

The importance of quantitative methods in current research

Technology and the trade collapse

Ecorys, Thursday 1 October 2009: 13.10-13.50

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Global recent trade flows

Is trade collapsing?

Why is trade collapsing?

Technology – supply chains

Effect on trade flows

Technology – heterogeneity

Conclusions and questions

Distribution of world merchandise trade flows (share of total), 1991 and 2009

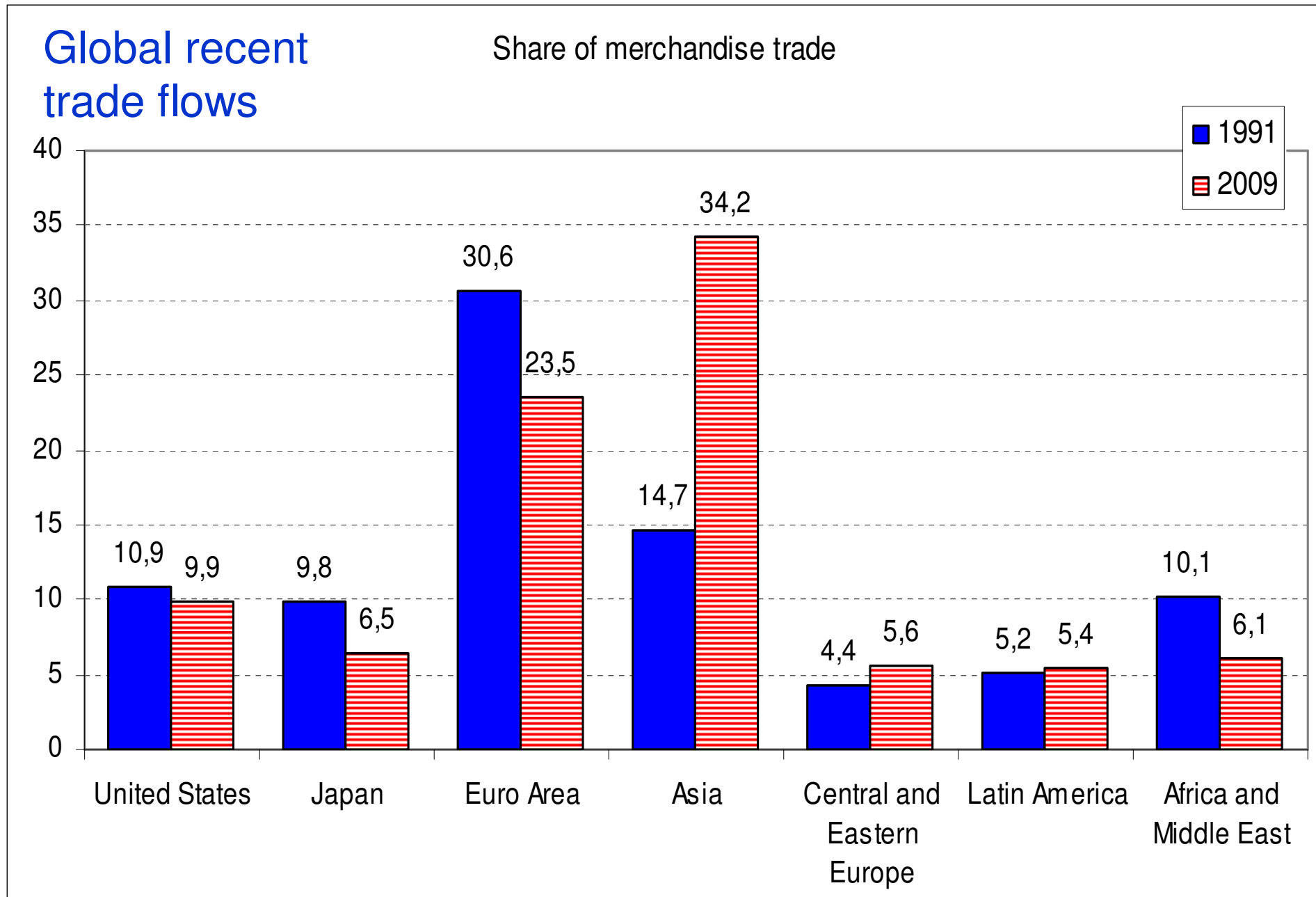
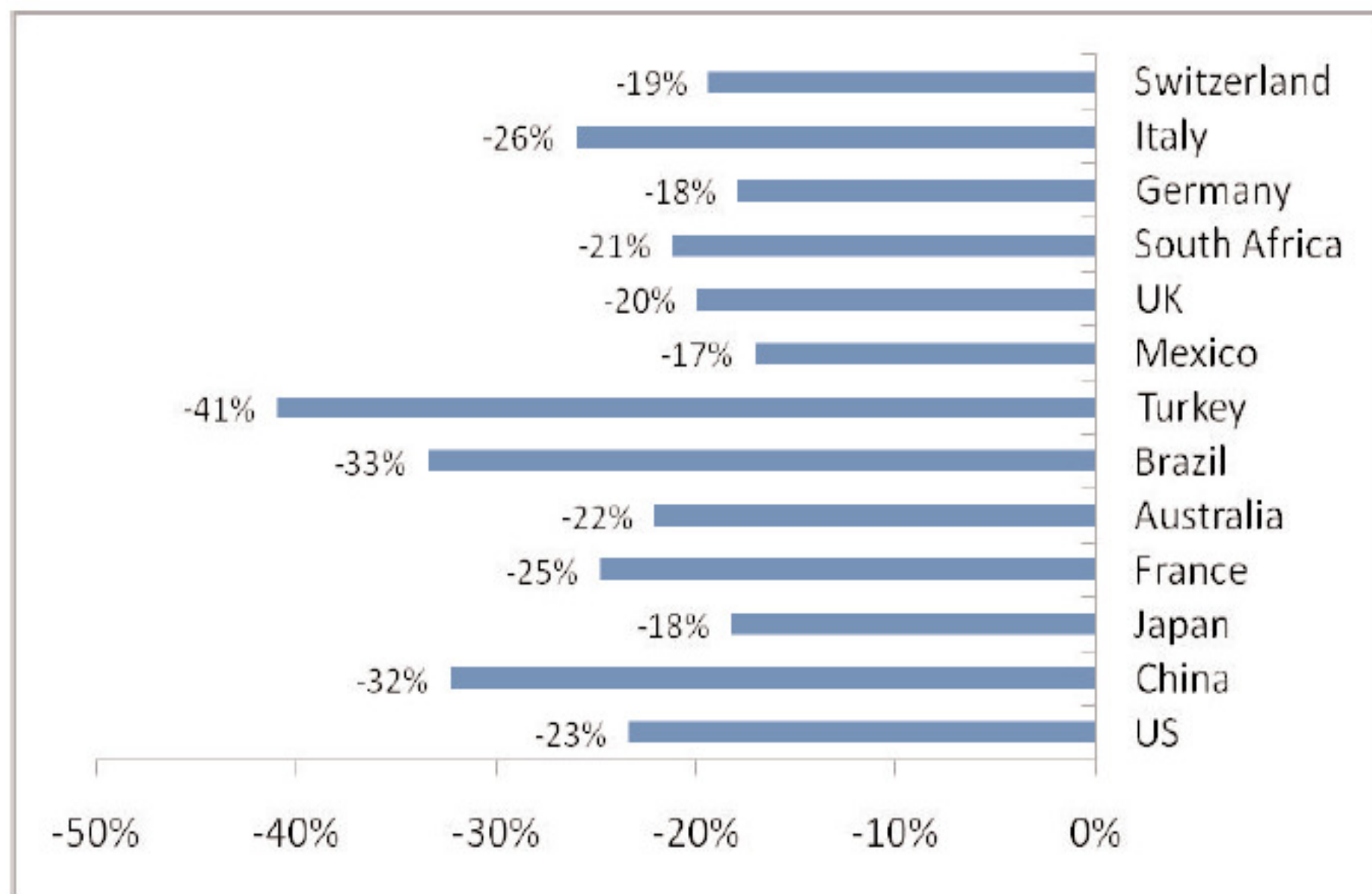


Figure 1 Collapse in world trade: sudden, severe, synchronised (change in monthly trade flows between October and December 2008, or latest data). ComTrade data; see chapter 9 for seasonally adjusted figures.



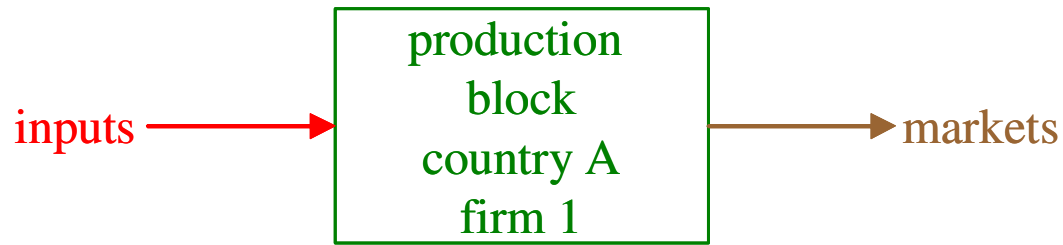
The collapse of global trade, murky protectionism, and the crisis: Recommendations for the G20

Richard Baldwin and Simon Evenett (editors)

Why is trade collapsing?

- Drying-up of international credit; payment uncertainty for exporter and counterparty risk for importer until good is delivered; buyer's and seller's banks issue paired credit (letter of credit); Two problems because of crisis:
 - o harder to obtain paired credit (banks don't trust each other)
 - o letters of credit are now asked between partners who previously traded on the basis of trust
- International supply chains

I. traditional production process



Technology – supply chains

II. globalized fragmented production process

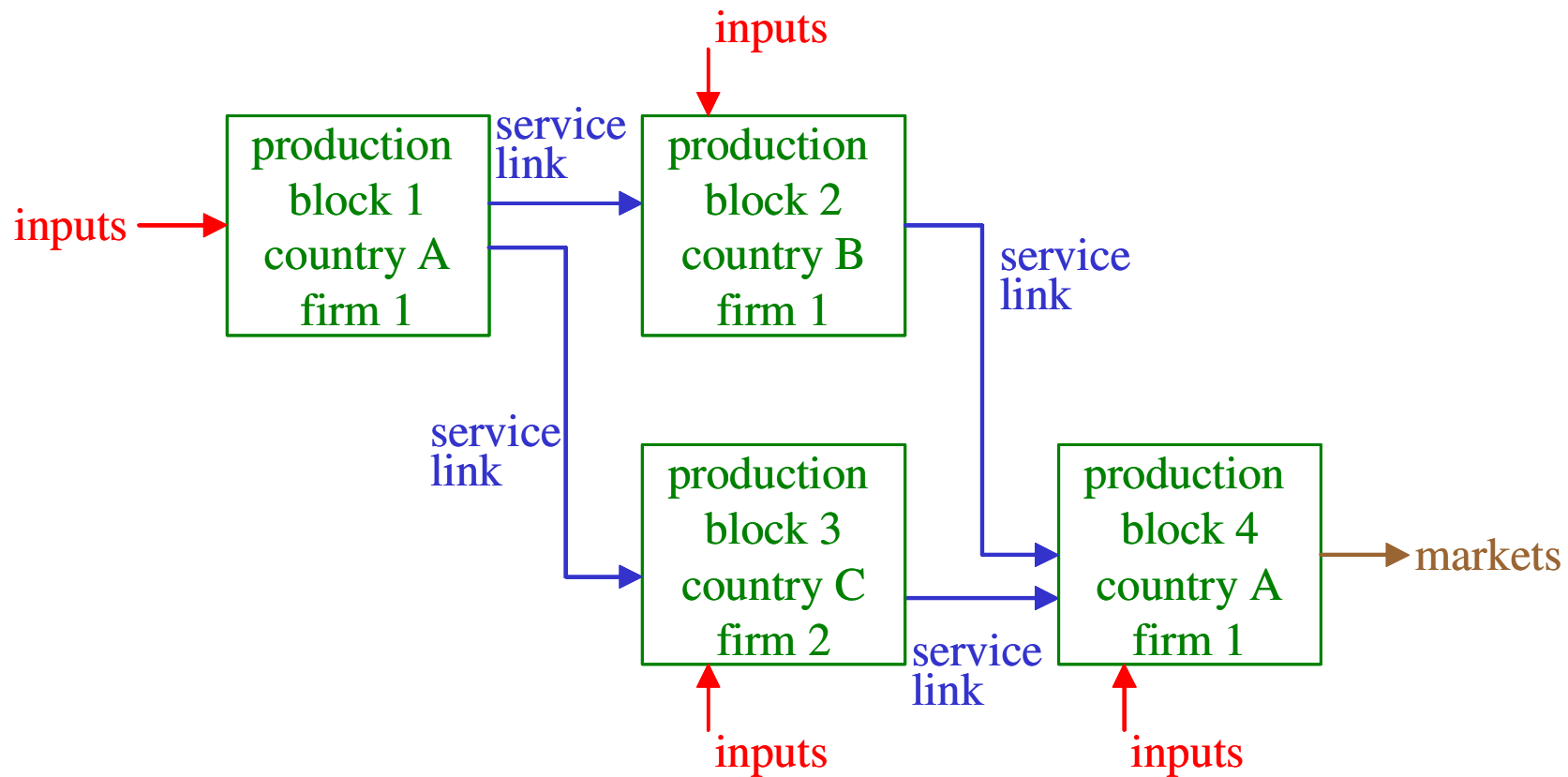
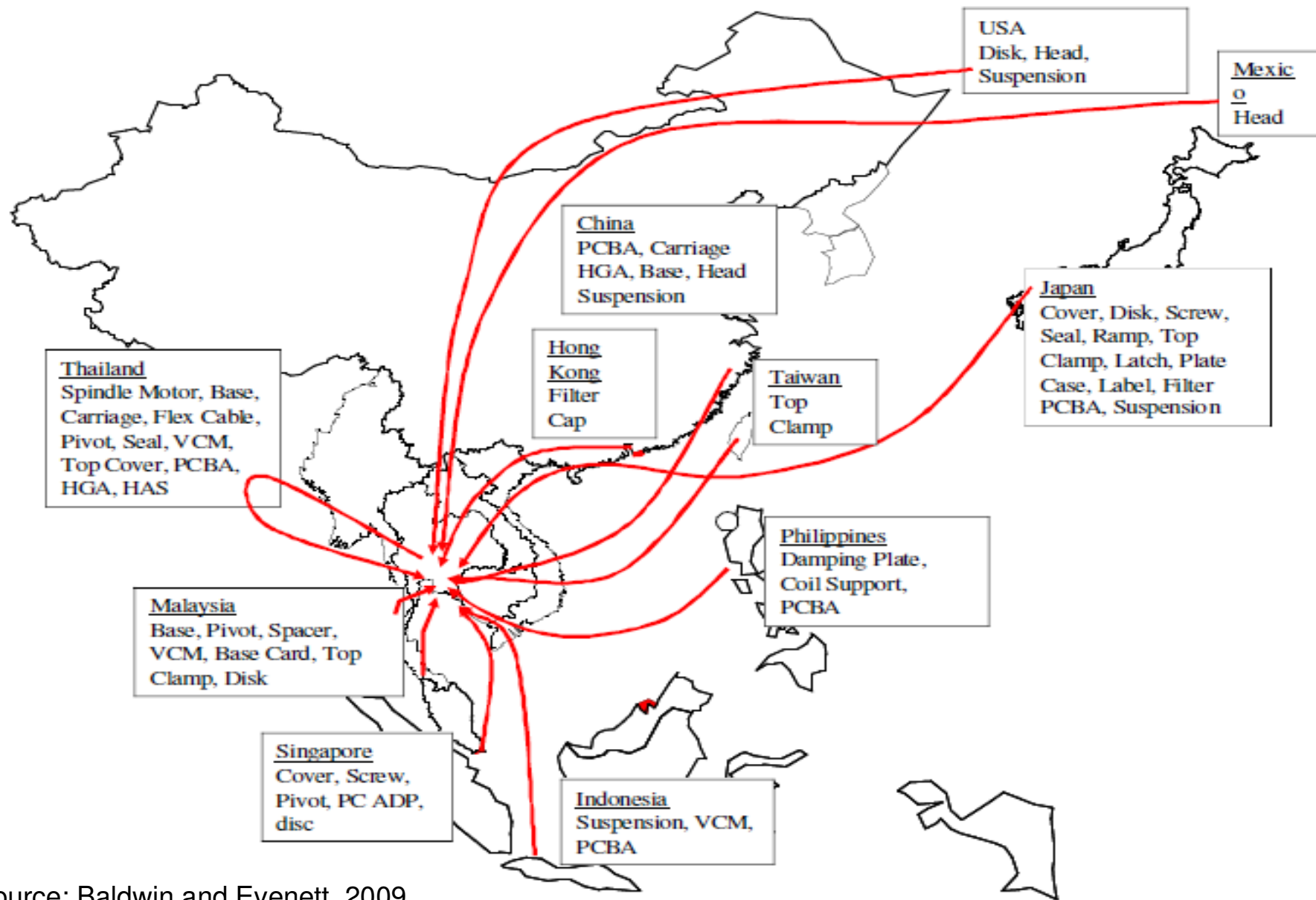


Figure 2 A supply chain example. (This shows the nations where parts are sourced for a hard-disk drive assembled in Thailand.)



Source: Baldwin and Evenett, 2009

Regularity in spatial interaction: gravity equation

Effect on
trade flows

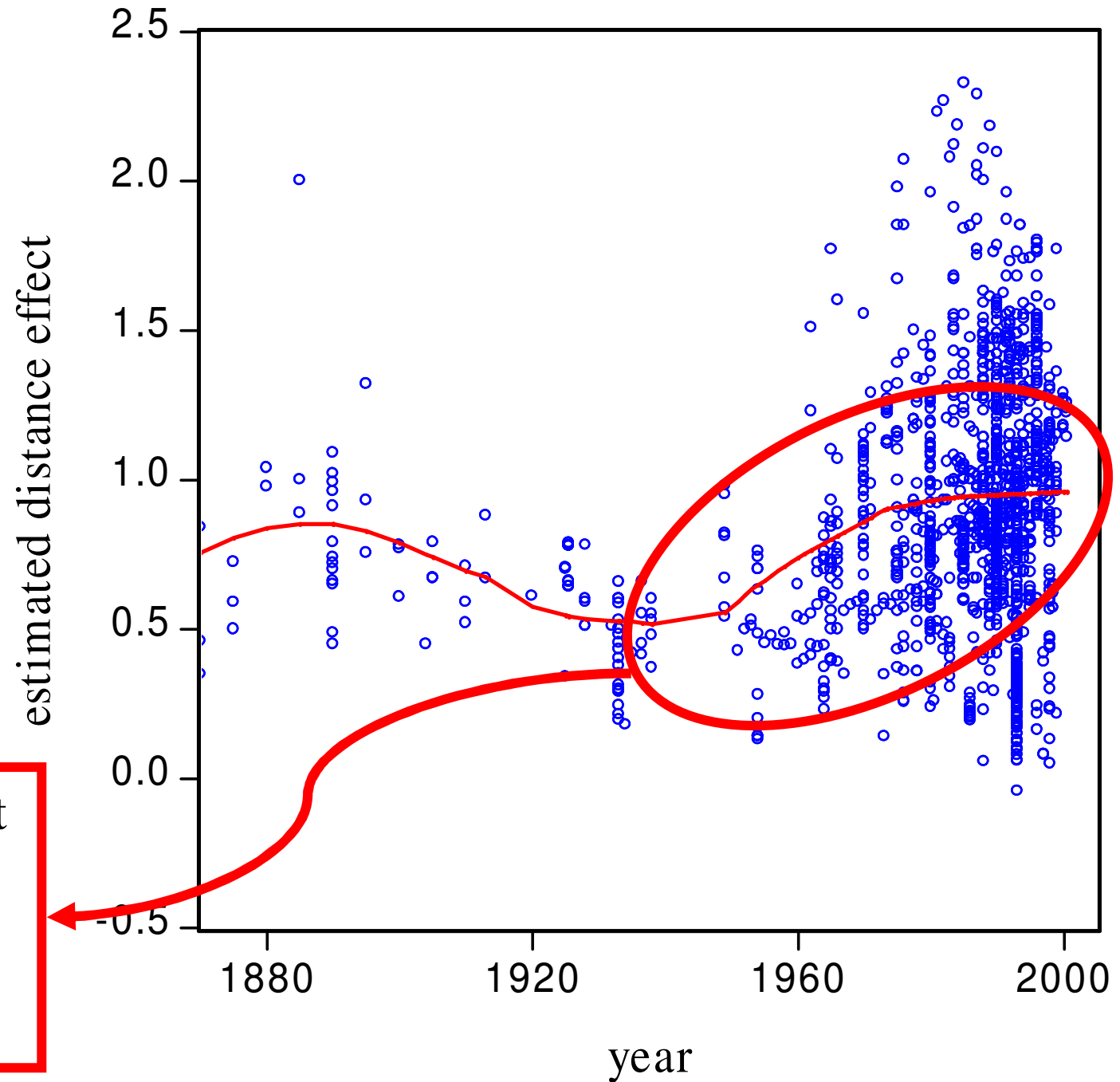
$$Trade_{A to B} = \frac{income_A^\alpha \times income_B^\beta}{distance_{A to B}^\theta}$$

θ is the impact of distance on trade flows

The higher θ the more important distance as an obstacle to trade

Source and destination country income levels are important
(act like bodies / planets in Newton's gravity equation)

Meta study
Estimates of
the distance
effect over
time
(kernel fit)



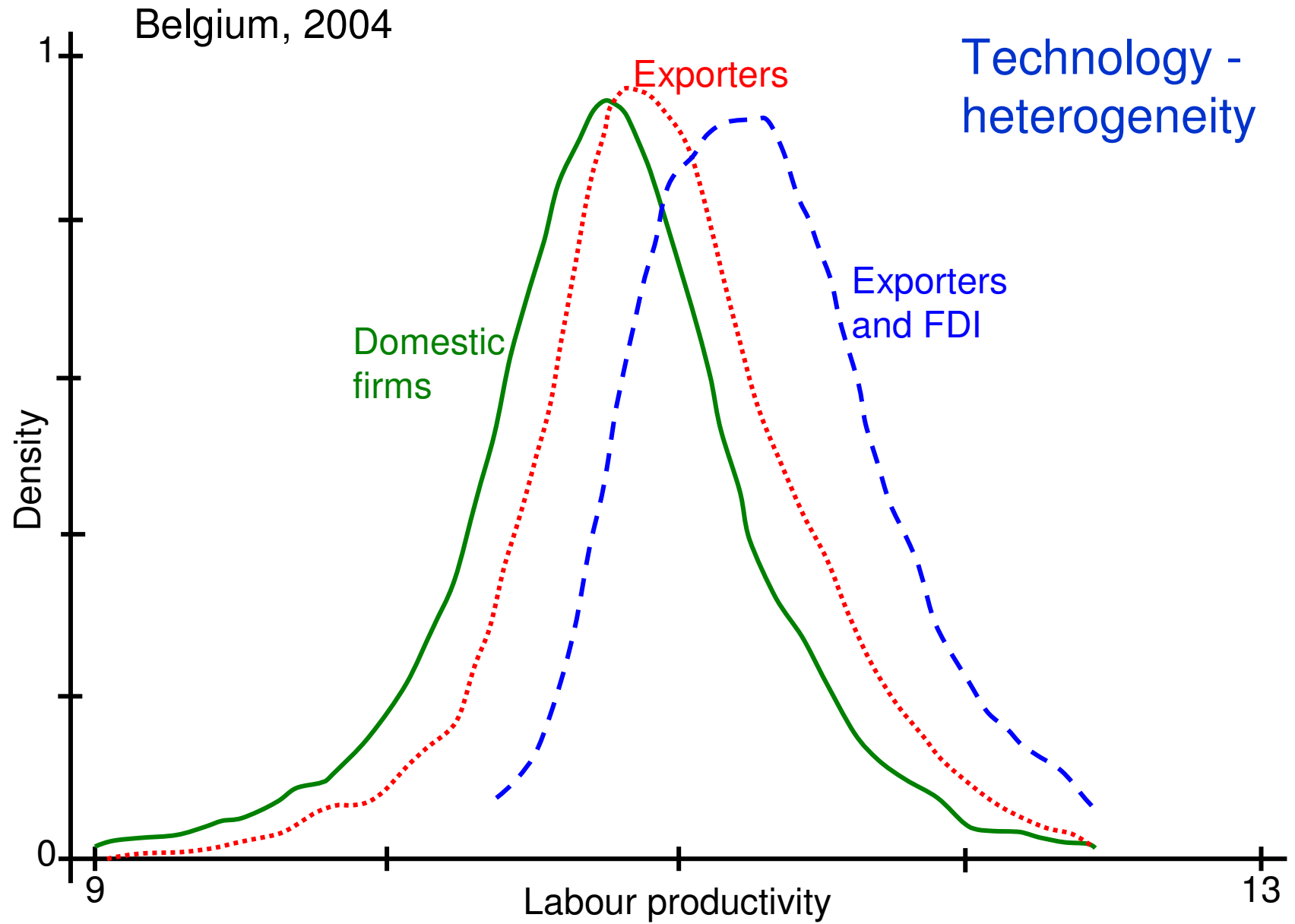
Distance effect
has become
more
important!

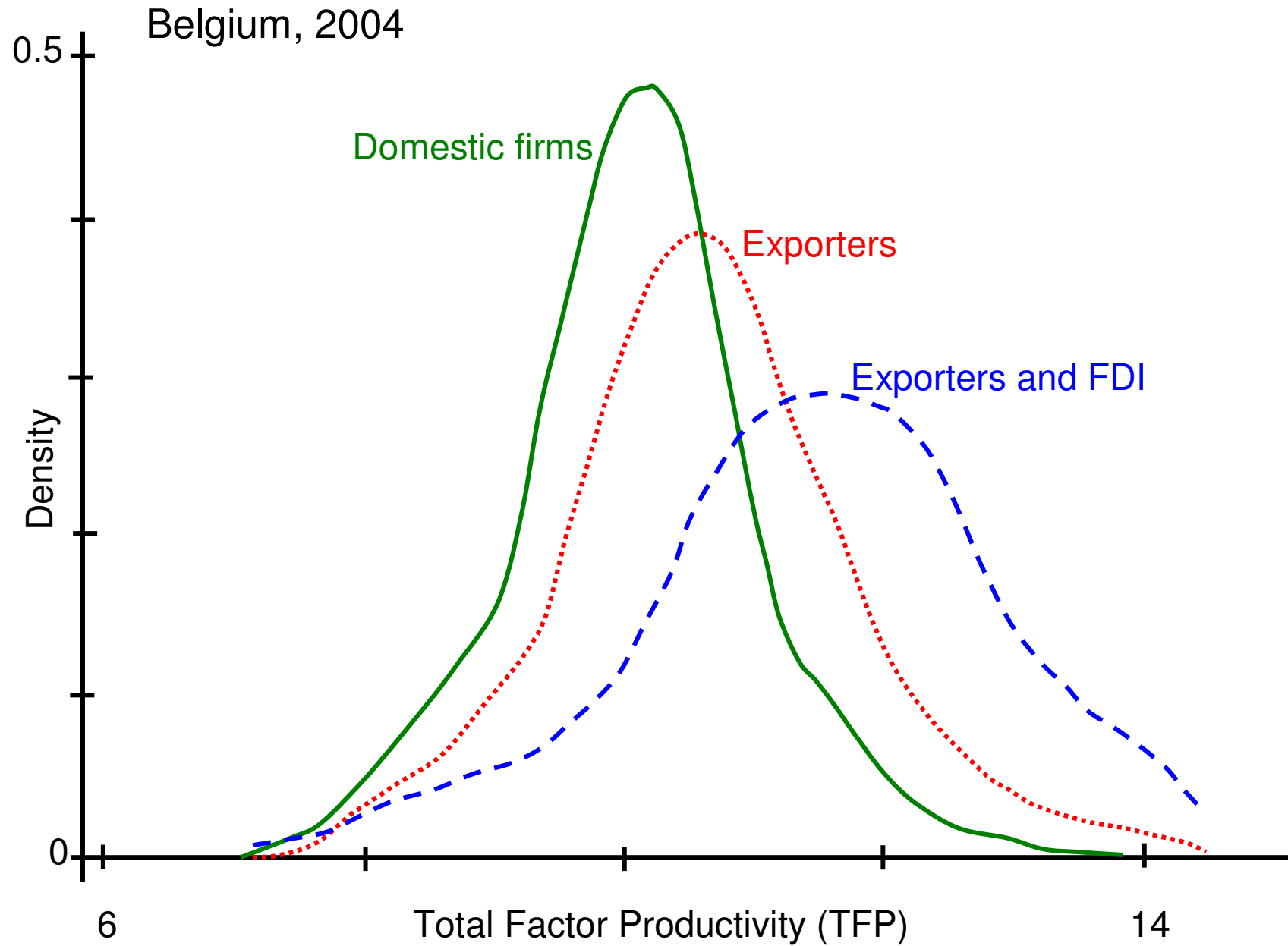
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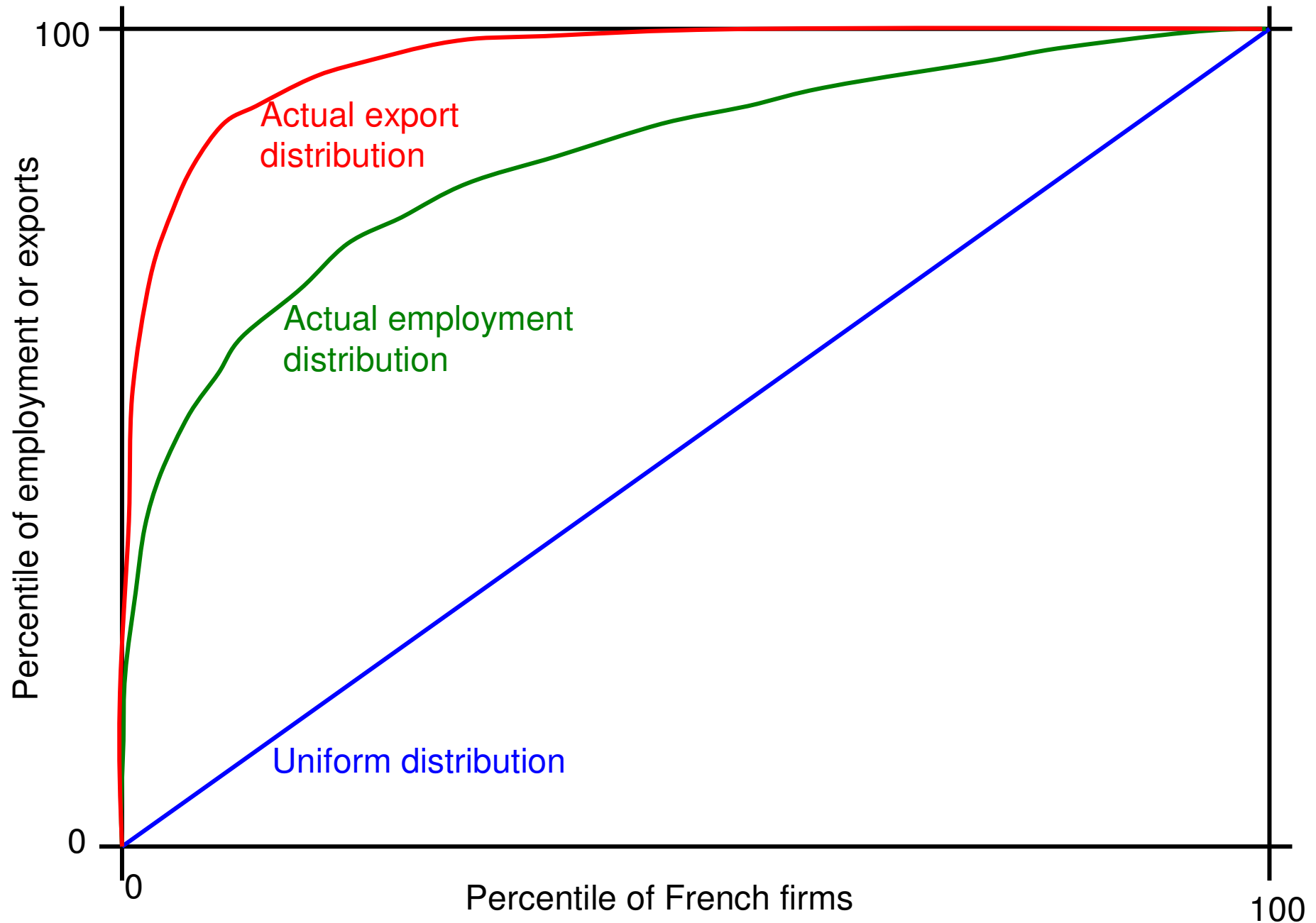
Table 4 Distribution of European trade flows, sel. years (% of total export / import)

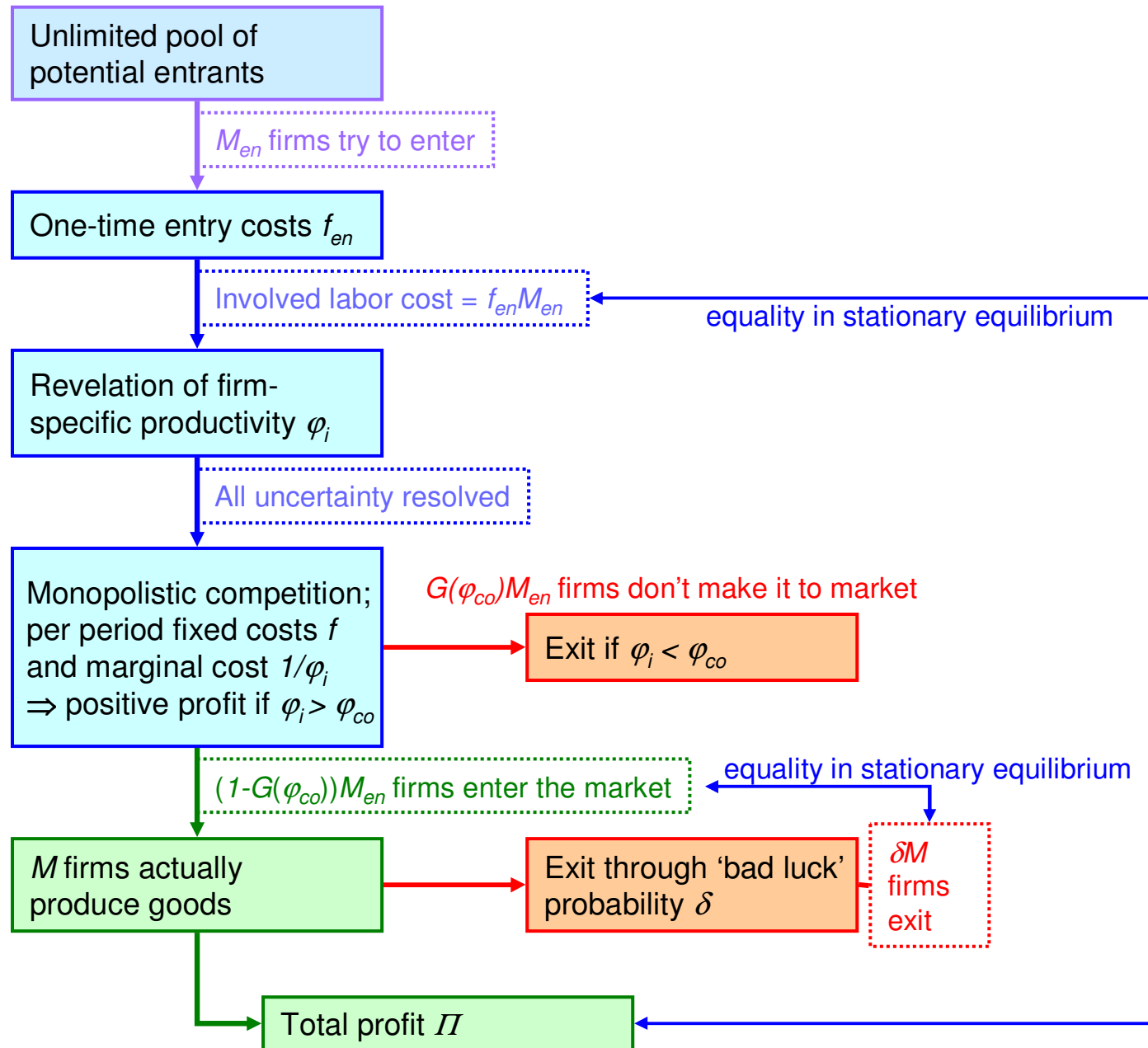
a. Export	Europe	USA	S-America	Asia	Africa	ROW
1860	67.5	9.1	7.7	10	3.2	2.5
1910	67.9	7.6	4.2	9.8	4.8	2.4
2005	75.7	6.9	1.3	7.6	2.6	5.9
b. Import						
1860	61.0	14.3	7.8	12.1	3.2	1.7
1910	60.0	14.0	8.2	10.0	4.5	3.4
2005	76.8	3.3	1.5	11.3	2.9	4.1

Source: Baldwin and Martin (1999) for the years 1860 and 1910; author's calculations based on WTO International Trade Statistics 2006 for the year 2005.

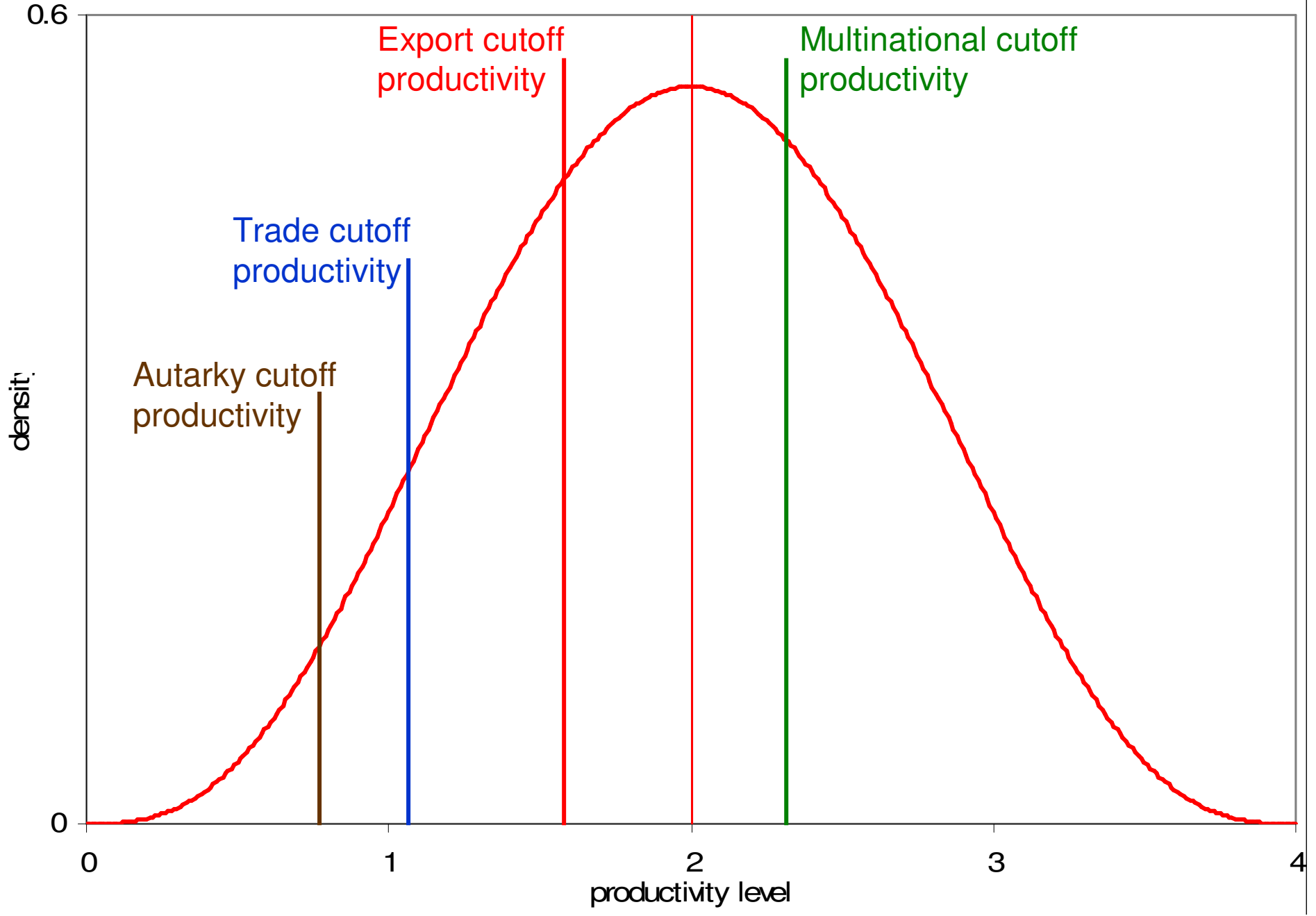








Beta distribution



Conclusions

Trade distributions change rapidly across globe

Trade flows collapsed after October 2008

Large differences between countries on extent of collapse

Culprits: (i) uncertainty – credit and (ii) technology

Supply chains: domino effect

Local connections are becoming more important

Empirical puzzles on heterogeneity partially answered

Questions

Do supply-chain countries experience deeper collapse?

Is this related to role in chain (begin – middle – end)?

Role of heterogeneity and development in supply chain?