Work: the past, the present, and the future

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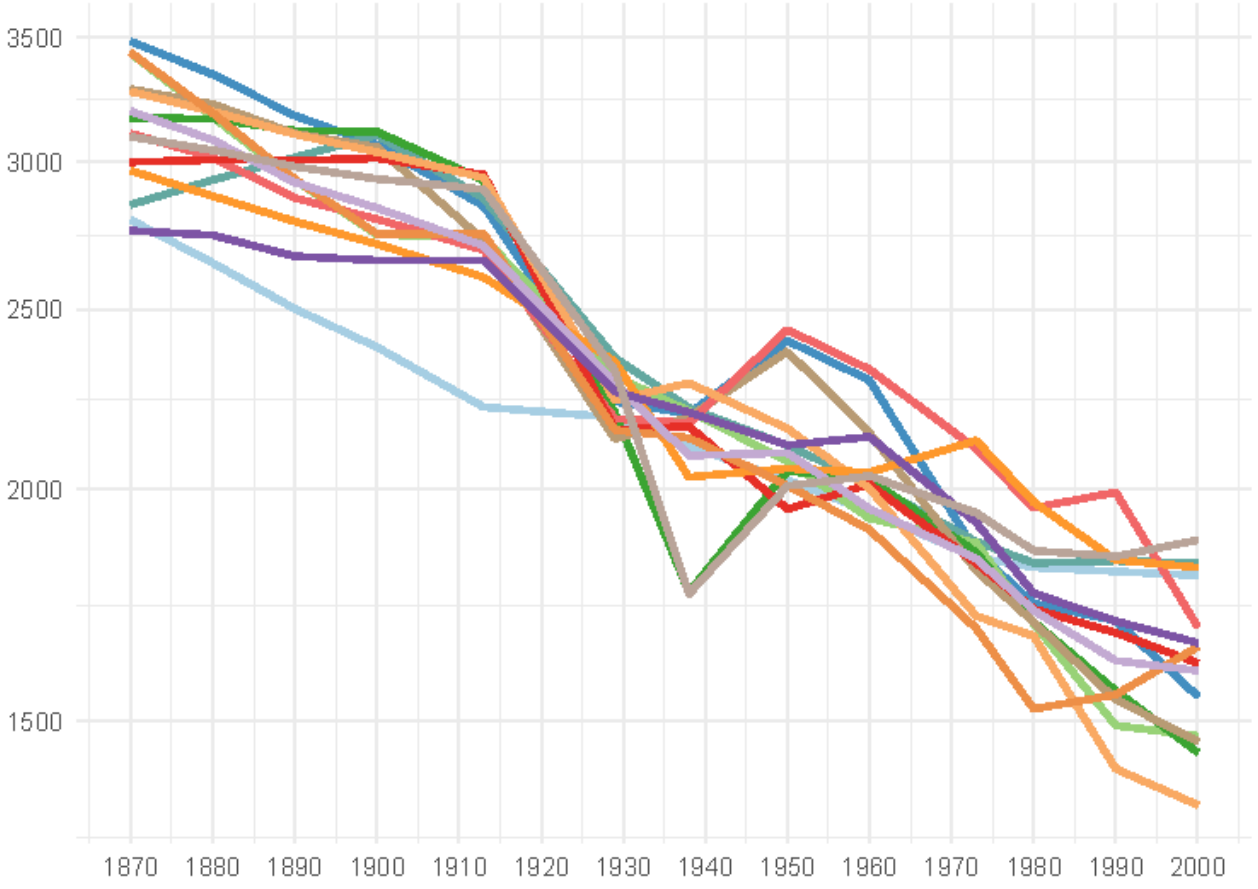
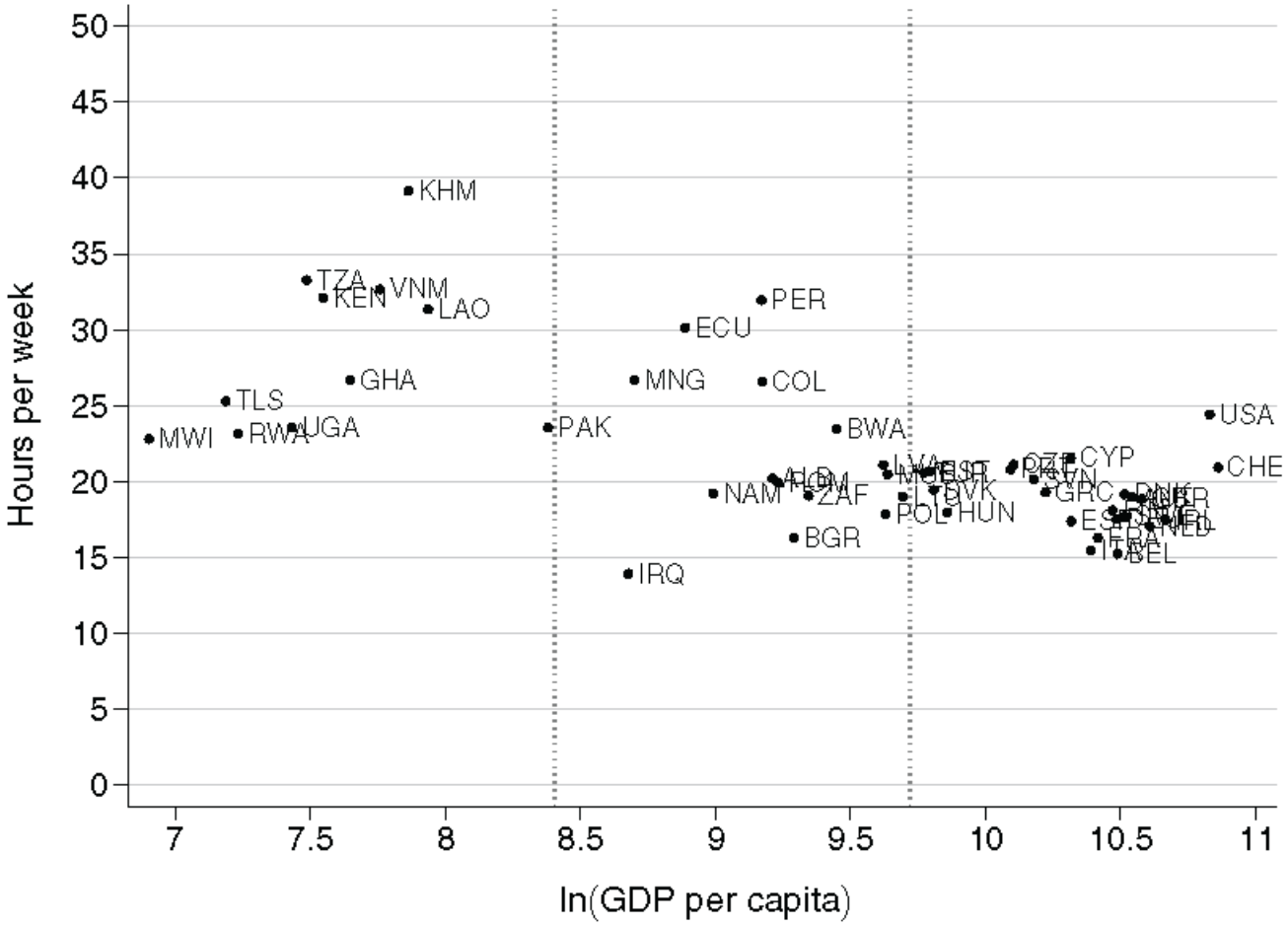
Outline

- International and historical outlook
- Interpretation from an economics perspective
- Implications for policy
- Implications for the future



Hours per capita in developed countries; log scale



Hours per capita in a broad cross-section of countries

Summary

- Across countries, hours worked (per capita) falls with income
- Over time – within each country – hours fall as income grows
- Quantitatively: for 2% income growth (real wage, or productivity, growth), hours fall by a little less than 0.5%
- Small, but adds up – clearly visible across countries at different levels of development and over long time periods

Economic interpretation

- In the long run, hours worked are determined by labor supply – not by labor demand
  - It's about how much people want to work
  - It's not about the availability of jobs: the economy "scales"
- Labor supply: with higher wages, we want to work (slightly) less
  - The "substitution effect" (incentives) makes us want to work more
  - The "income effect" from high wages makes us not need to work more, as we are richer – and we can afford some more free time
  - Net effect: the income effect is stronger than the substitution effect!
- So: low hours worked hours does not have to indicate that the economy is malfunctioning!

Sound strange?

- Yes, because in a ”real situation”, new technology can eliminate jobs – remains true since Industrial Revolution
- But these are short-run effects: new technology is an example of structural change, taking away some jobs…
- … but new ones are always created – and how many, eventually, is determined by how much we want to work
- Thus, new technology causes change in the labor market:
  - Many’s skills become obsolete/superfluous – some also lose jobs
  - Though others’ skills are in higher demand
  - Over time, new jobs appear in response to workers’ demands – though what kinds of jobs is always hard to predict

The challenges

- New technology often creates unemployment, and higher wage inequality too, and with that social tension.
- Downward pressure on wages for those with less relevant skills – if prevented to fall: unemployment
- Unemployment and wage inequality may be hard to avoid in the short run. Wage inequality may persist for some time.
- Who wins and who loses? Who knows!
  - Significant uncertainty
  - Hard to know how to educate yourself/train workers beforehand

Challenges for the market economy

- Training increasingly important in a high-tech economy with continuous technical change. Do markets provide the right amount of training?
- Inherent difficulty: firms may not want to pay for training for a worker unless the knowledge is *firm-specific*. So: underprovision of *general* technology knowledge.
- This is one reason for government-run education. But with fast technology growth learning may have to be life-long.
- May cause a trend toward life-long tenures at a given firm. Large firms, within which workers move according to skills and needs. Would help solve training problem.
- Sweden: can broad unions/employer associations help?

Challenges for policy

- It is hard to predict what skills will be needed
- Higher education has historically been an insurance against the uncertainty of skill demands…
- … but not entirely clear under AI/robotics, since not only ”routine jobs” can be replaced
- What can be done?
  - Flexicurity (Danish style): relatively unregulated labor market, accompanied by social security/insurance system so that workers dare to retrain, despite uncertainty – key for an efficient economy
  - Forward-looking educational system; easier said than done, but probably much to be improved
  - Government-sponsored retraining in general knowledge

The future

- Economists have no crystal ball allowing us to see how technology will develop, what jobs will look like, etc.
- For this, consult engineers, natural scientists, marketing people, … maybe they have answers?
- Economists can mostly offer general points about how people, firms, and markets behave, based on history
- Thus, the details of the policies, education efforts, etc. will have to be designed as we go along and experience the future…
- But the general policy points above should still be helpful.

Conclusions

- Human history tells us we are likely to want to work less and less the more productive we become – and this is what new technology does: it increases productivity
- However, under fast technological change we will keep experiencing tensions, because the fruits of the increased productivity do not fall on all: we will see unemployment, higher wage inequality; some will work more, some less
- These are important challenges
- Government policy: flexible labor market, social insurance, subsidized training in general knowledge, forward-looking education system
- Market evolution: life-long firm tenures?