The end of the Fordism and the emergence of a IV Industrial Revolution

Patterns and policy challenges

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A Blade Runner scenario?

- A blossoming debate on the effects of robotization upon both employment and inequality is now spurring among scholars in the economic discipline.

- Should we expect an age of medieval techno-feudalism governed by a plutocracy which owns machines and robots, which will enjoy high standard of living, together with the most part of the population deprived of the benefits of technology?
Some long term patterns which the "Fourth Industrial Revolution" is likely to strengthen

1. De-industrialization
2. Stagnant wages and divergence between productivity growth and wage growth
3. Declining labour share and related
4. Massive surge in corporate profits, especially financial ones
5. Declining net job creation
6. Soaring inequality
7. Polarization and growing number of part-time jobs (gig-economy)
The global wage-productivity gap

Labour productivity index

Wage index

Note: Wage growth is calculated as a weighted average of year-on-year growth in average monthly real wage in 36 economies (for a description of the methodology see Appendix 1). The base year is set in 1999 for reasons of data availability.

Real wage growth 1973-2012

Figure: Source: Economic Policy Institute

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Real wage growth 2007-2012

Figure: Source: Economic Policy Institute
Decline of manufacturing shares
Decline of labour compensation shares
Declining median income

Source: US. Bureau of the Census
fred.stlouisfed.org
Surge of profits

Source: US. Bureau of Economic Analysis
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Declining labor force unionization rate

Union Membership in the United States, 1930-2010

- % of employed workers
- % of wage and salary workers
Declining labor force unionization rate

**Figure:** The beneficial effects of unionization - Freeman, 1980, JOLE

Manufacturing Sector

Nonunion

Union

Nonmanufacturing Sector

Nonunion

Union

Log (Hourly Pay)
Declining Job creation rate
Jobless recovery

Unemployment Rates after Recent Recessions

- 1973-75
- 1991-92
- 1990-91
- 2001
- Current
Polarization

Figure 3: Percent Change in Employment Shares by Occupation Group

- Non-Routine Cognitive: 29% to 39%
  - 1981-1991: 8.6%
  - 1991-2001: 10.6%
  - 2001-2011: 9.2%

- Routine: 58% to 44%
  - 1981-1991: -5.6%
  - 1991-2001: -6.6%
  - 2001-2011: -11.0%

- Non-Routine Manual: 13% to 17%
  - 1981-1991: 0.9%
  - 1991-2001: 4.6%
  - 2001-2011: 16.1%
Matching or mismatching between three subsystems

1. The system of technologies
2. The economic machine
3. The system of social relations and institutions
The main question

The emergence of a new techno-economic paradigm?

The massive introduction of robotized work certainly characterizes the industrial sectors, with robotic arms able to substitute for repetitive and routinized activities.

But, artificial intelligence, algorithms and software developments become increasingly relevant also in the service sectors, which nowadays employs the largest labour share.

As a direct consequence, robotization and AI do not represent a threat only for blue-collars workers, but for the white-collars as well.
Coexistence of Old Taylorism and Digital Taylorism but without Fordism!

Two archetypes of labour relations:

- Old Taylorism: clear control and subordinate working activity, vertical industrial relation
- Digital Taylorism: soft-power, fictitious independence, myth of creativity and self-organization
Old Taylorism in the ICT era

Among the biggest worldwide employers and the first Chinese exporter.

- Massive migration from agricultural areas of young workers (born after 1980s)
- Factory-cum-dormitory: *Dormitory Labour Regime*
- Every factory building and dormitory has security checkpoints with guards standing by 24 hours a day
- All employees, whether they are going to the toilet or going to eat, must be checked
- Physical and verbal violence is systemic in Foxconn system. Workers are harassed and beaten up without serious cause
Digital Taylorism - The Uber-Foodora-Deliveroo archetype

- Based on cheap, generally educated workers
- Without a workplace
- Being “your own boss”
- Transfer of the entrepreneurial risk from firms to workers
- Managed not by people but by an algorithm that communicates with workers via smartphones
- Disappearance of both collective and even individual labour contracts
How the App changes the salary - UberEats

- Started paying £20 an hour
- Then it moved to £3.30 a delivery plus £1 a mile, minus a 25 per cent “Uber service fee”, plus a £5 “trip reward”
- Then the “trip reward” had been cut to £4 for weekday lunch and weekend dinner times, and to £3 for weekday dinner and weekend lunch times.
When your boss is an algorithm? Source FT

Algorithmic management - Control

How to instruct, track and evaluate a crowd of casual workers you do not employ, so they deliver a responsive, seamless, standardised service.

- monitoring of the workers
- sending productivity evaluation messages (time to accept orders, time to deliver, travel time to restaurant, travel to customers, late orders)
- but... drivers can’t be deemed employees because they have no obligation at all to log on to the app (Uber).
What to do?

- Be there also on the production side (see the German Program on Industry 4.0)
- Prevent de-industrialization
- Major mission-oriented programs
- Income and working hours redistributions
The bottom line

We are at the cross road between a *Blade Runner Scenario* and Keynes’s vision (*Economic Possibilities for our Grandchildren, 1930*)

Public policies will make the difference