

Discussion of:
"The Global Welfare Impact of China: Trade
Integration and Technological Change"

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Motivation: Samuelson Conjecture

- is productivity growth in China beneficial for the rest of the world?
- Samuelson (2004) conjecture:
 - ▶ two countries, US and China
 - ▶ Ricardian technology differences:
 - ★ US has a better technology in all sectors
 - ★ China has comparative advantage (CA) in some sectors
 - ▶ CA → Gains from Trade (GFT)
 - ▶ now give (offshore to?) China the US technology:
 - ★ CA disappears → the GFT in the US disappear → the US is worse off
- this paper:
 - ▶ evaluate this conjecture in a quantitative Ricardian model

This Paper

- extended Eaton & Kortum (2002) model of trade:
 - ▶ 75 countries
 - ▶ 2 factors, K and L
 - ▶ 19 manufacturing sectors + non-traded sector
 - ▶ transportation costs
- Ricardian technology differences across sectors
 - ▶ between-industry trade (BIT)
- technology dispersion within sectors
 - ▶ intra-industry trade (IIT)
- input-output linkages through intermediates
- the model is estimated by fitting trade flows and income data

Main Results

- two counterfactuals:
 - ① increase Chinese productivity by 14% in all sectors
 - ② increase Chinese average productivity by 14%, but remove CA relative to the technology frontier
- welfare in China: +11%
- welfare in OECD
 - ▶ balanced growth: +0.01%
 - ▶ unbalanced growth: +0.17%
- why?
 - ▶ with multiple countries and trade costs, Samuelson may be wrong
 - ▶ China's CA is similar to the world average
 - ▶ balanced growth in China keeps it similar to the typical country
 - ▶ unbalanced growth makes it more different

Comments

- a great paper:
 - ▶ very relevant question
 - ▶ state-of-the-art quantitative trade model
 - ▶ replicates the data well
 - ▶ obtain non-obvious results
 - ▶ provide analytic interpretations

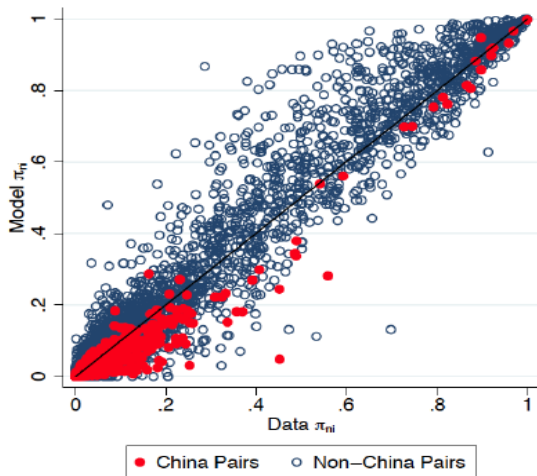
- some critical remarks:
 - 1 calibration
 - 2 interpreting the counterfactual
 - 3 interpreting the results

Calibration

- ① why is the change in productivity in China so small?
 - ▶ 1.32% per year growth rate
 - ▶ average GDP growth of 10% per year
- ② does the model replicates trade with China well?
 - ▶ Fielier (2011): Eaton & Kortum (2002) does a good job for OECD, not for developing countries
 - ▶ the model has a good fit on average
 - ▶ but seems to underpredict trade flows involving China
 - ▶ why not matching trade flows perfectly (as in Burstein & Vogel, 2012)?

Calibration: Bilateral Trade Flows

Figure 3. Benchmark Model vs. Data: π_{ni}^j for China and the Rest of the Sample



The Counterfactual

- effects are *small*, and *bigger* in the *unbalanced* scenario
- why so small?
 - ① volumes of trade are small
 - ★ in 2010, 2.7% of US consumption on “Made in China”
 - ★ only 1.2% is China-produced content
 - ② a small fraction of trade is due to Ricardian CA across sectors
 - ★ most of trade is IIT
 - ★ Costinot et al. (2012): the removal of Ricardian CA between OECD countries would only lead to a 5.3% decrease in the GFT
- the distinction between IIT and BIT is crucial also to understand why Samuelson is (or is not) wrong

Was Samuelson Really Wrong?

- in the model, both BIT and IIT are driven by technology differences
 - ▶ CA across sectors (BIT)
 - ▶ technology heterogeneity within sectors (IIT)
- so, why is BIT "Ricardian" and IIT is not?
- what would be the effect of lowering productivity dispersion within sectors?
 - ▶ China is becoming better in Computers relative to Textile
 - ▶ but within Computers, China is also becoming better at Design relative to Assembly
- maybe the exercise is not fully capturing Samuelson concern...

Was Samuelson Wrong? The Role of IIT

- the fact that the US benefits more from China becoming technologically more similar may depend on IIT
- why?
 - ▶ remove within sector heterogeneity → no IIT
 - ▶ back to Dornbusch, Fischer & Samuelson (1977), with many countries
 - ▶ for simplicity, remove trade costs
 - ▶ if China gets the US technology, the US will lose (= increase in country size)
- having IIT is realistic
 - ▶ but its interaction with BIT should be explored more in details

Was Samuelson Wrong? An Alternative Hypothesis

- yet, Samuelson may be wrong even in a 2 country world with no trade costs, no IIT
- how?
- multiple sources of CA:
 - ▶ productivity differences, relative to the frontier (Ricardian)
 - ▶ labor-intensity + cheap labor (HO)
- if labor intensity is negatively correlated to Chinese relative productivity (it is the paper):
 - ▶ the two sources of CA tend to cancel out
 - ▶ removing one, restores the other → more trade, more gains
 - ▶ worth exploring?

Conclusion

- shall we be worried of Samuelson conjecture?
 - ▶ so far, on average, probably not
- what about redistributive implications?
 - ▶ the real wage of US unskilled workers has fallen over time
 - ▶ can China be responsible?
- other reasons why productivity growth in China may not so bad for the US:
 - ▶ IRS, technological progress, non-homothetic preferences
- in sum, a great paper:
 - ▶ state-of-the-art quantitative trade model
 - ▶ very interesting results
 - ▶ and yet, much remains to be learnt about the impact of China on the global economy!