e.g., by making it easier to get started, quick resolution of disputes and not big stigma from failures

Social skills

- Many of the jobs of the future will require social skills
- Hospitality industry, caring for children and old people, for sick, etc.
- Education and training in these skills is still rare
- Also skills to work remotely, which require the use of a computer, more autonomy and self-discipline

Conclusions

- Digital technologies are opening up many new avenues for progress, which we can control
- In order to achieve sustainable and inclusive growth we need more skills across the workforce
- Both companies and governments have an important role to play here, thought the provision of good jobs and restructured education and skills