Discussion of: "Trade, Technology and the Great Divergence"

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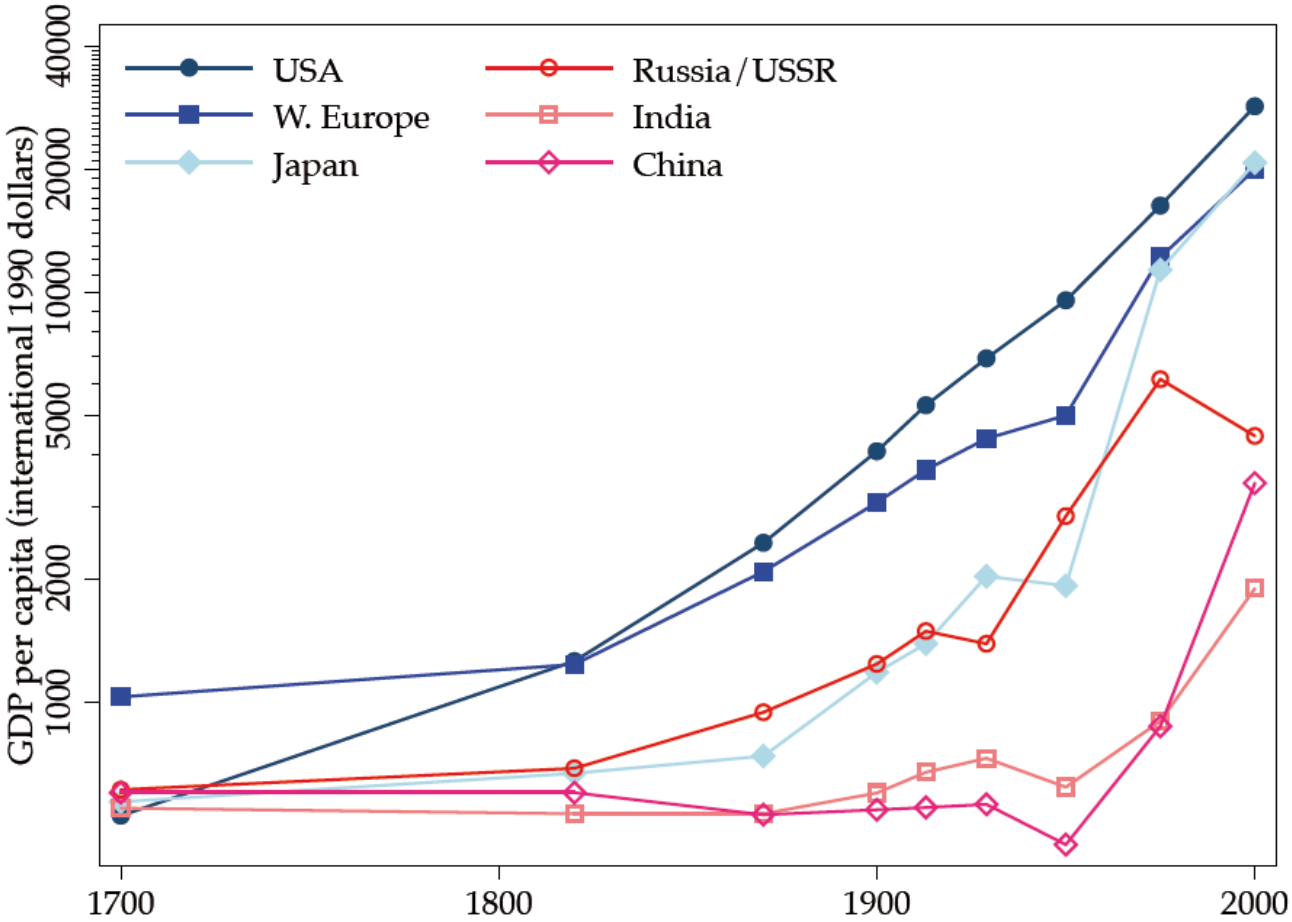
The Great Divergence



- why did North-South divergence occur during the late 1800s rather than at the outset of the Industrial Revolution?

This Paper

- interaction between directed technical change and trade explains the (slow) Great Divergence
- key assumptions
  - Directed Technical Change: local technologies depends on local conditions
  - HO trade, gradual fall in trade costs
- Industrial Revolution: exogenous increase in innovation capacity
- first stage: no trade & some convergence
  - UBTC, low skill premium, no demographic transition
- second stage: globalization & divergence
  - North specializes in skill-intensive products $\longrightarrow$ SBTC, rising skill premium $\longrightarrow$ demographic transition $\longrightarrow$ low fertility, growing human capital, high income
  - South specializes in low-skill products $\longrightarrow$ UBTC, low skill premium, high fertility, low income

General Comments

- great paper: important question, reasonable model and results
- skillful combination of existing mechanisms:
  - Galor & Mountford (2008)
    - ⋆ trade and divergence: South specializes in unskilled-intensive production $\longrightarrow$ no demographic transition $\longrightarrow$ divergence
  - Acemoglu (2003), Acemoglu & Zilibotti (2001)
    - ⋆ trade and SBTC: North-South trade increases the price of skill-intensive products in North $\longrightarrow$ SBTC
  - Bonfiglioli & Gancia (2008)
    - ⋆ trade and DTC: specialization $\longrightarrow$ "North-biased" technical change $\longrightarrow$ divergence
- main novelty:
  - exogenous technology in Galor & Mountford
  - no demographic transition in models of trade and DTC

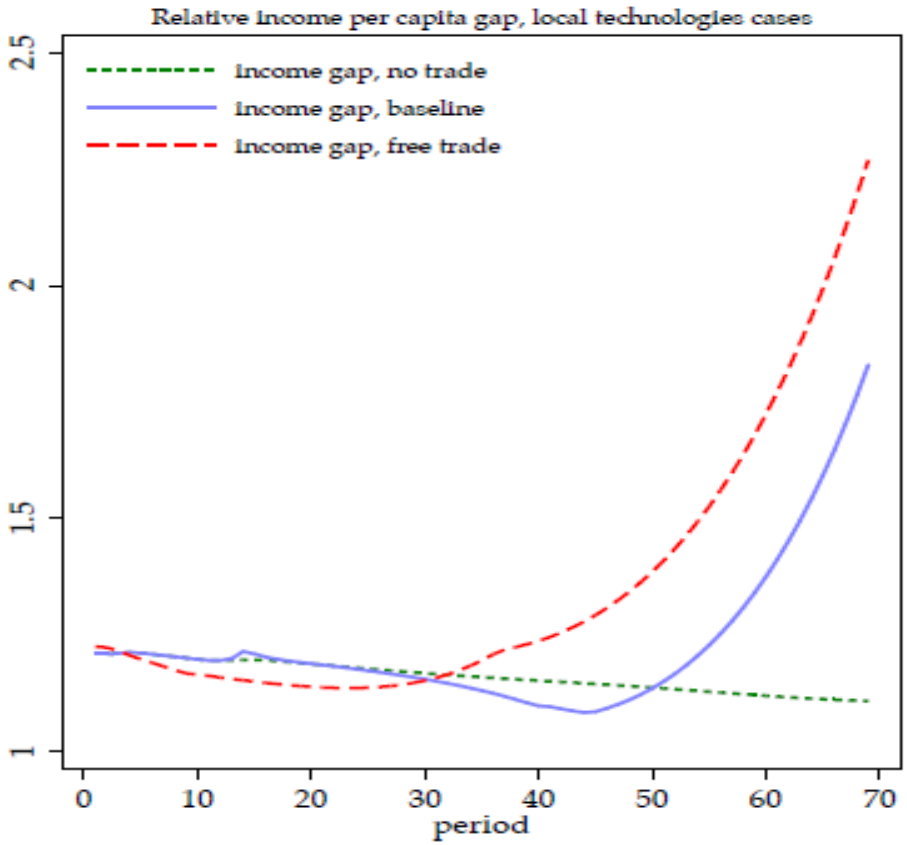
Demographic Transition

- demographic transition certainly important to explain divergence
  - but what explain the different demographic transition in North/South?
- this paper:
  - key role of trade $\longrightarrow$ higher (lower) skill premium in North (South)
  - yet, the skill premium is flat until mid-1900s in UK (Clark, 2005)
  - is the model consistent with data on skill premia?
- other explanations:
  - high productivity growth in North can trigger the demographic transition
    - ★ it lowers the opportunity cost of schooling even with a constant skill premium
  - institutional change: education laws
    - ★ nation building (Aghion, Jaravel, Persson & Rouzet 2014, Alesina & Reich, 2015)

Role of Trade

- North-South trade was small at the time
  - total world export: 1% of GDP in 1820, 4.6% in 1870 (Maddison)
  - export from China and India in 1870: 0.7%, 2.6% of GDP (Maddison)
- technological improvements did lower trade costs in the mid-1800s
  - but most of trade is regional, between cities, between cities and countryside
- this type of trade may have played an important role
  - Gancia, Ponzetto & Ventura (2016): in the 1800s better trade opportunity leads to political consolidation
    - ★ higher potential gains from trade make border more costly $\longrightarrow$ countries grow in size to enjoy larger domestic markets
    - ★ the growth of nation-states may have spurred investment in education

Gradual Trade vs Free Trade



- which is more realistic?
- any evidence on the initial phase of convergence?

Role of Technological Progress

- technological progress certainly important to explain divergence, but:
  - are North and South really innovating independently? most known innovations originate from the North (even now!)
  - with population expansion in the South, ever stronger incentive to improve technologies (scale effect)
- alternative views:
  - divergence can be explained by slow technology diffusion
  - lack of divergence initially because innovations spread slowly in the Western world too
- some modelling suggestions:
  - model costly (slow) technology diffusion as in Gancia, Mueller & Zilibotti (2013)
  - simplification: AK accumulation of resources (knowledge capital? similar to B) that are used to pay a per-period fix cost (instead of one-period monopoly profits)

Conclusion

- very interesting paper
- understanding the Industrial Revolution and the Great Divergence is still a major challenge
  1. why did modern economic grow started?
  2. why in some countries before others?
- the paper is about (2)
  - an improvement compared to existing theories
- yet, some more work needed to convince the reader
  - is the effect of trade on the direction of technological progress really crucial for explaining the facts?

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