Man against machine: Does technology steal our jobs?

The Future Of Work

Chief Economist Øystein Dørum, NHO
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Becoming superfluous, all of us?
50% of all jobs may be automated away, according to Frey & Osborne

Automatization not new. Stagnant world pre IR#1

Technology gave us growth, welfare, a larger population
The machines did not take our jobs

*Lump of labour*-fallacy. Substitution vs income effect: Higher income/demand

**Chart 13:** Labour productivity and real wages, since 1750

**Chart 14:** Global participation in education, since 1870
...and we need the machines as much as before
Technology may counter effects of ageing. Opposite challenge in the «front»

**Advanced nations: Population**
G7+other EU+Norway+Switzerland. Millions*

![Graph of population growth and working age share](graph.png)

*) Accumulated change since 19
Source: Oxford Econometrics/Thomson Datastream/NHO
But restructuring creates (relative) winners & losers
IR#1 => more unskilled, IR#2 «hollowing out» (but deflation raised real wages)

*Chart 19: Share of unskilled workers in the UK, 1550-1849*

*Chart 20: Employment shares in US manufacturing, 1850-1910*

Source: de Pleijt and Weisdorf (2014)

Source: Katz and Margo (2013)
...like now. But something’s may be different
(i) New tasks, (ii) faster?, (iii) weightless?, (iv) transnational?

**Think**
United States employment, by type of work, m

- Non-routine cognitive
- Routine cognitive
- Routine manual
- Non-routine manual

**Share of employment by wage**
Change 1993-2006 in percentage points

- EU
- Germany
- UK
- Denmark
- Sweden
- Finland
- Norway

- Low wage
- Middle
- High

**Years to get 50 million users**

- Telephone: 75,0
- Radio: 38,0
- TV: 13,0
- Internet: 4,0
- Facebook: 3,5
- Angry Birds: 0,1

Sources:
- Maarten Goos, Alan Manning og Anna Salomons: Explaining Job Polarization in Europe, The Roles of Technology, Globalization and Institution (2010)/NHO
- Citi Digital Strategy Team
Two related challenges: Distribution...
Increased inequalities. 60% new jobs are NSW. IR#4 a ‘regressive tax’
...and inclusion – in broader terms
More NEETs. Reduced trust. Lower support for globalization

Norway: Male NEETs
Percent of all

Source: Statistisk sentralbyrå/NHO
(Uncertain! OECD says 10% of all jobs, not 50%) Has to look at tasks, not professions. And yet no rise in self-employment.

Source: Authors’ calculation based on the Survey of Adult Skills (PIAAC) (2012)

Source: Statistisk sentralbyrå, national accounts/NHO

Figure 3. Share of Workers with High Automatibility by OECD Countries

Norway: Self-employed
Percent of total employment
Pro...

• Technology is good: More from less. Ageing. Climate
• Can not isolate us: Small, open. What competitors do, so must we
• Automatization beneficial to high-cost countries
• May lower barriers of entry, and ease integration
• Who could foresee all the new (service)jobs now prevailing?
...or **contra? - Different this time?**

- Faster? Restructuring more difficult, mismatch => Lower demand
- Lighter? Profits not reinvested => Lower demand
- Global? Profits «inaccessible» => Lower demand
- Uneven competition? *Airbnb, Facebook, Uber*
- Enough on the outside already...
- Evil circle - inequality may cause underinvestment in human capital
Solutions?

• Isolation? Last resort for a small (and hitherto open) economy

• Andy Haldane’s three R’s:
  • *Relax*: If we can get more, for less work, that’s good
  • *Retrain*: Get all through basic schooling. Learn to restructure. And retrain, preferrably while working
  • *Redistribute*: The hard part, especially if profits are global
Thanks for listening!