

BANK OF ENGLAND

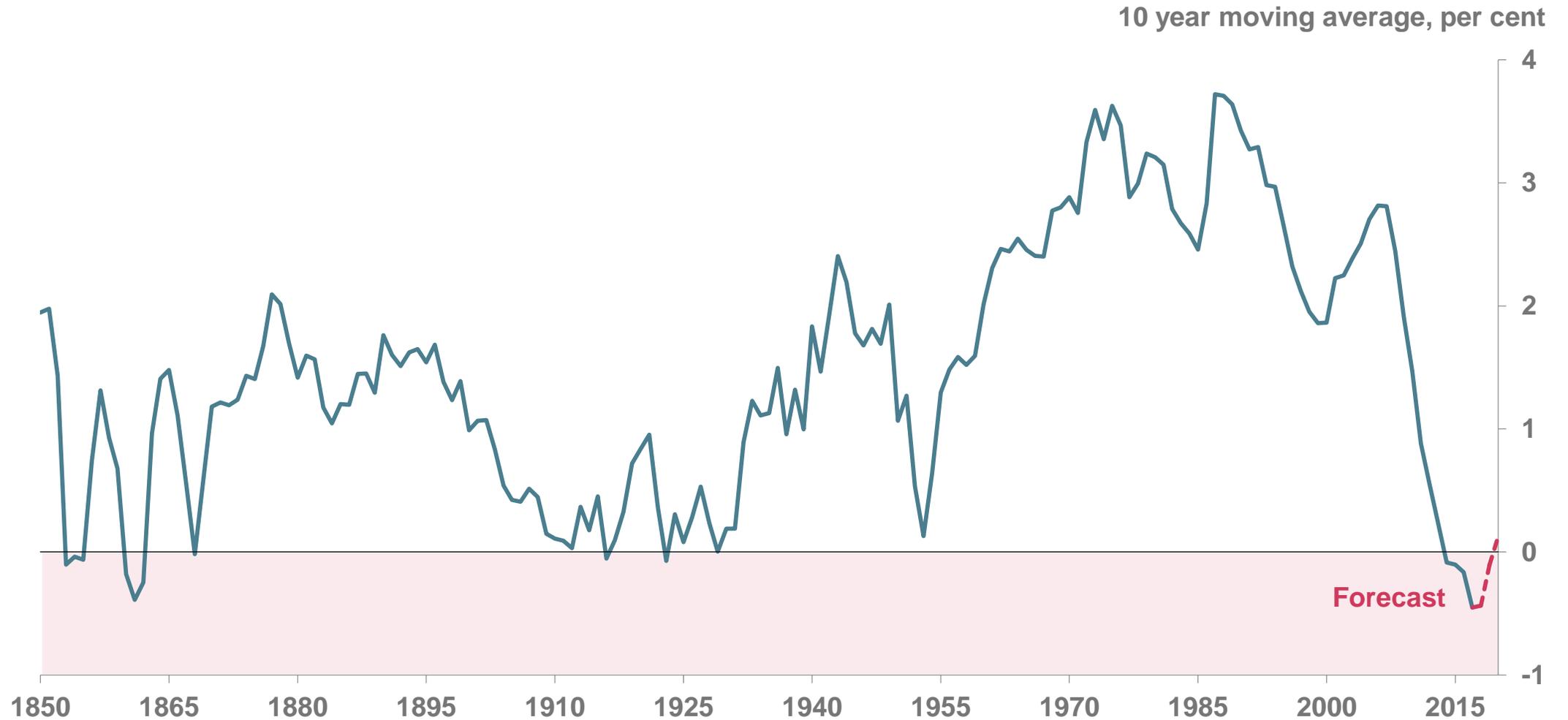
The Future of Work

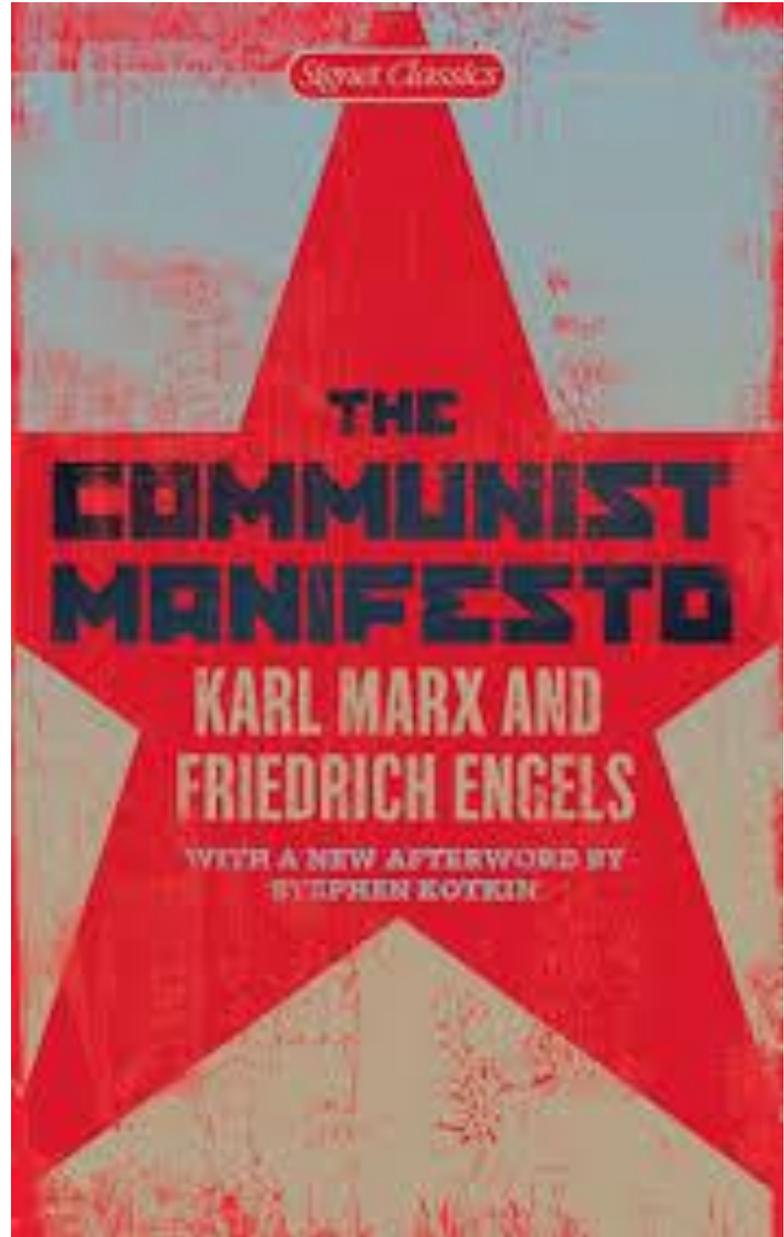
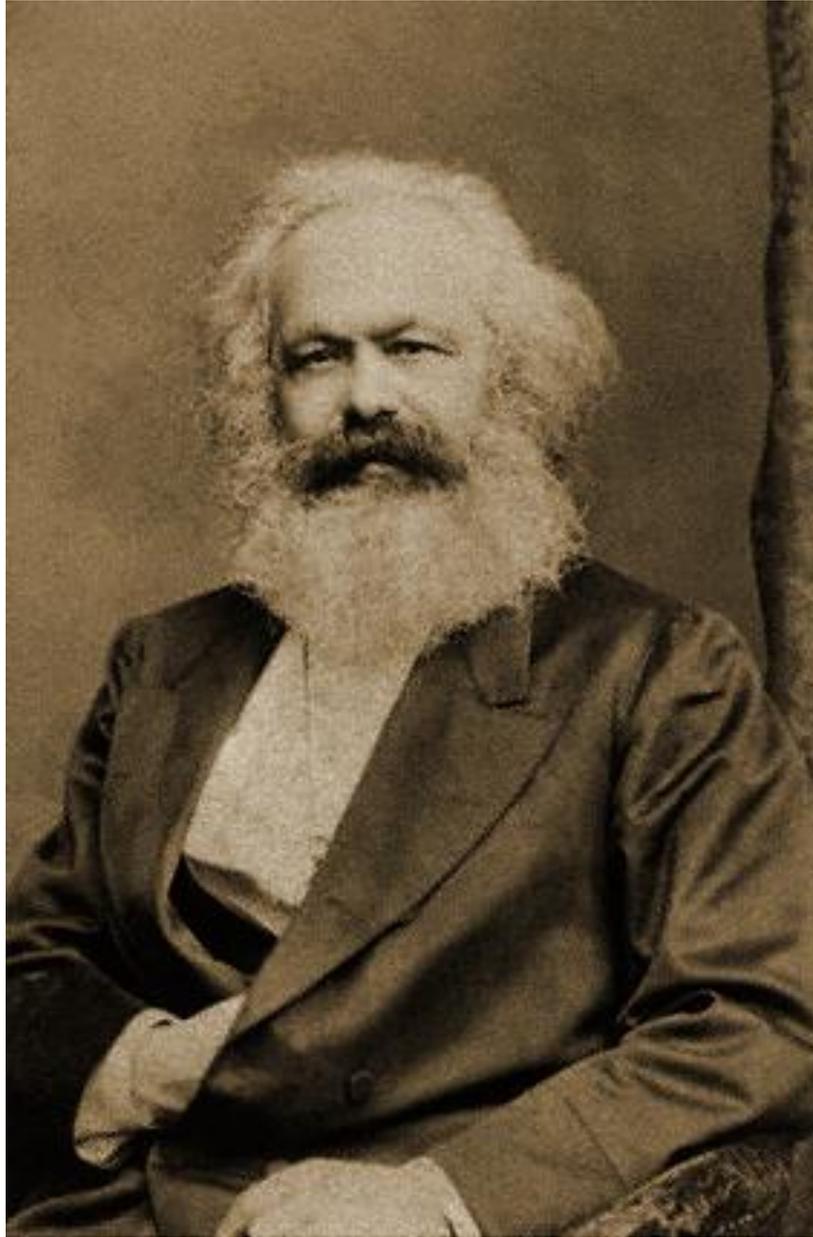
Public Policy Forum, Toronto

Mark Carney
Governor

12 April 2018

First lost decade of real wages since the mid-19th Century





Mid 18th Century



Mid 19th Century



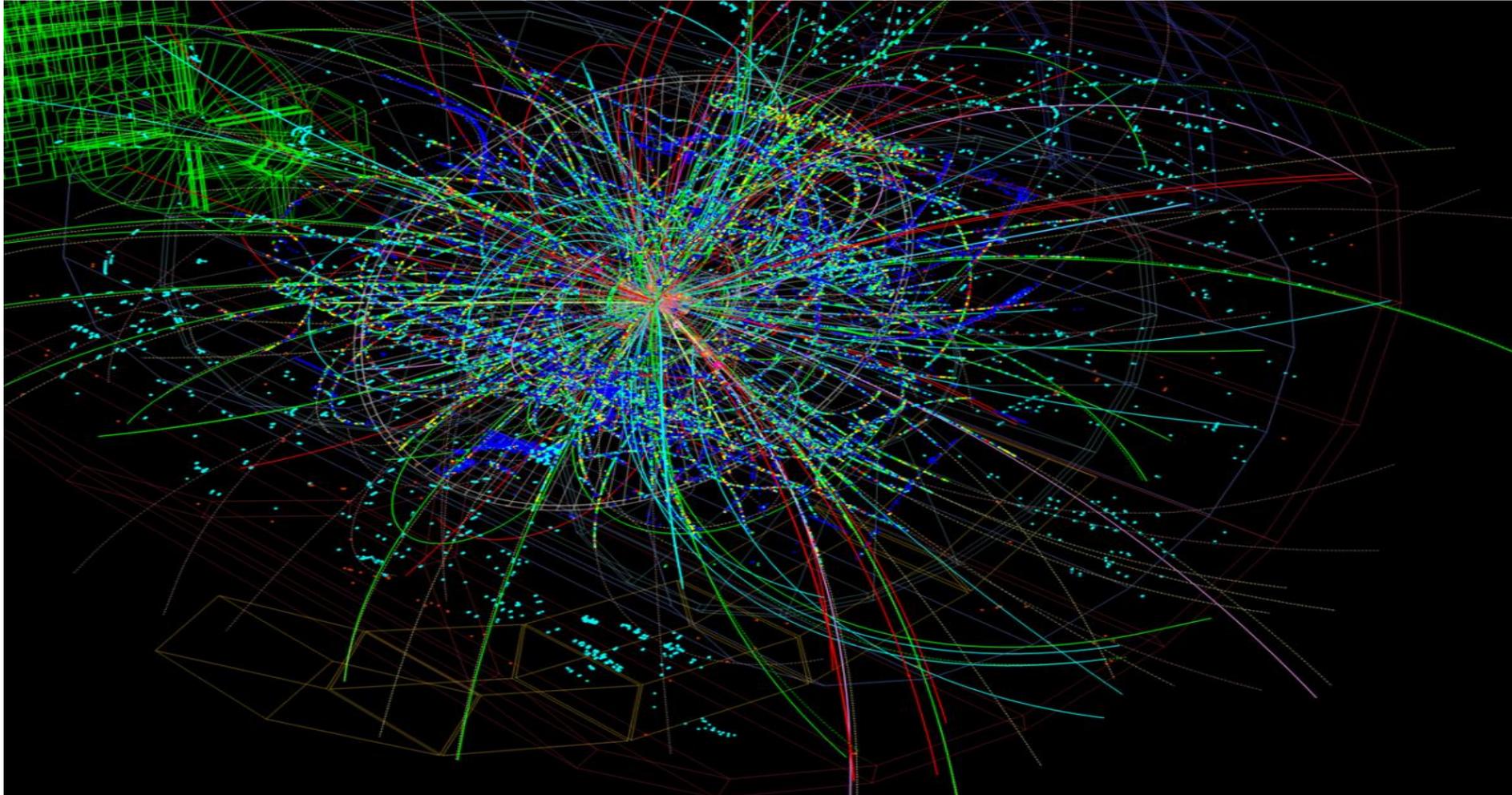
Early 20th Century



Late 20th Century



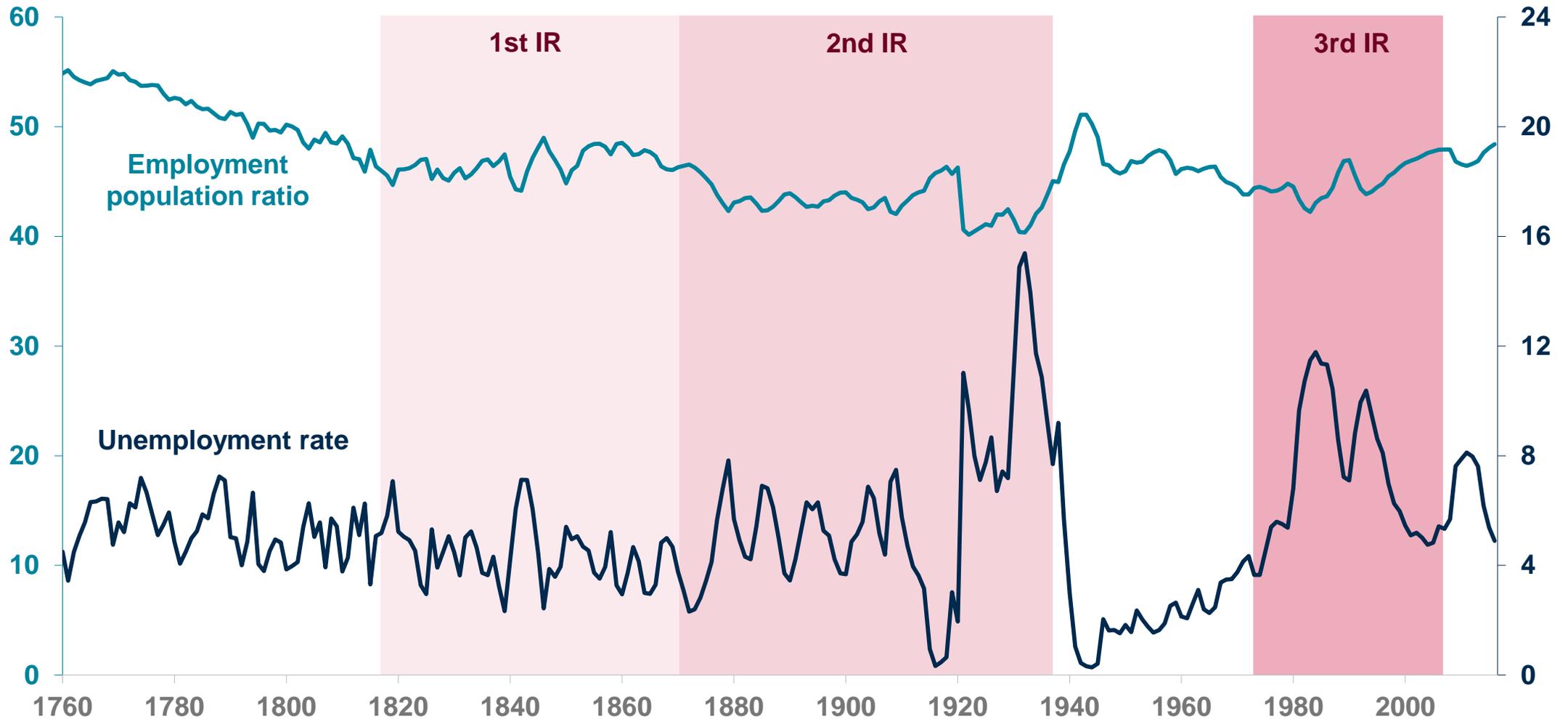
21st Century



Little evidence of technological unemployment over long term

Employment population ratio
(per cent)

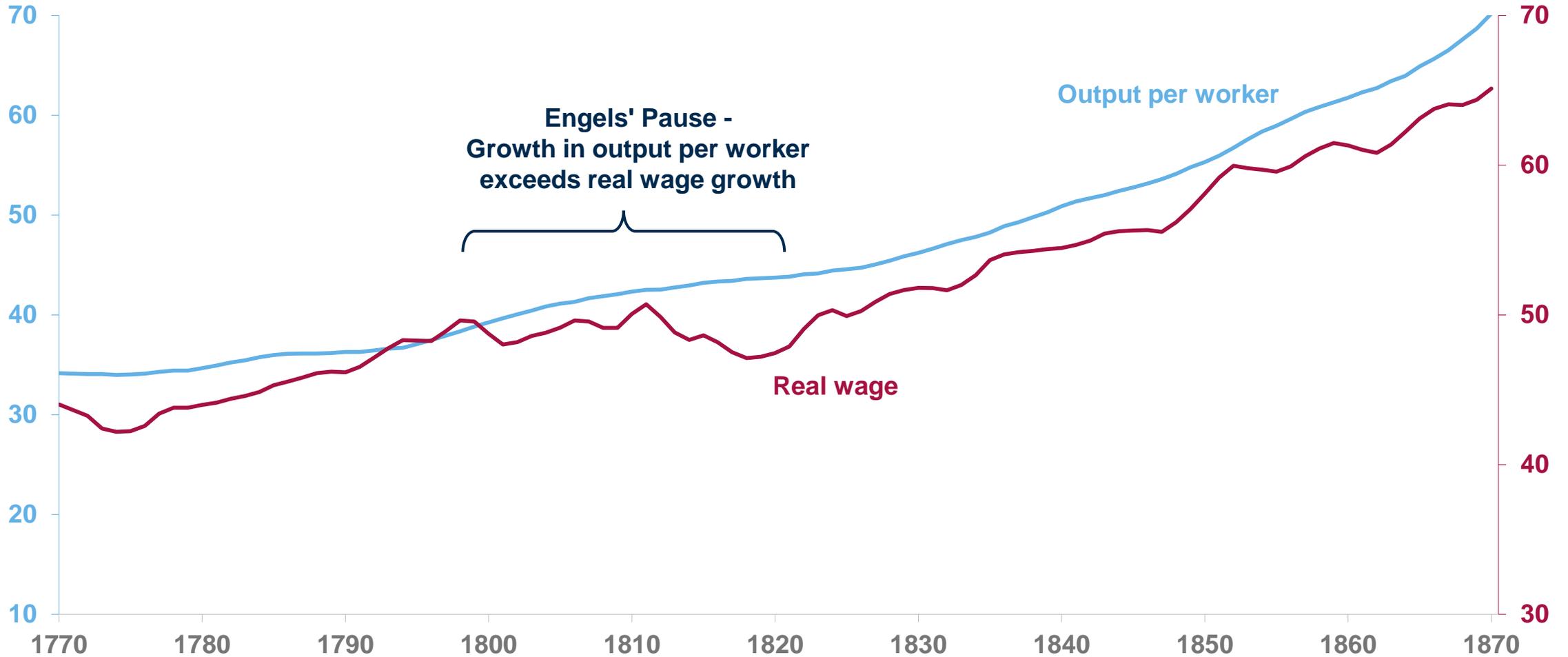
Unemployment rate
(per cent)



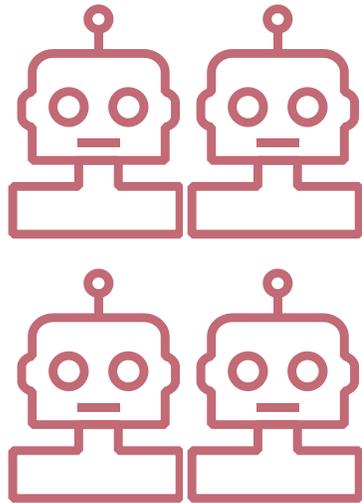
Pickup in real wages lagged productivity during the 1st IR

Output per worker
(Index: 1900 = 100)

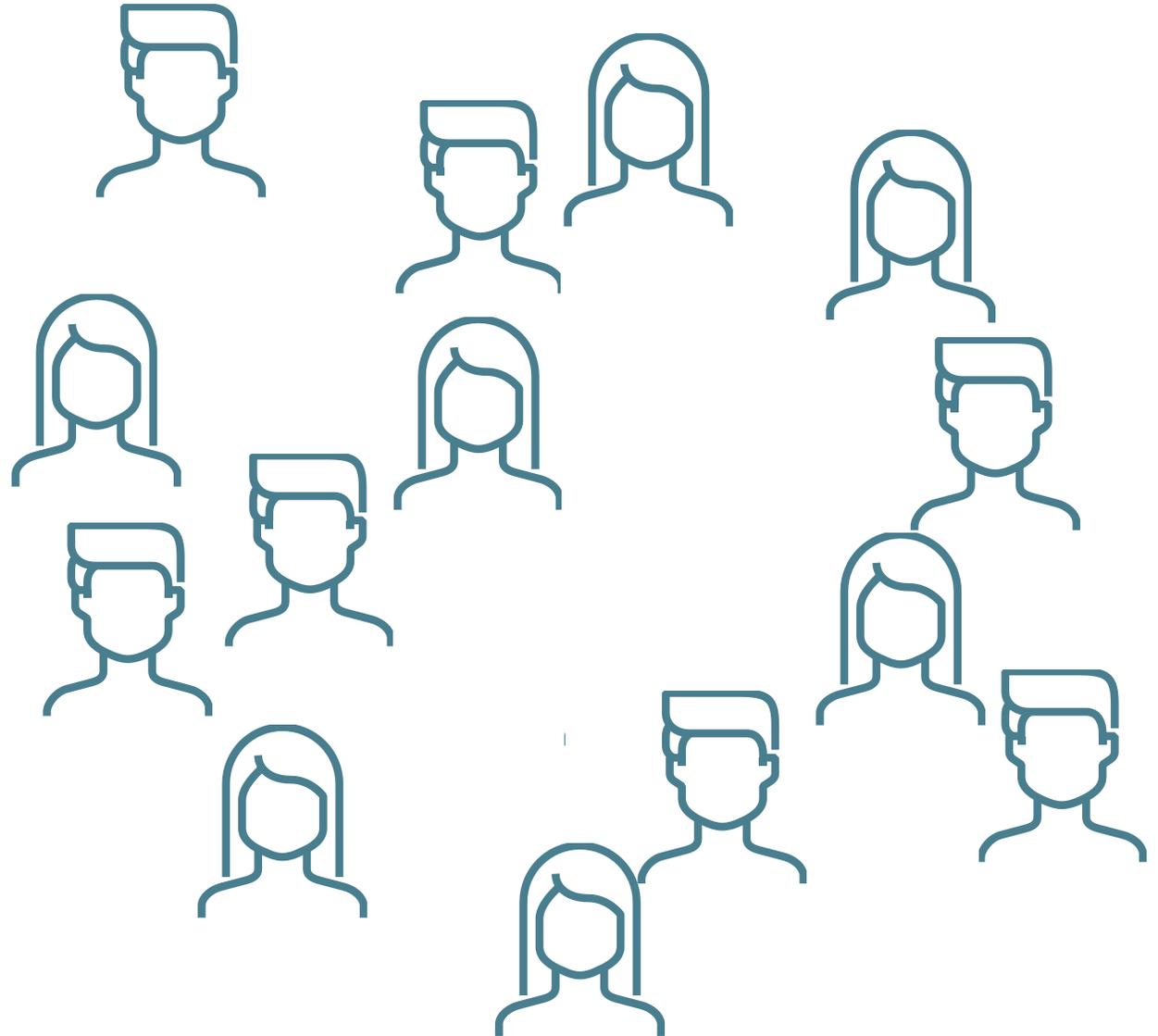
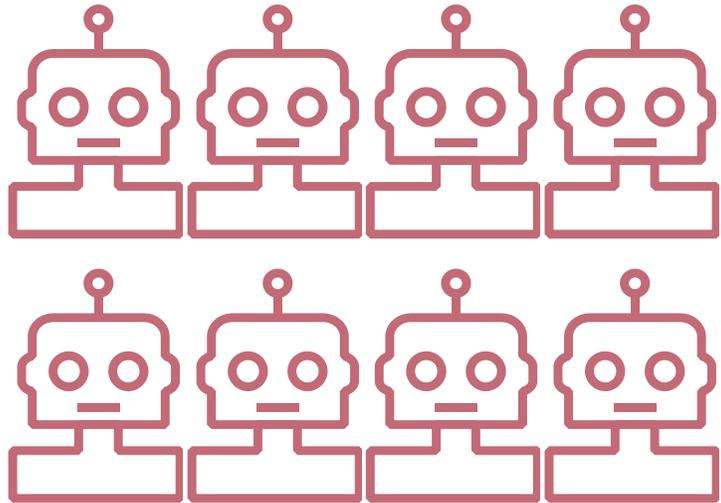
Real wage
(Index: 1900 = 100)



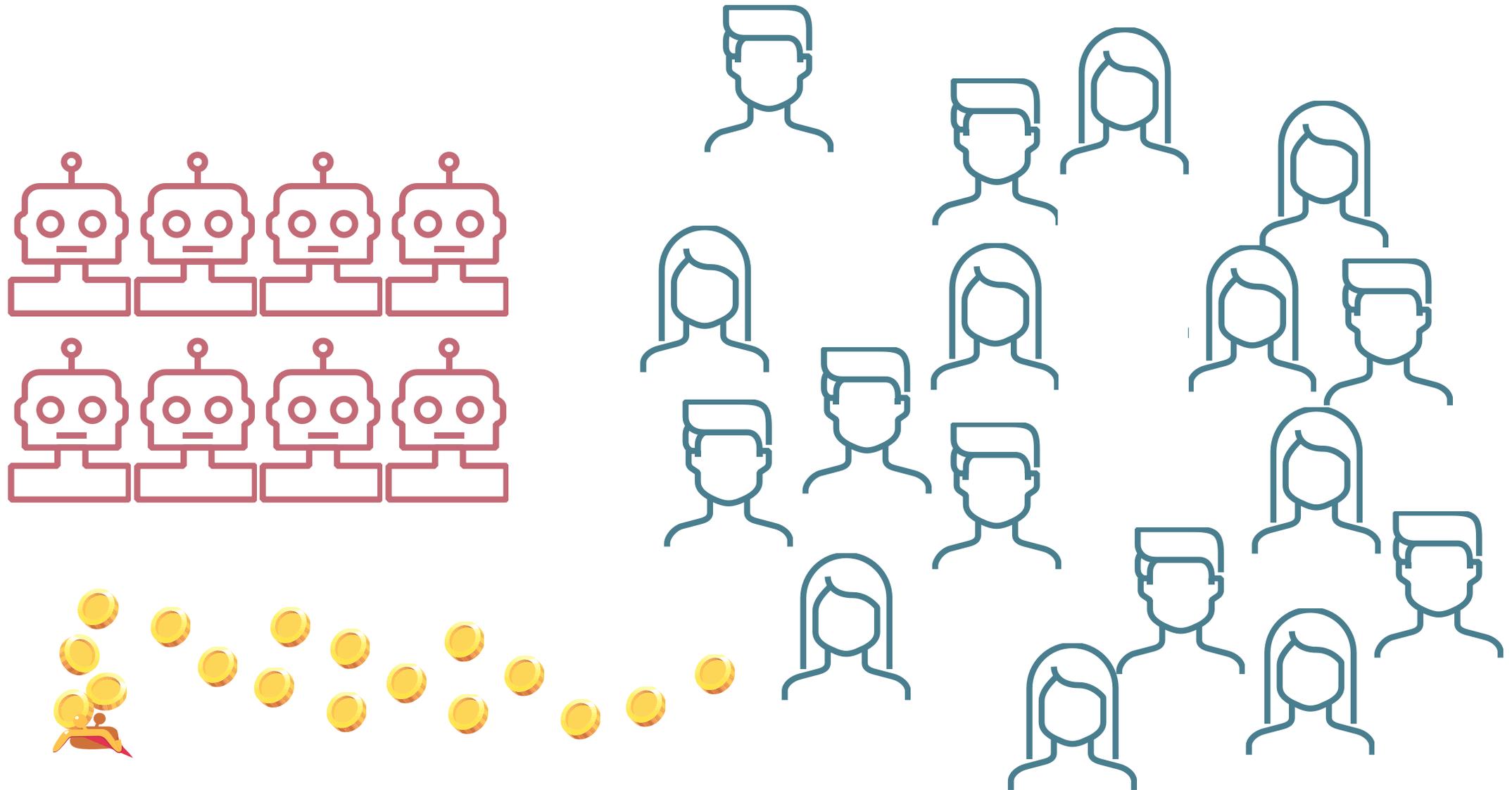
Technology impacts labour market through...



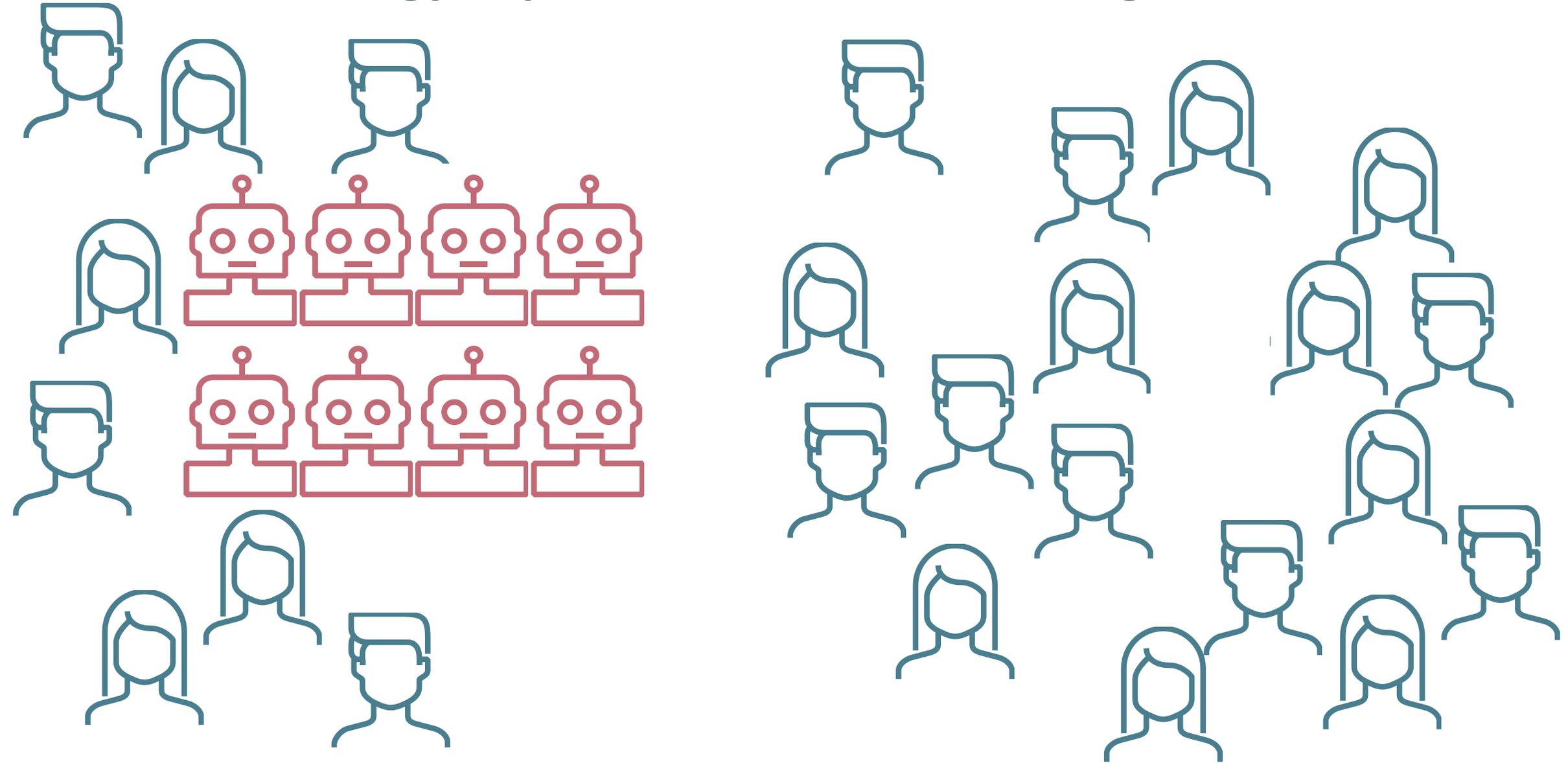
Technology impacts labour market through **destruction...**



Technology impacts labour market through productivity...



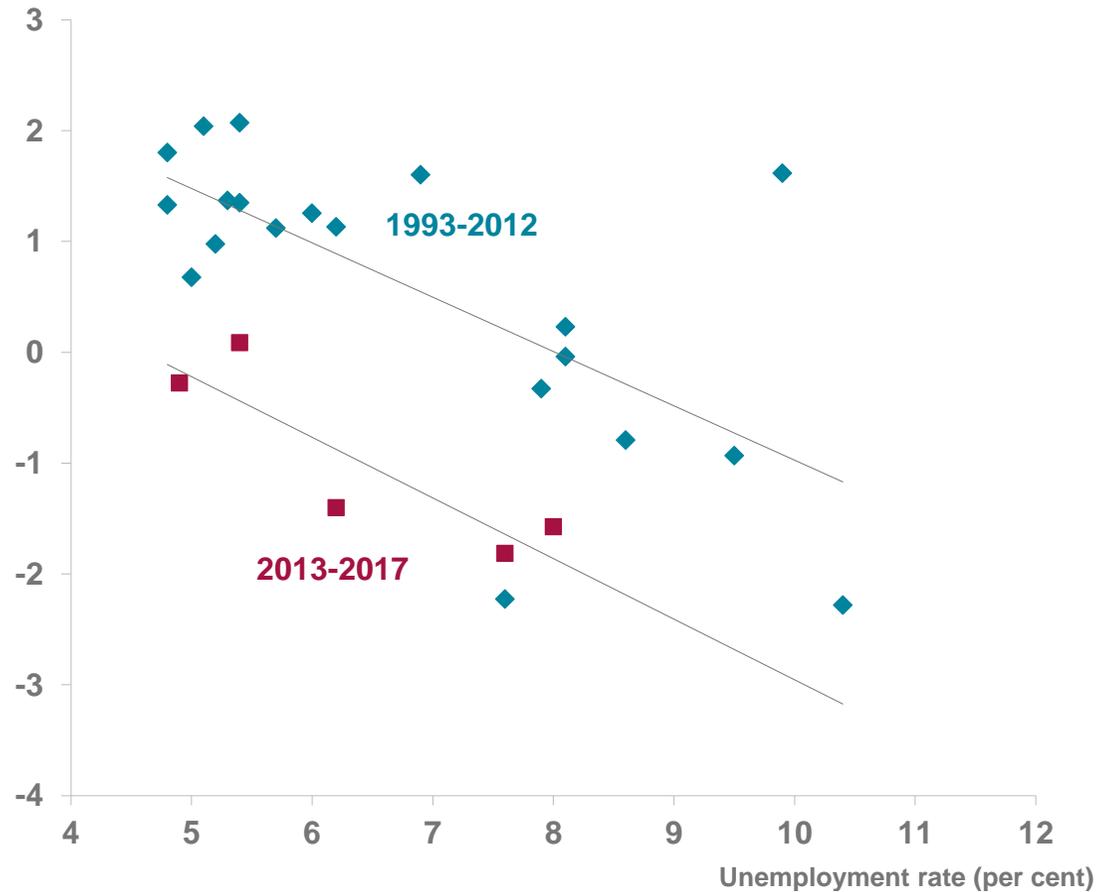
Technology impacts labour market through **creation**



Wage growth muted despite near-record employment

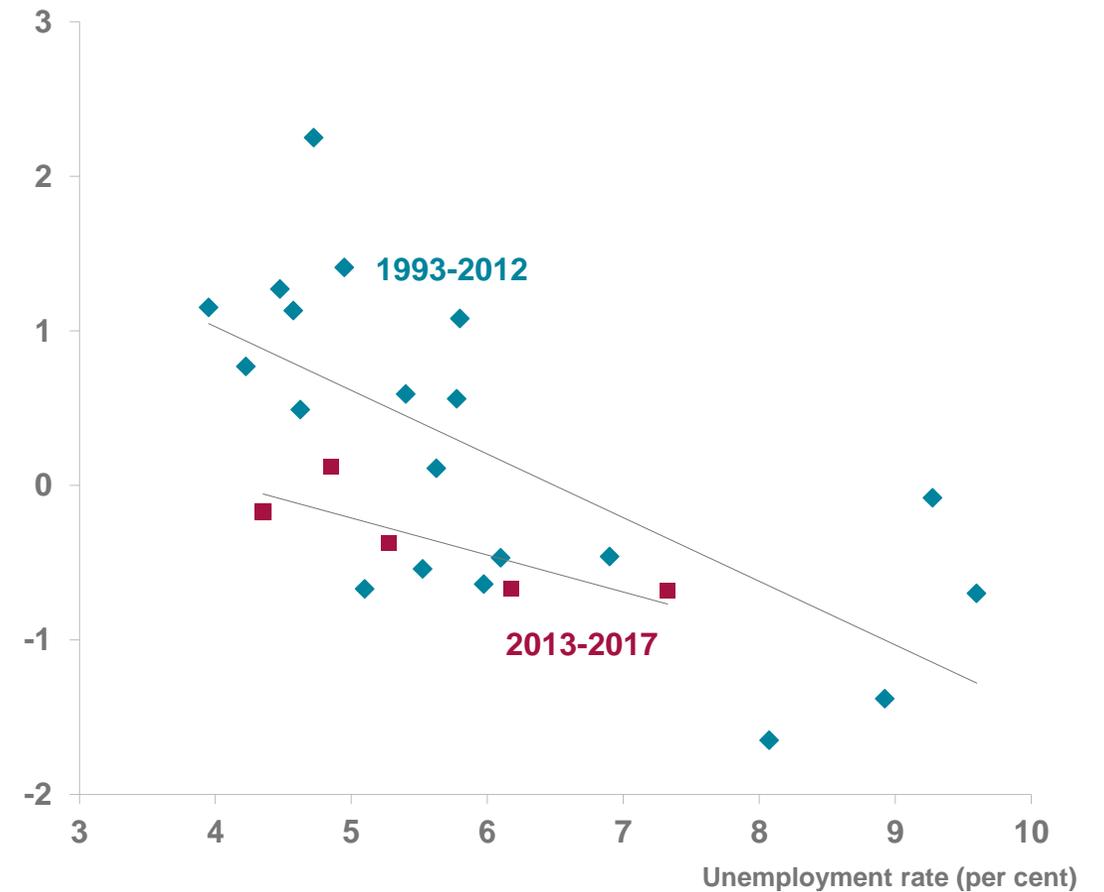
UK

Annual nominal wage growth less short-term inflation expectations (per cent)

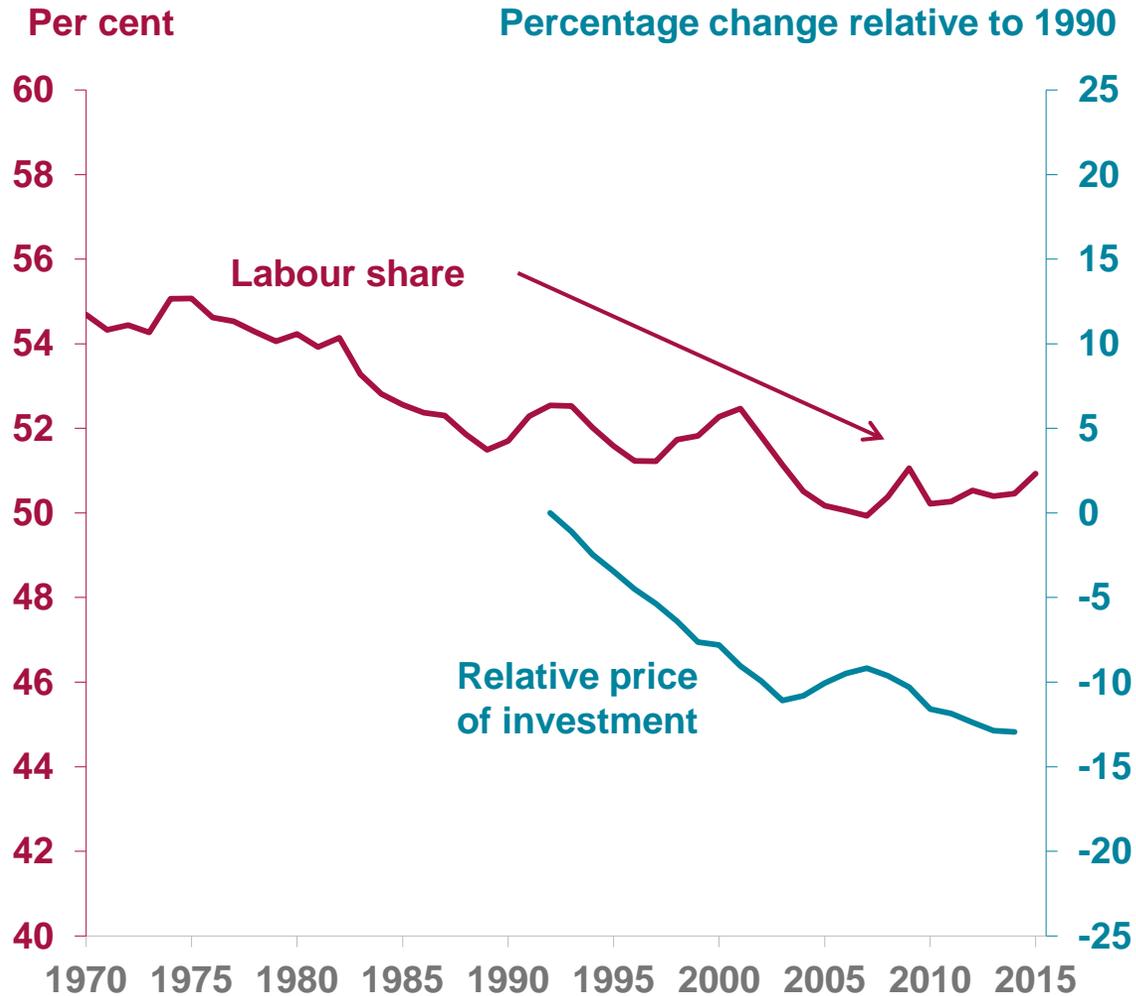


US

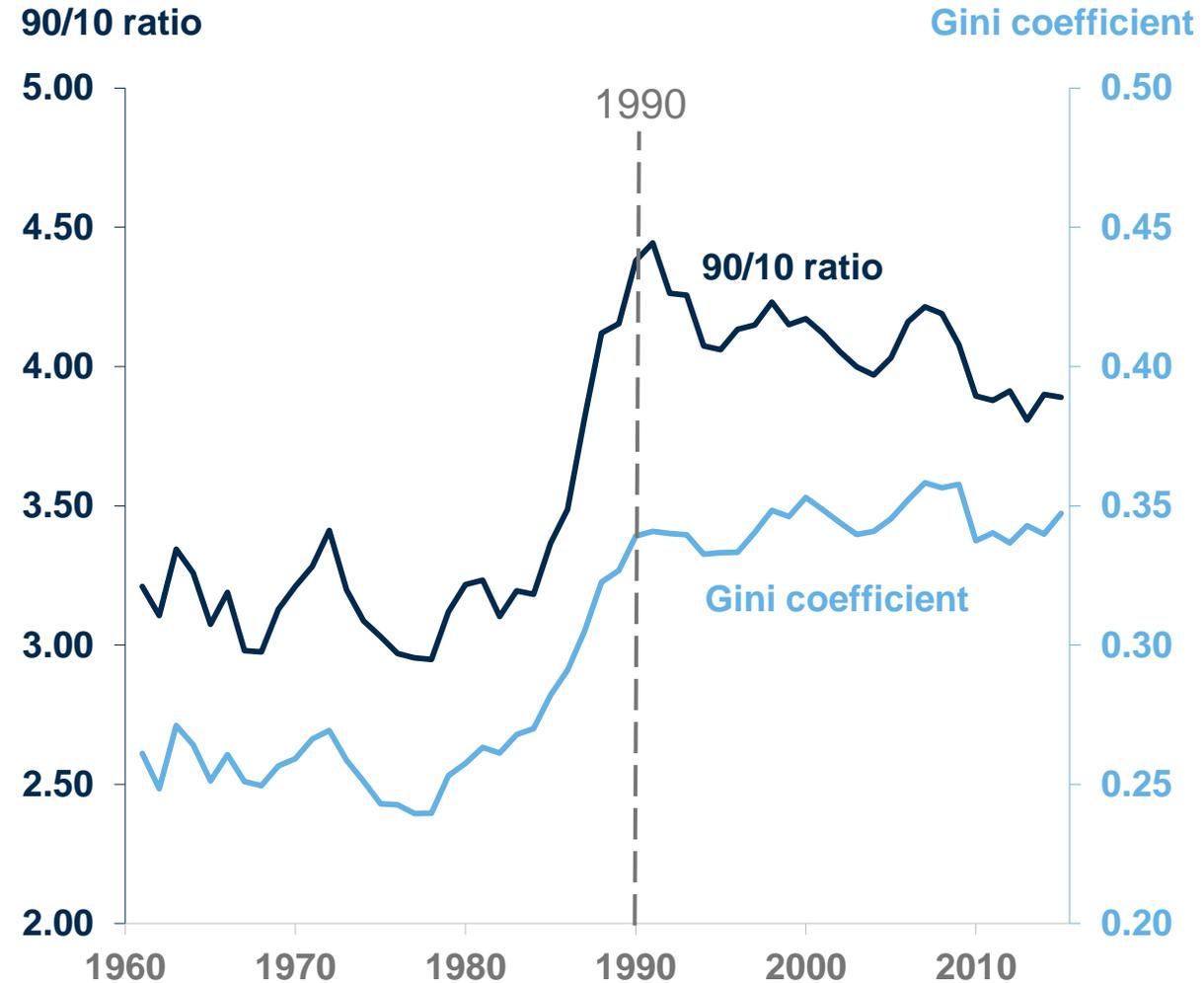
Annual nominal wage growth less short-term inflation expectations (per cent)



Technology driving labour share down globally

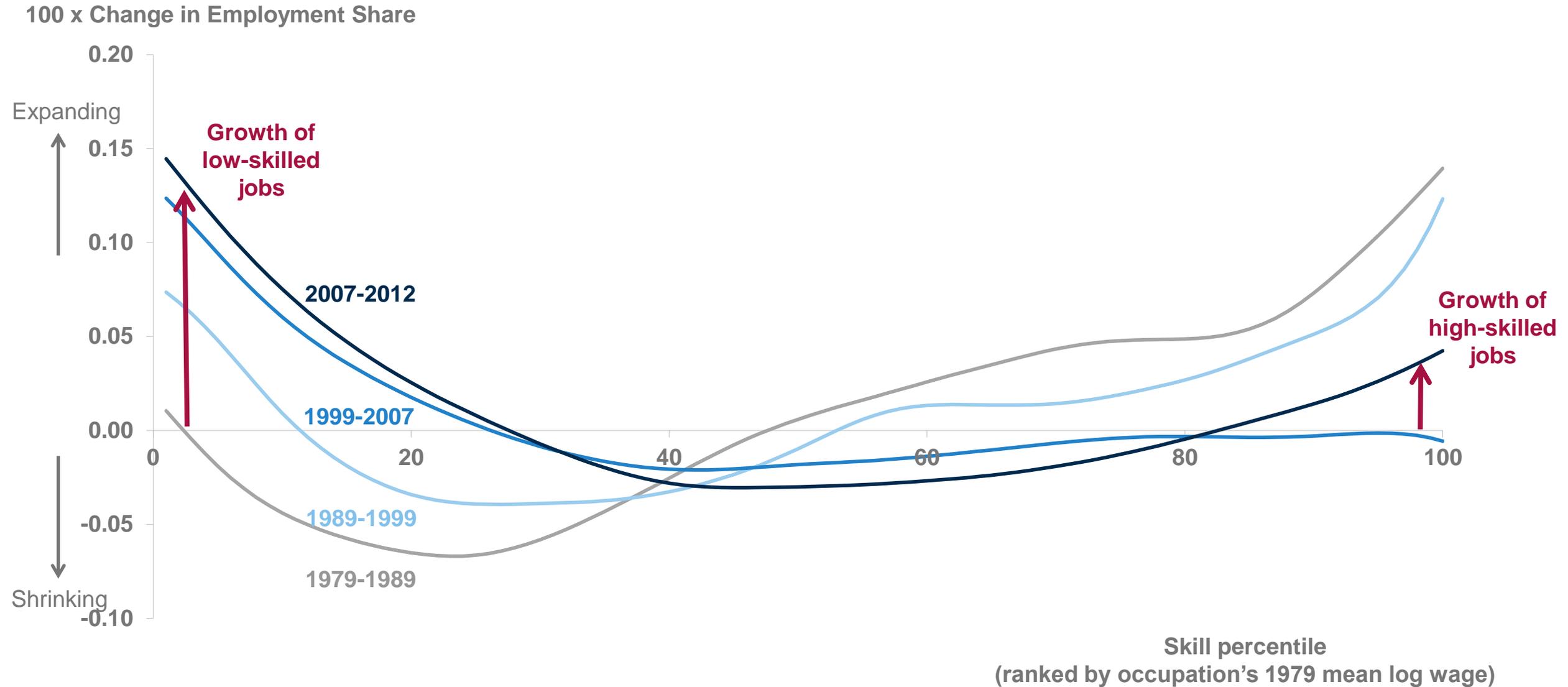


UK inequality high but stable

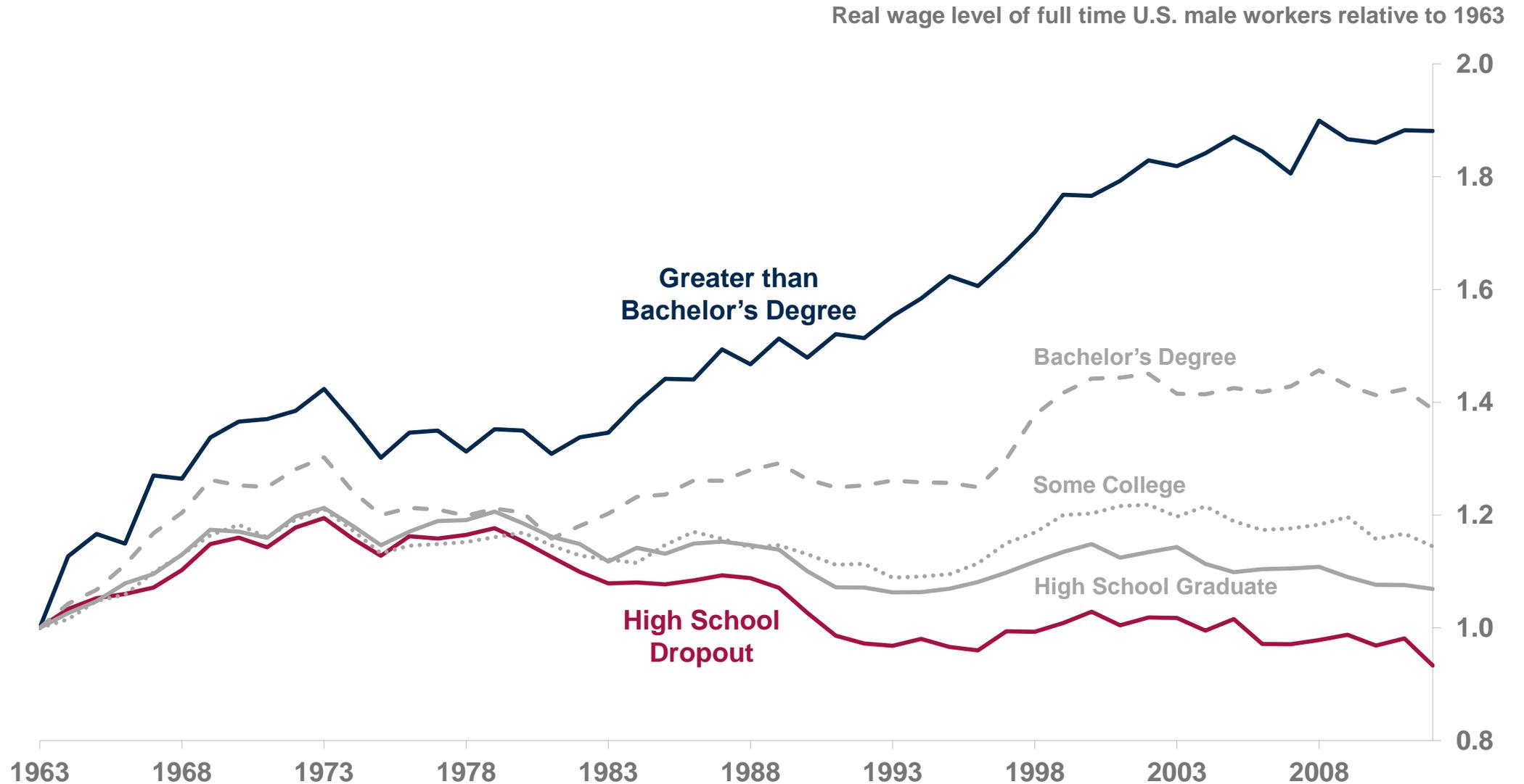


Source: IMF April 2017 WEO. Notes: the chart shows the labour share and relative price of investment across advanced economies.

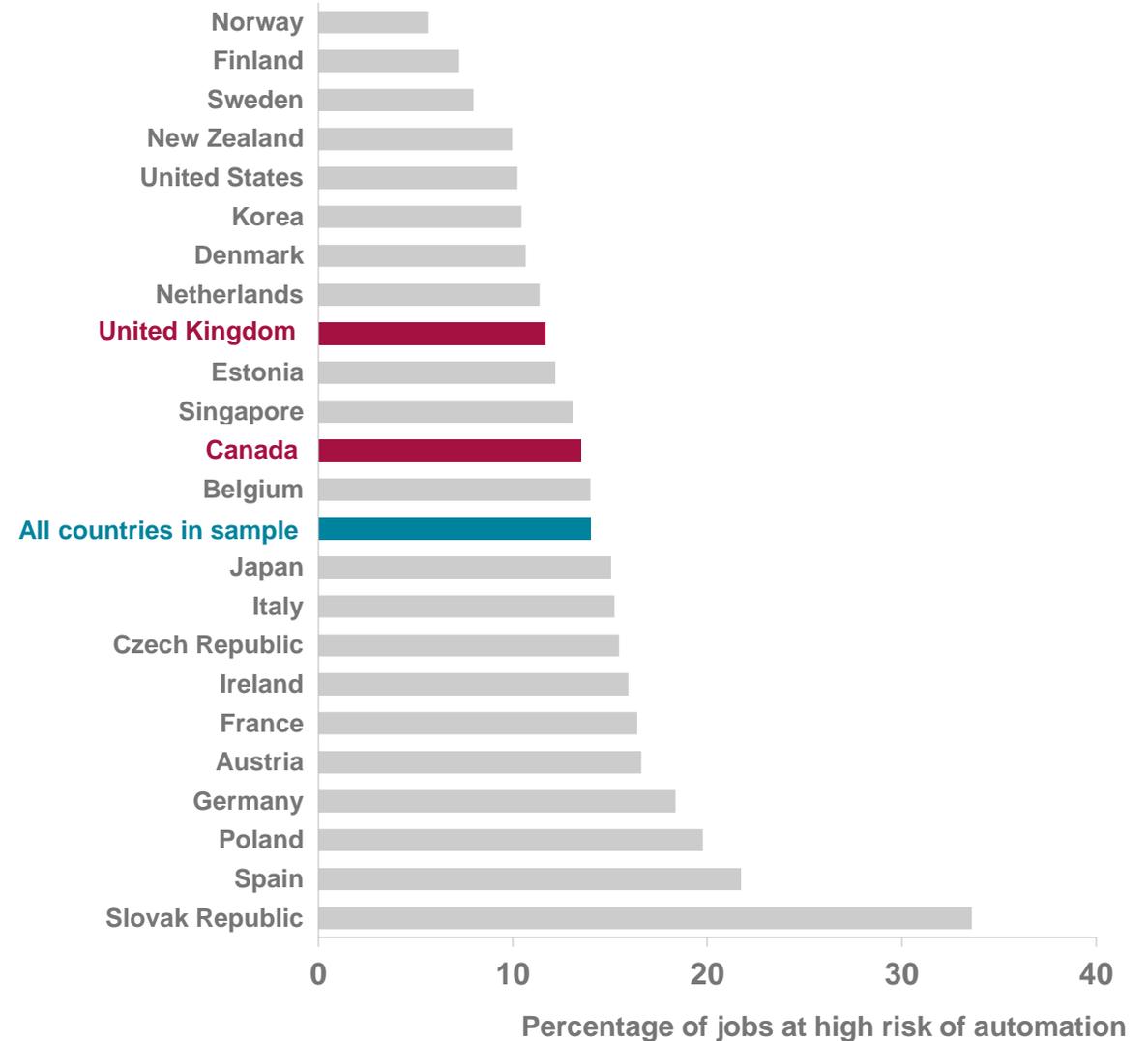
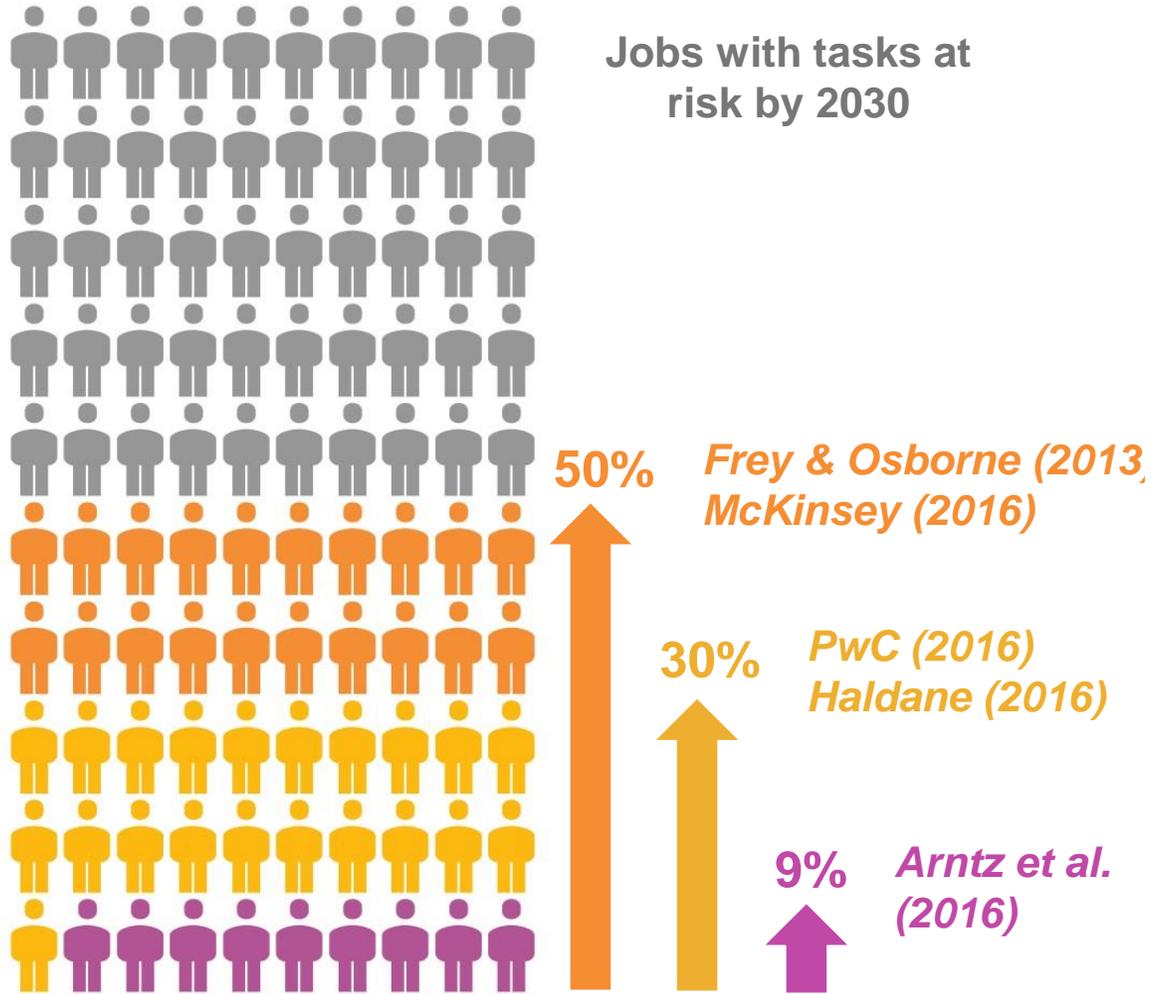
Technology polarising labour market



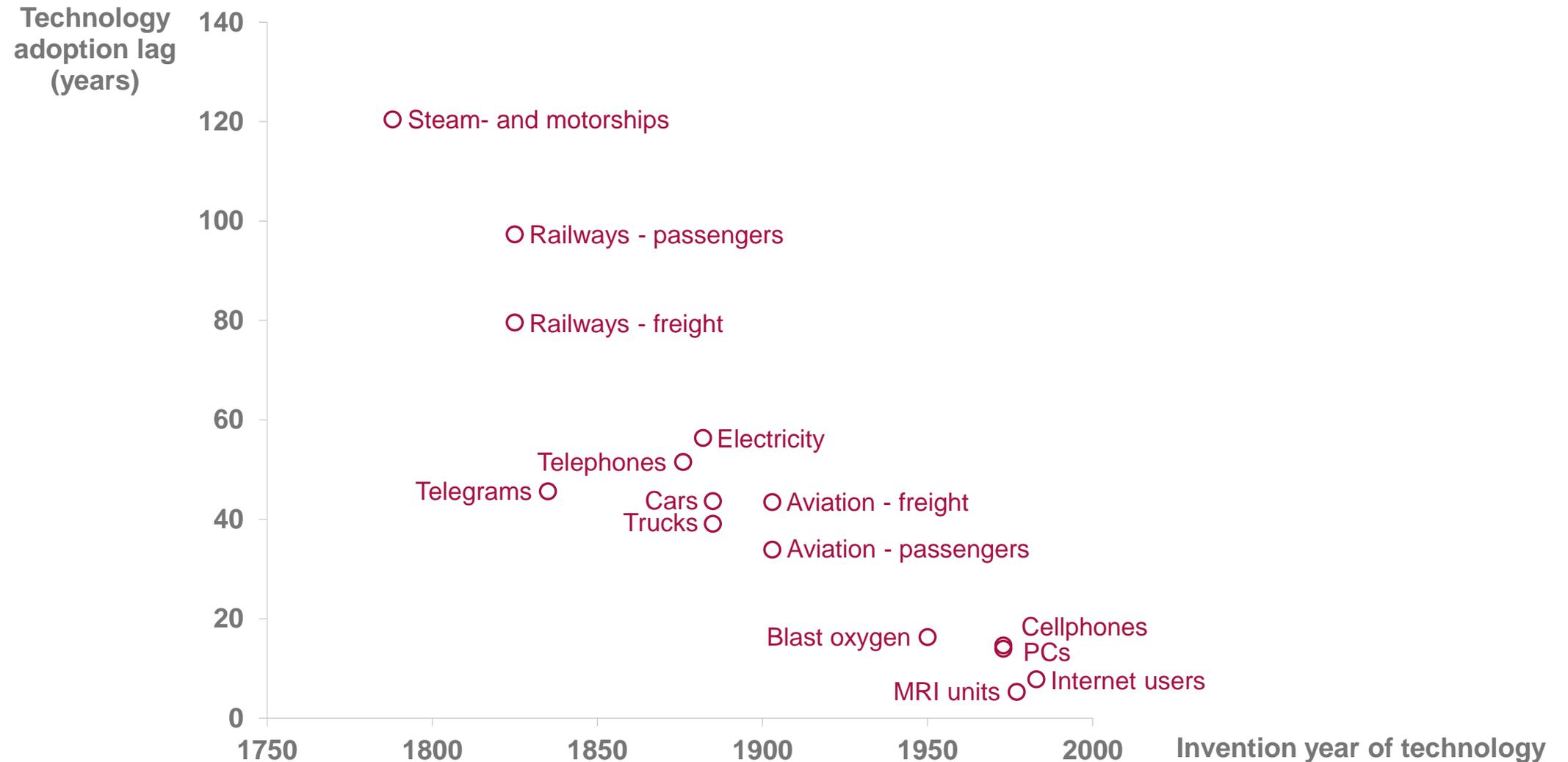
Technology polarising labour market



Jobs with tasks at risk of automation: huge range of estimates



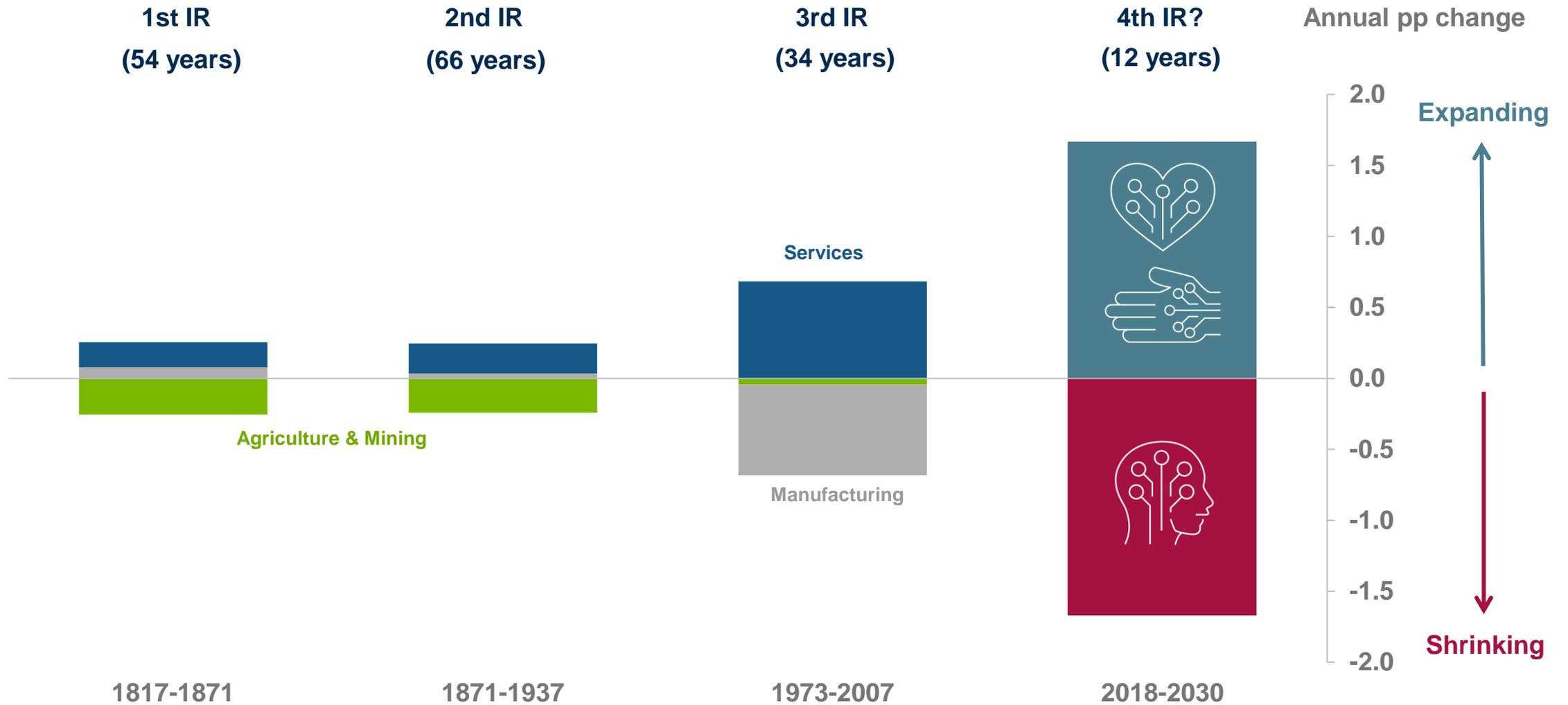
Technology adoption lags decreasing over time



Notes: Technology adoption lag is a mean estimated lag in cross-country technology diffusion.

Source: Comin, D and Hobijn, B (2010), 'An exploration of technology diffusion', *American Economic Review*, Vol. 100, No. 5, pp2031-59.

This time it's faster?



What has been done

| Institution | Effect | Examples |
|-----------------------------------|---|---|
| Enabling institutions | Transformed the skill base of workers | Primary, secondary, tertiary and technical education |
| New insurance institutions | Supported those displaced | Unemployment insurance, universal healthcare, state pensions, child benefit |
| Labour market institutions | Influenced provisions and shared the surplus | Friendly Societies, Trade Unions, Co-operatives, minimum wages |
| Employers | Created environments to help employees thrive | “Model Villages” (providing housing, schooling and recreation), higher pay (Ford’s \$5 initiative), occupational pensions |

What could be done

First:

- Assess and address the skills gap

Then:

- Reduce frictions to applying new technologies
- Deepen Productivity and Creation effects
- Adapt all elements of market ecosystem

Business

- Identify skills mismatches and adopt anticipatory talent management strategies
- More effective workforce training, as skill set of existing employees is rate limiting factor of technology adoption
- Corporate re-training programmes for workers to be retained by company and returned to workforce
- Providers of general purpose technologies explore opportunities to maximise job-creating, augmented intelligence

Labour market institutions

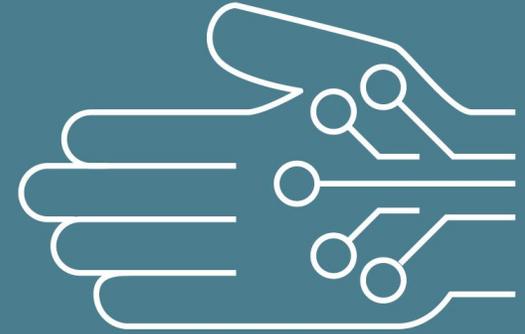
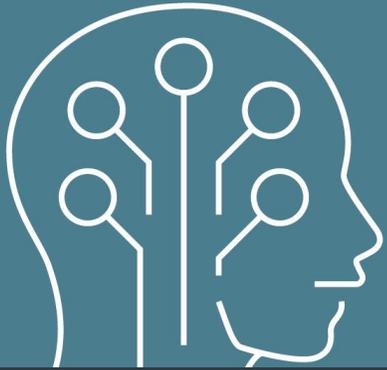
- Balance labour mobility with appropriate protections of workers in new, non-standard jobs
- Taylor Review of modern working practices suggests people working for platform-based companies be classed as dependent contractors
- Embrace technology-enabled solutions to improve matching and bridge skills gaps
- Enhance benefits and data portability (including reputational histories of dependent contractors)
- Equalise incentives for human capital and physical investment

Enabling institutions

- Successive IRs developed primary, secondary and tertiary education
- Could 4IR lead to quaternary education?
 - Institutionalise re-training in mid-career
 - Integrated with social welfare system
- Universal support schemes for retraining
 - The UK's Flexible Learning Fund
 - Singapore's SkillsFuture programme

Financial system

- New payment solutions for distributed commerce and real-time P2P transactions
- More effective, platform-based finance for SMEs
- Data-based financing for intangibles
- More efficient cross border transactions and trade finance through better payments plumbing and robust digital IDs
- Expand impact investing to build social capital consistent with new labour market



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