

A BRIEF HISTORY OF GLOBAL TRADE EVOLUTION AND ECONOMIC GROWTH

Technology, spatial distribution of resources and paradigm shift of economics have been driving economic integration since 1800s.

Main contents

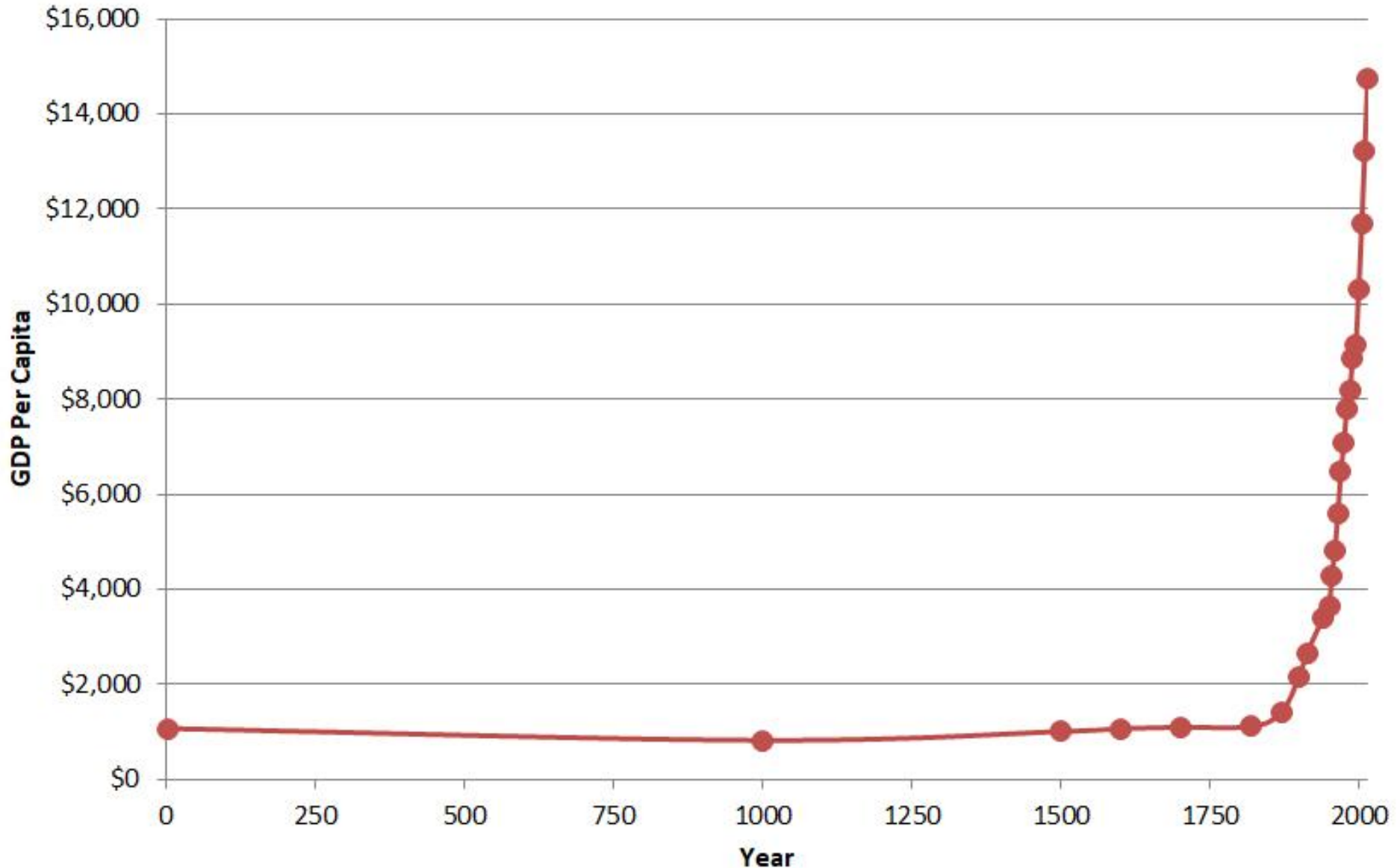
Part 1: First Unbundling Revolution

Part 2: Second Unbundling Revolution

Part 1: First Unbundling Revolution (i.e. The Industrial Revolution)

Global GDP Per Capita, 1-2015

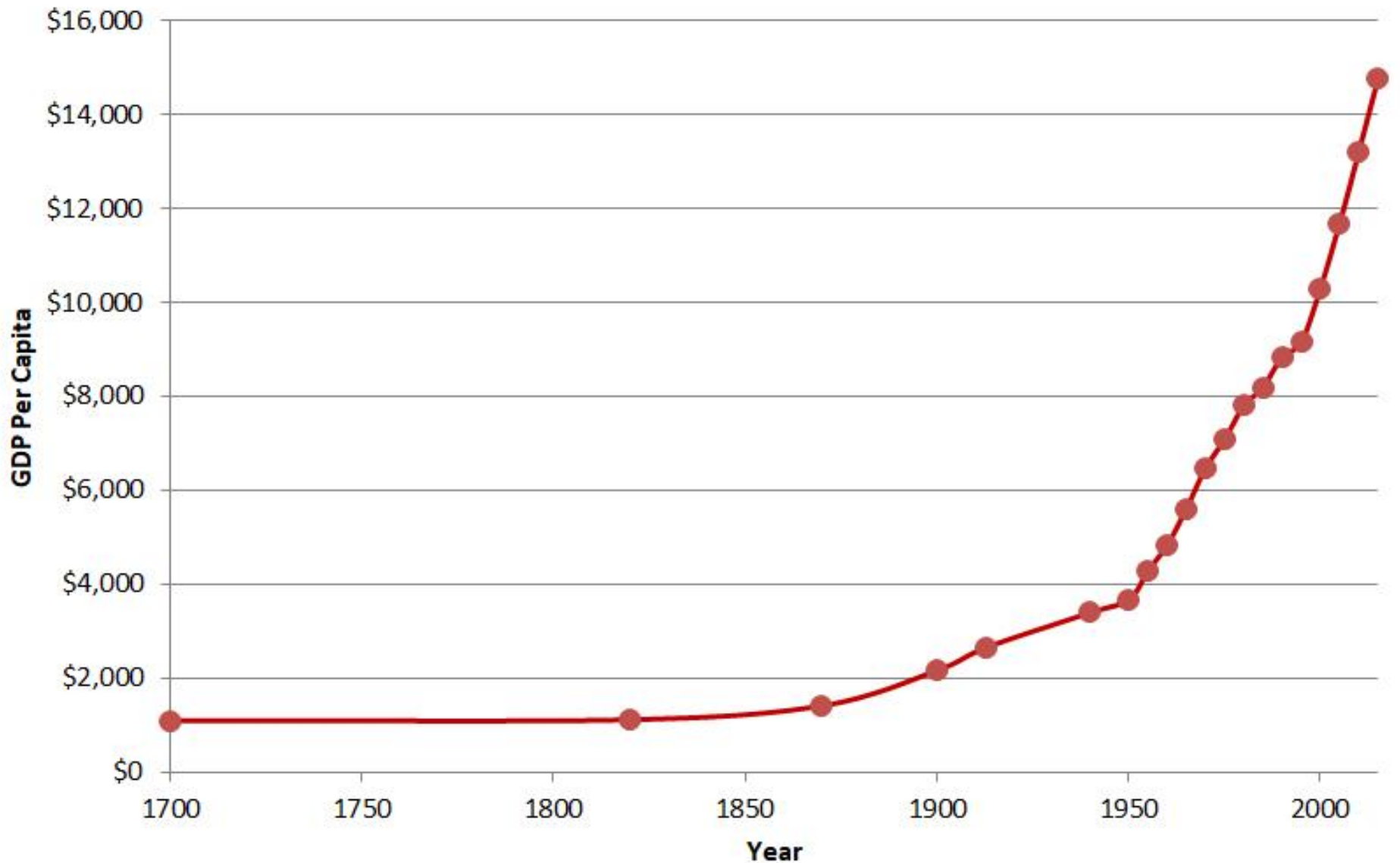
2011 International Dollars



Source: GDP data from ourworldindata.org. Population data from worldpopulationhistory.org

Global GDP Per Capita, 1700-2015

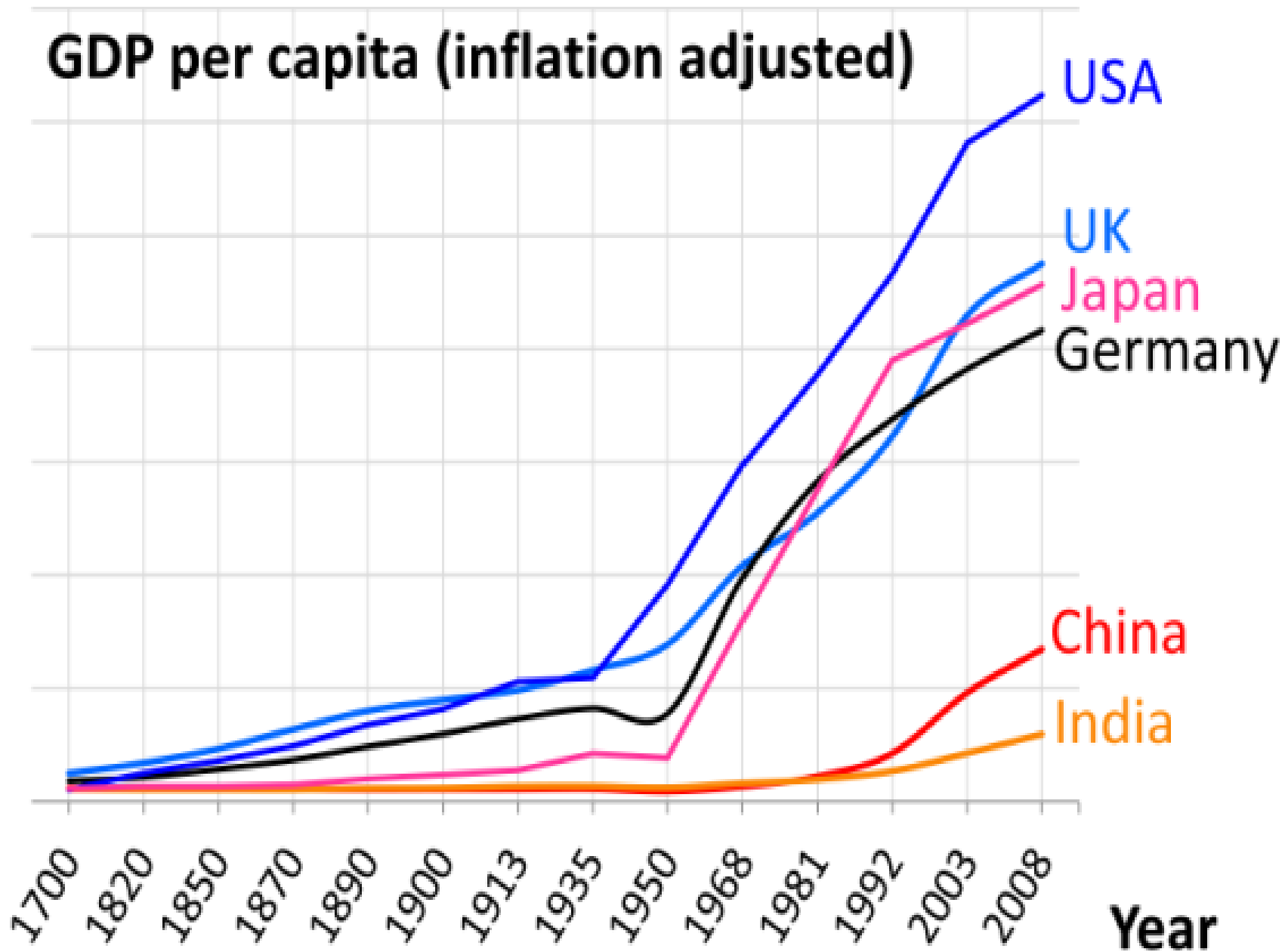
2011 International Dollars



Source: GDP data from ourworldindata.org. Population data from worldpopulationhistory.org

\$35,000
\$30,000
\$25,000
\$20,000
\$15,000
\$10,000
\$5,000
\$0

GDP per capita (inflation adjusted)



USA

UK

Japan

Germany

China

India

Year

Source : <https://www.forbes.com/sites/goncalodevasconcelos/2015/03/04/the-third-industrial-revolution-internet-energy-and-a-new-financial-system/2/#7ec16dd7167e>



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Bridgewater Associates

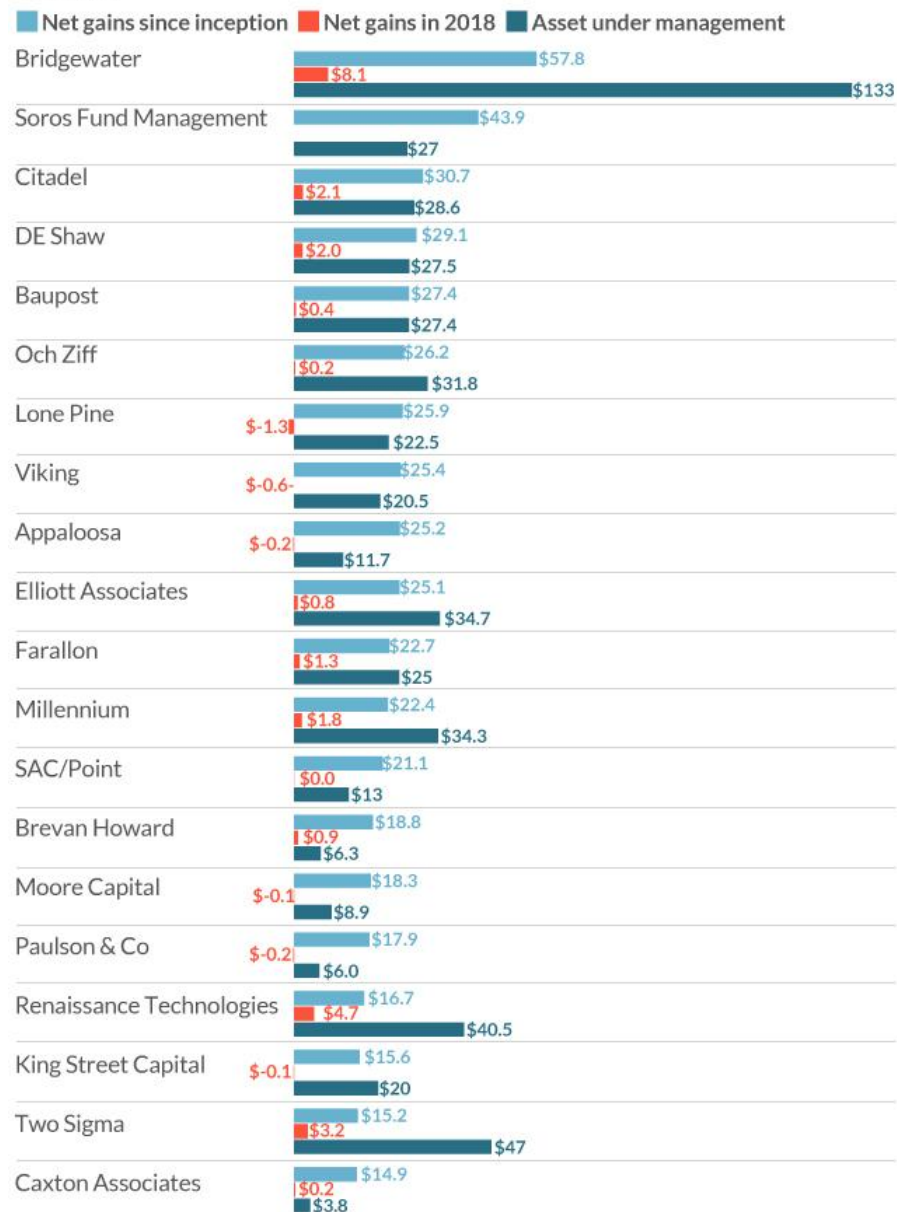
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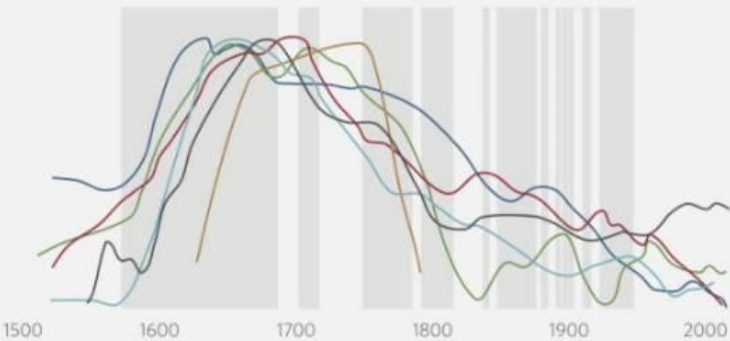
In billions



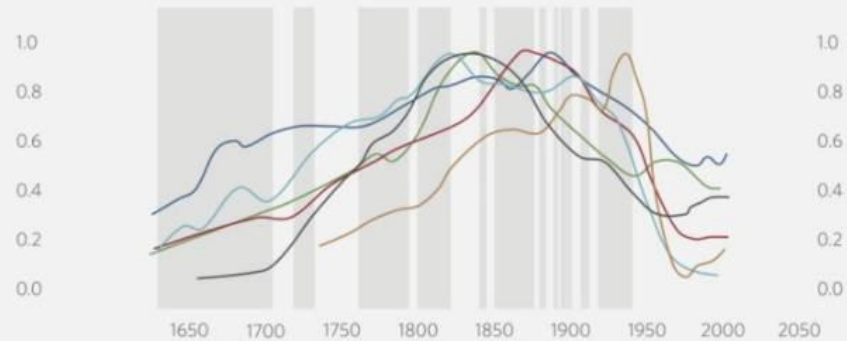
Reserve Currency Empires

(Centered 30yr Average)

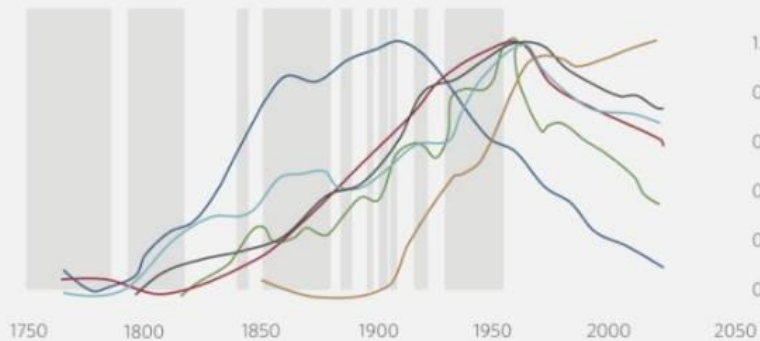
The Dutch



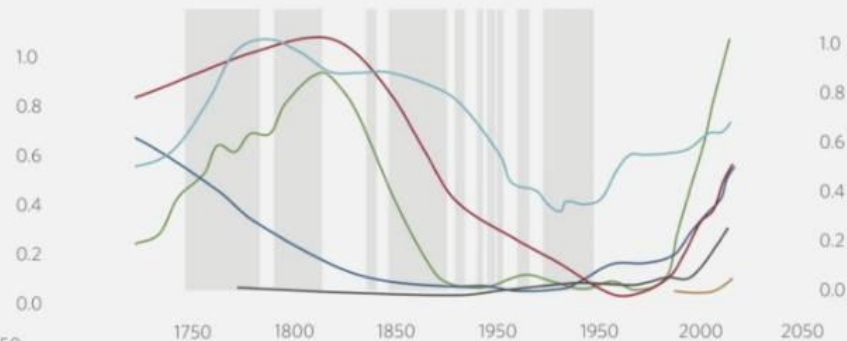
Great Britain



United States



China



Tech, Edu & Comp

Output

Trade

Military

Financial Center

Reserve Status

Major Wars

The Dutch

Tech, Edu & Comp

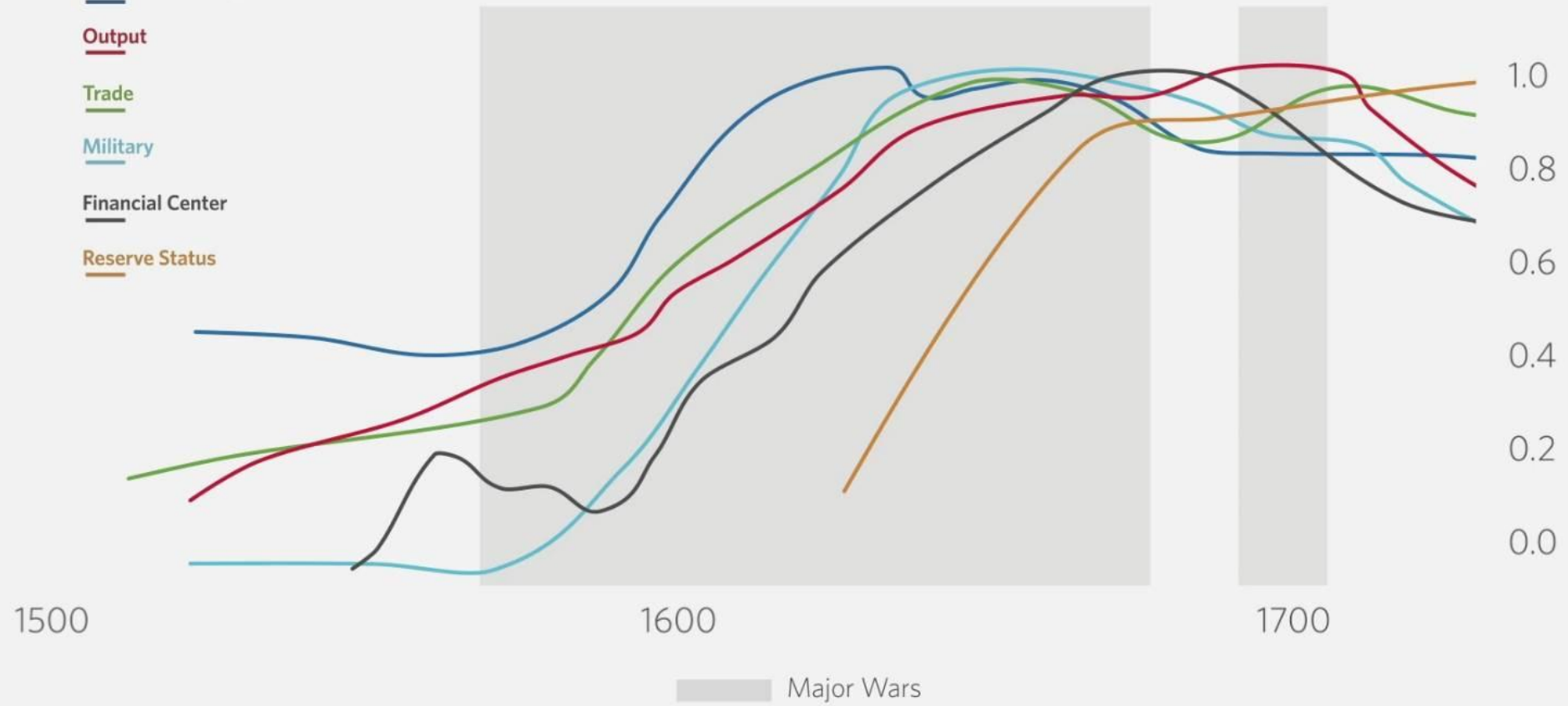
Output

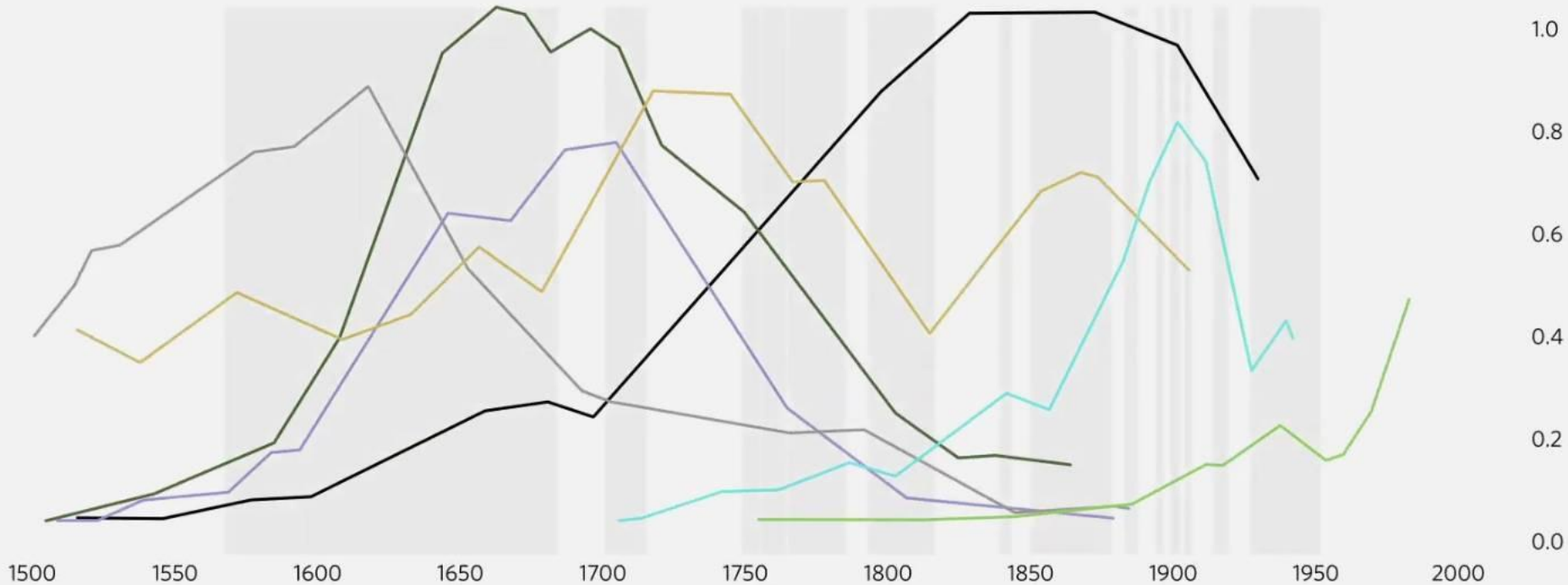
Trade

Military

Financial Center

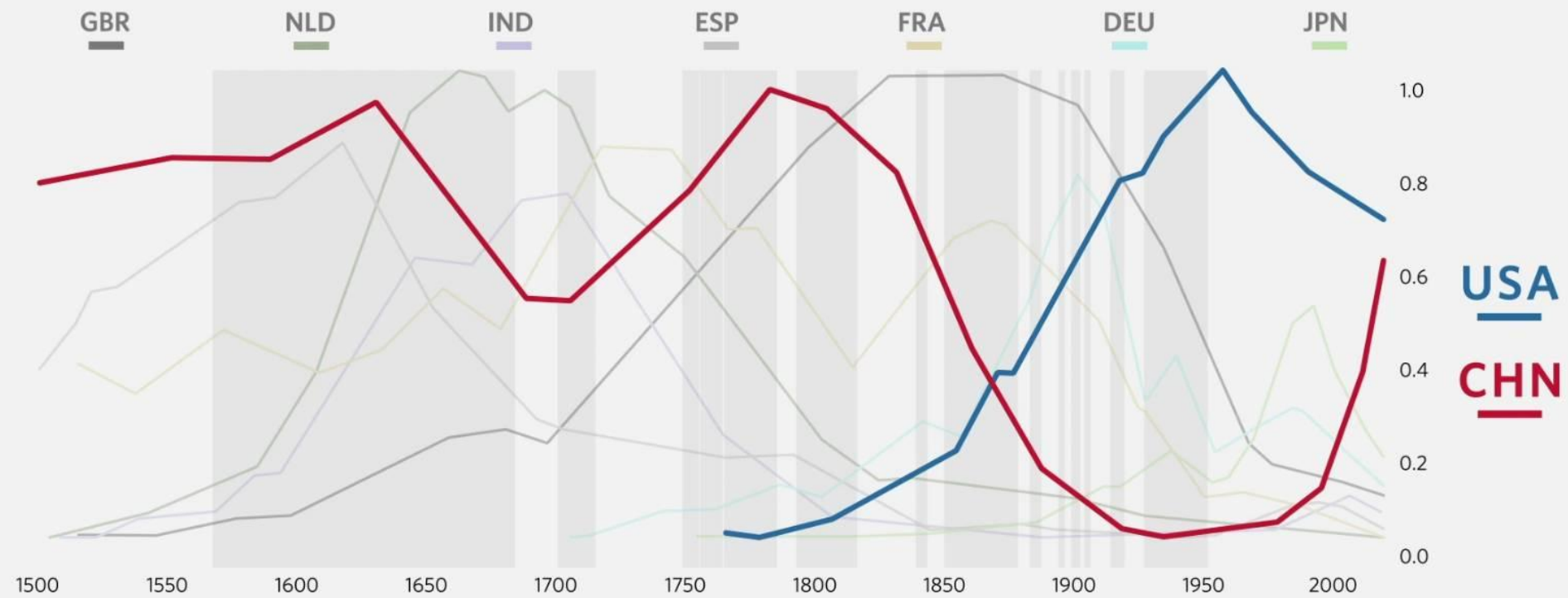
Reserve Status





Estimates of Relative Standing of Great Empires

Major Wars

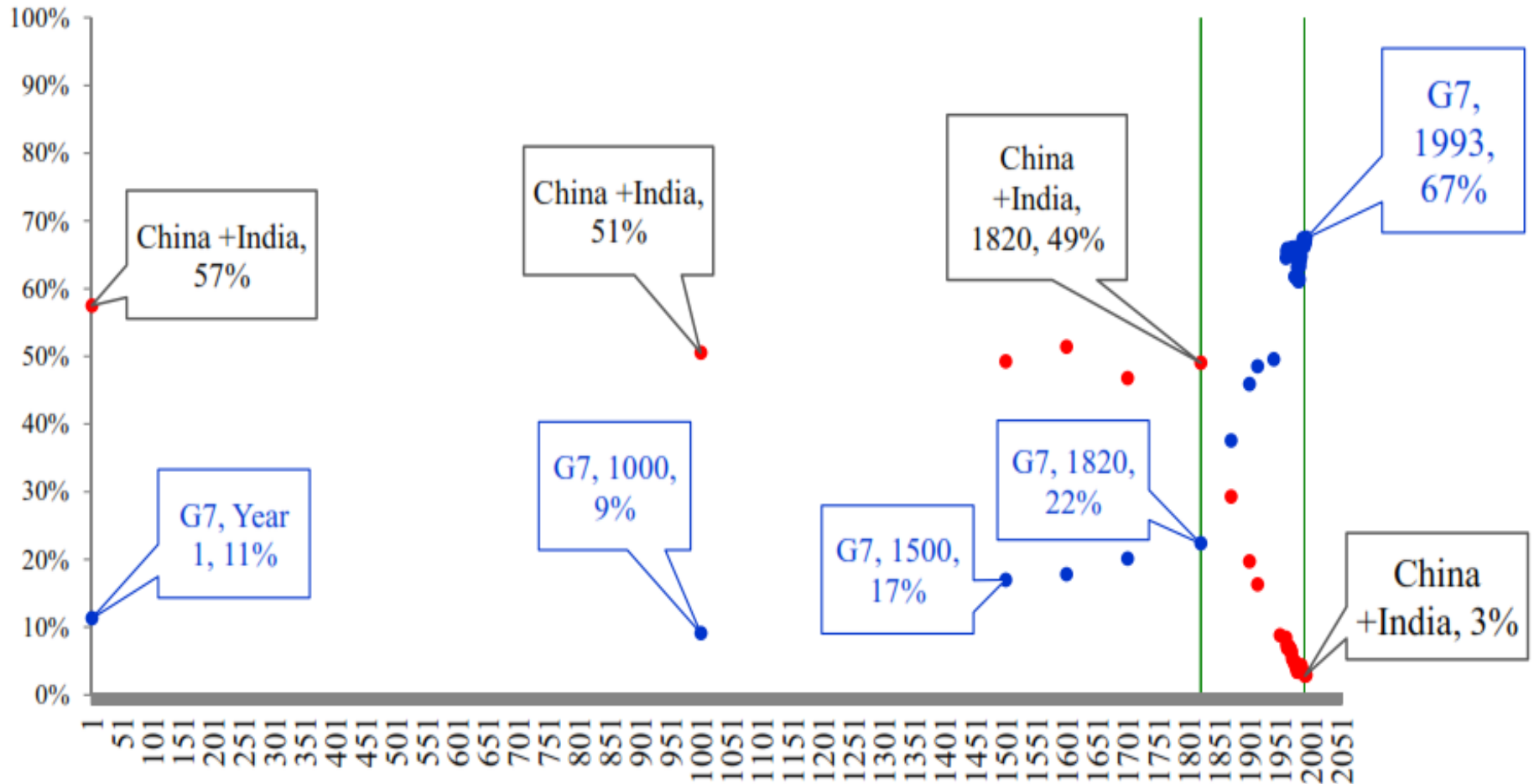


Estimates of Relative Standing of Great Empires

Major Wars

Part 1: First Unbundling Revolution

World GDP shares, Year 1 to 2012



Source: Baldwin (2011)

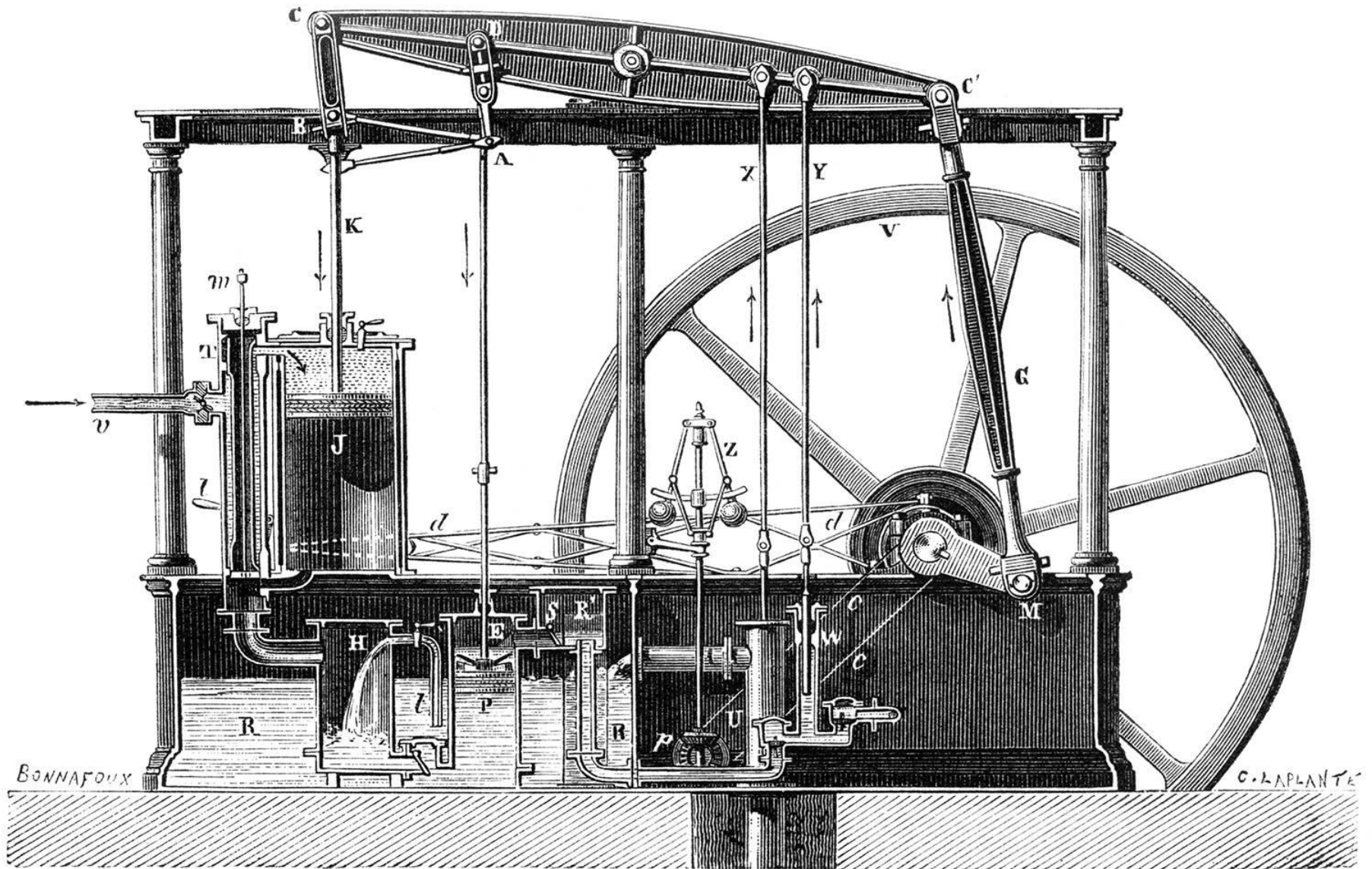
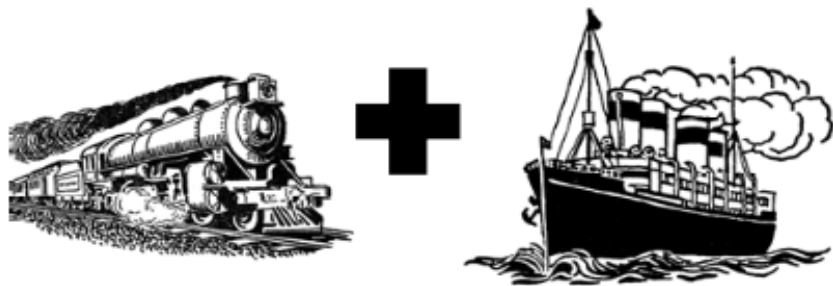


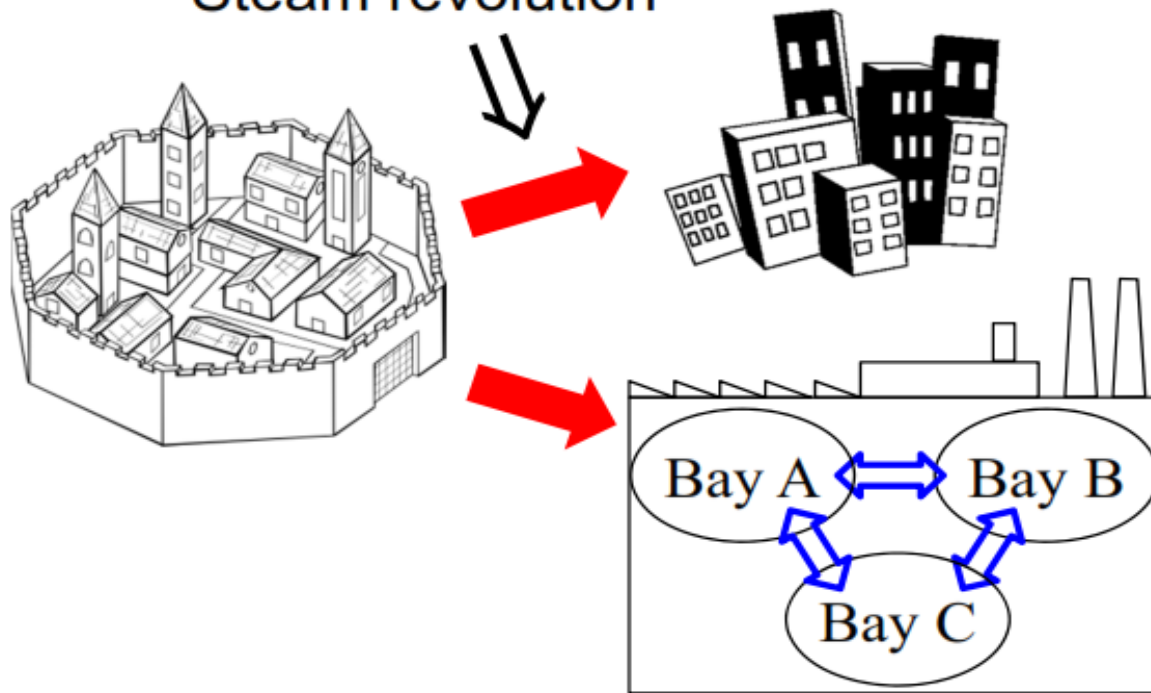
Fig. 59. — Machine à balancier de Watt.

v. Tuyau de prise de vapeur; T, tiroir; J, cylindre; H, condenseur; PE pompe d'épuisement; WY pompe alimentaire de la chaudière
 UX pompe d'alimentation de la bûche R; p Z régulateur; dd excentrique; ABCD parallélogramme; GM bielle et manivelle; V volant.

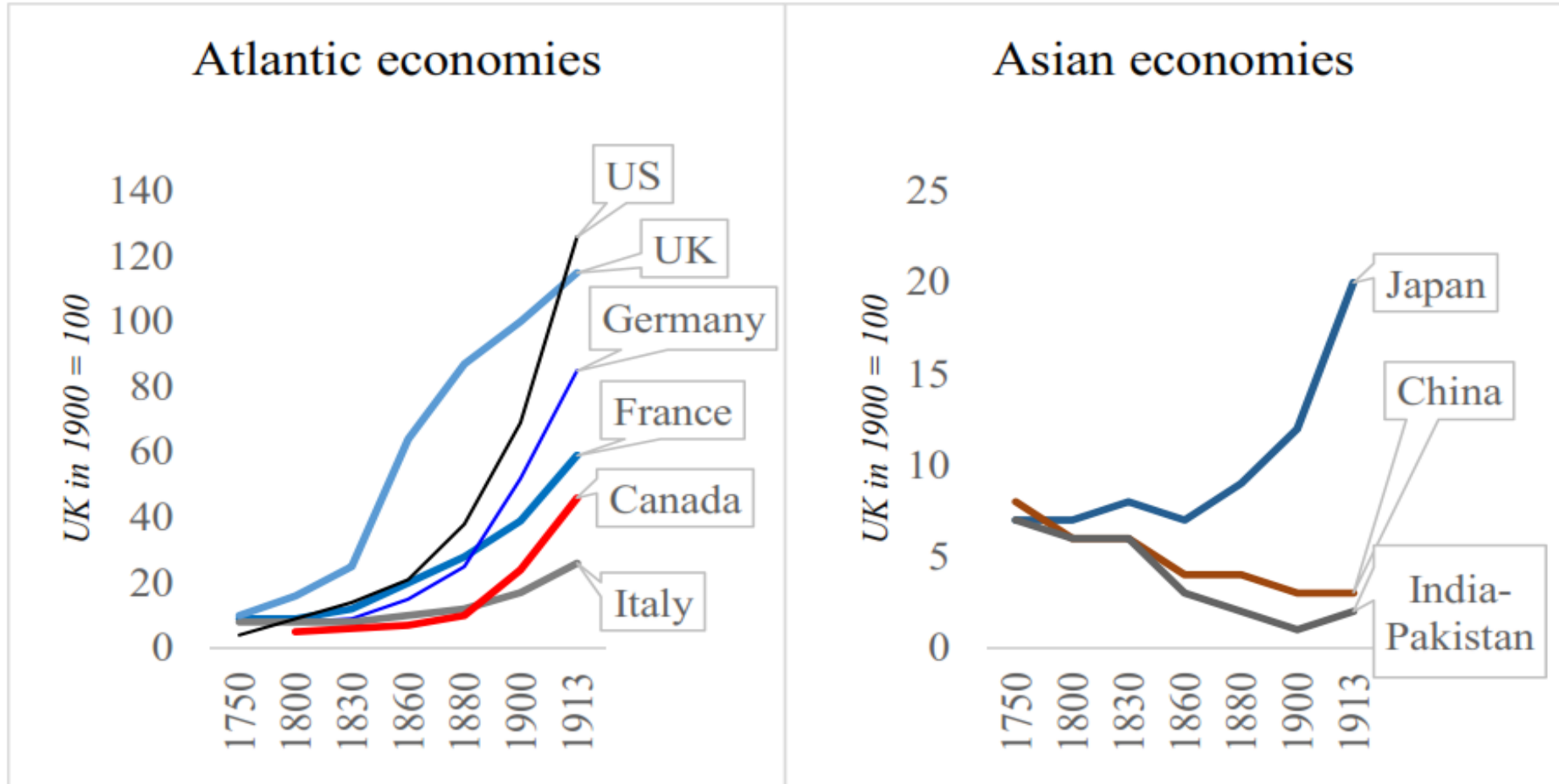
1st unbundling



Steam revolution

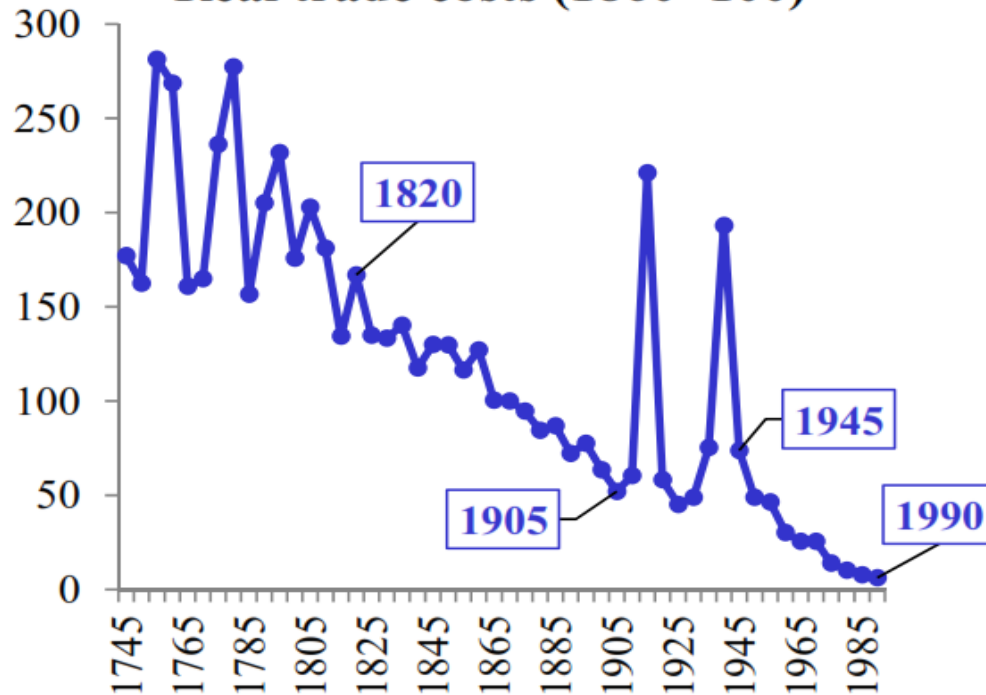


Part 1: First Unbundling Revolution

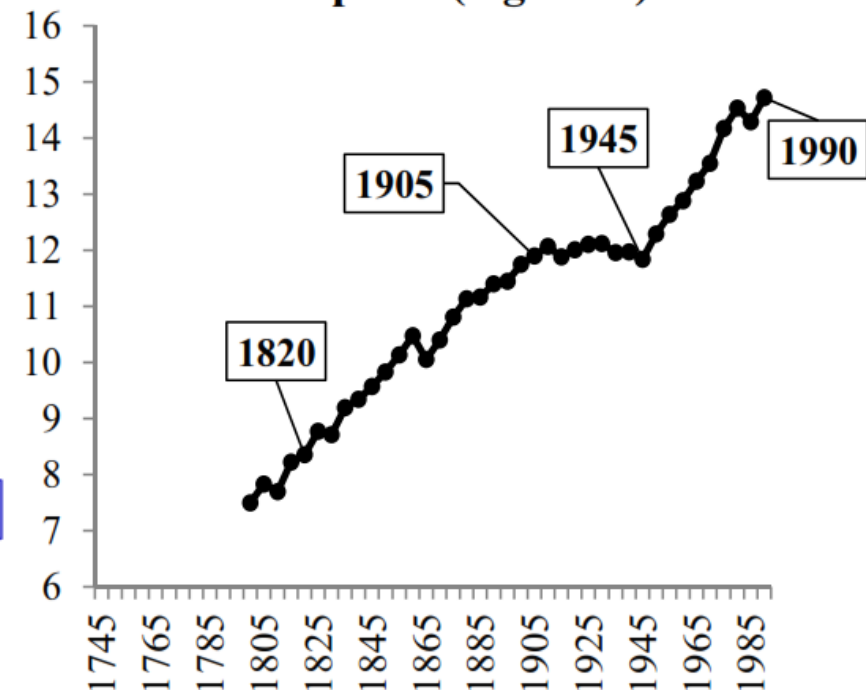


Part 1: First Unbundling Revolution

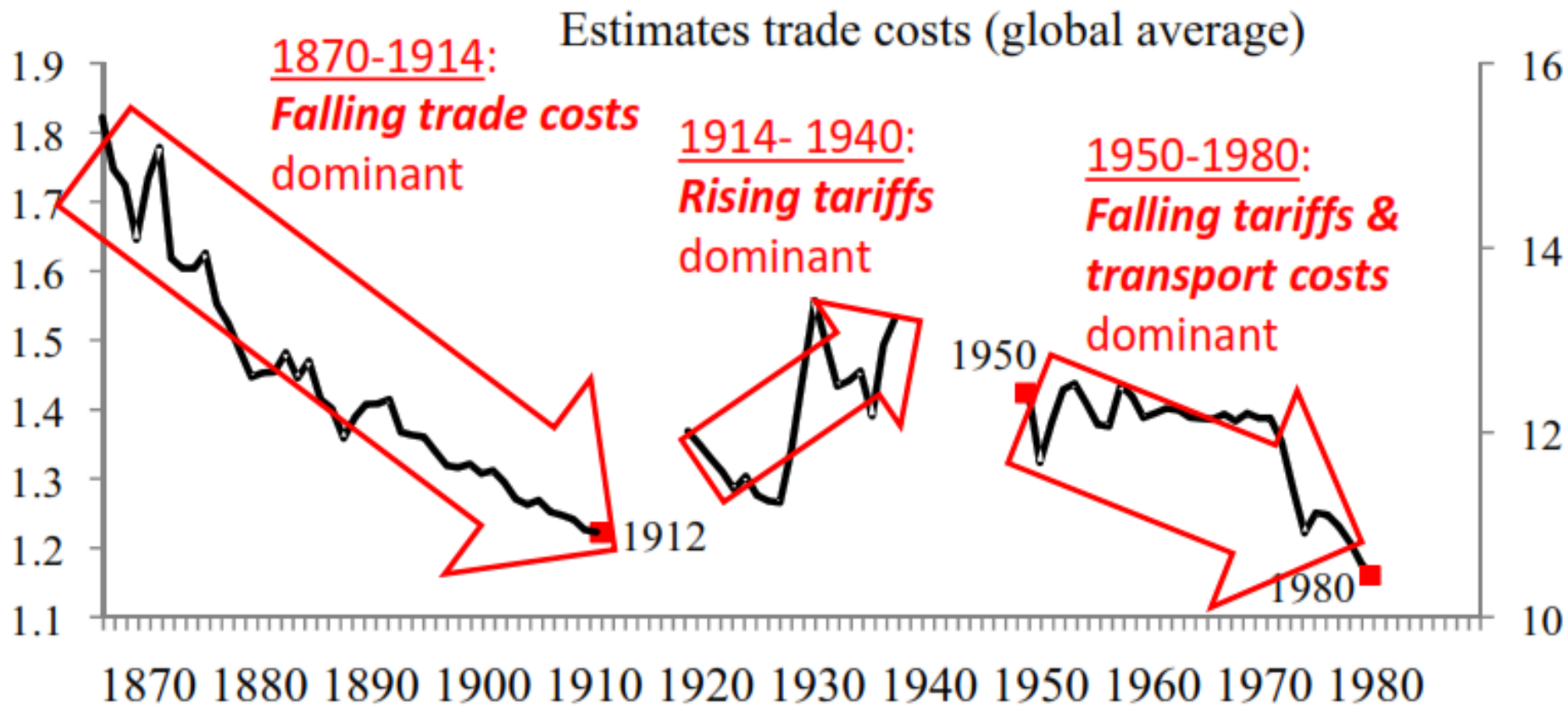
Real trade costs (1860=100)



World exports (log scale)

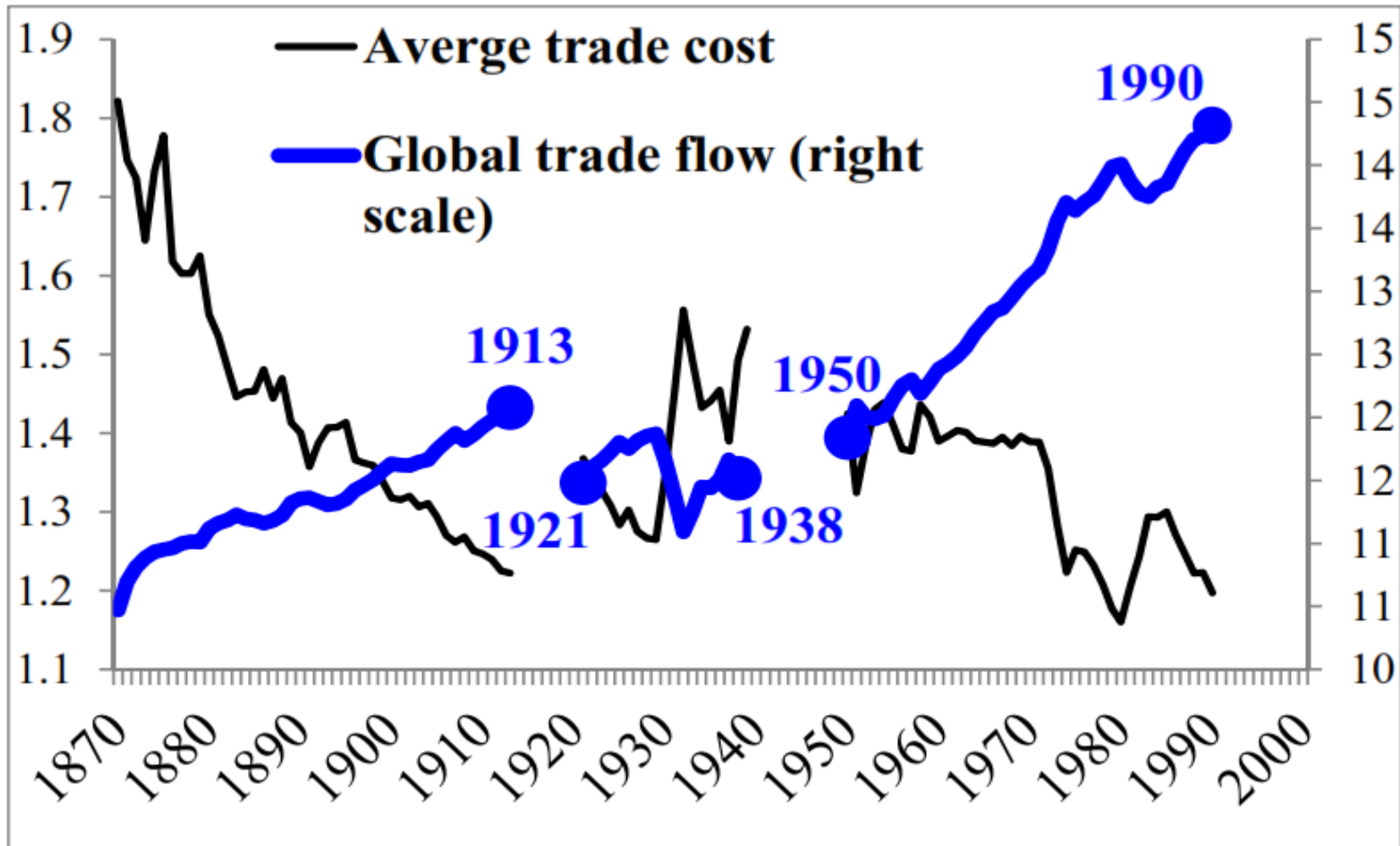


Part 1: First Unbundling Revolution



Source: Gravity model based estimates of trade costs (Jacks, Meissner, Novy 2011).

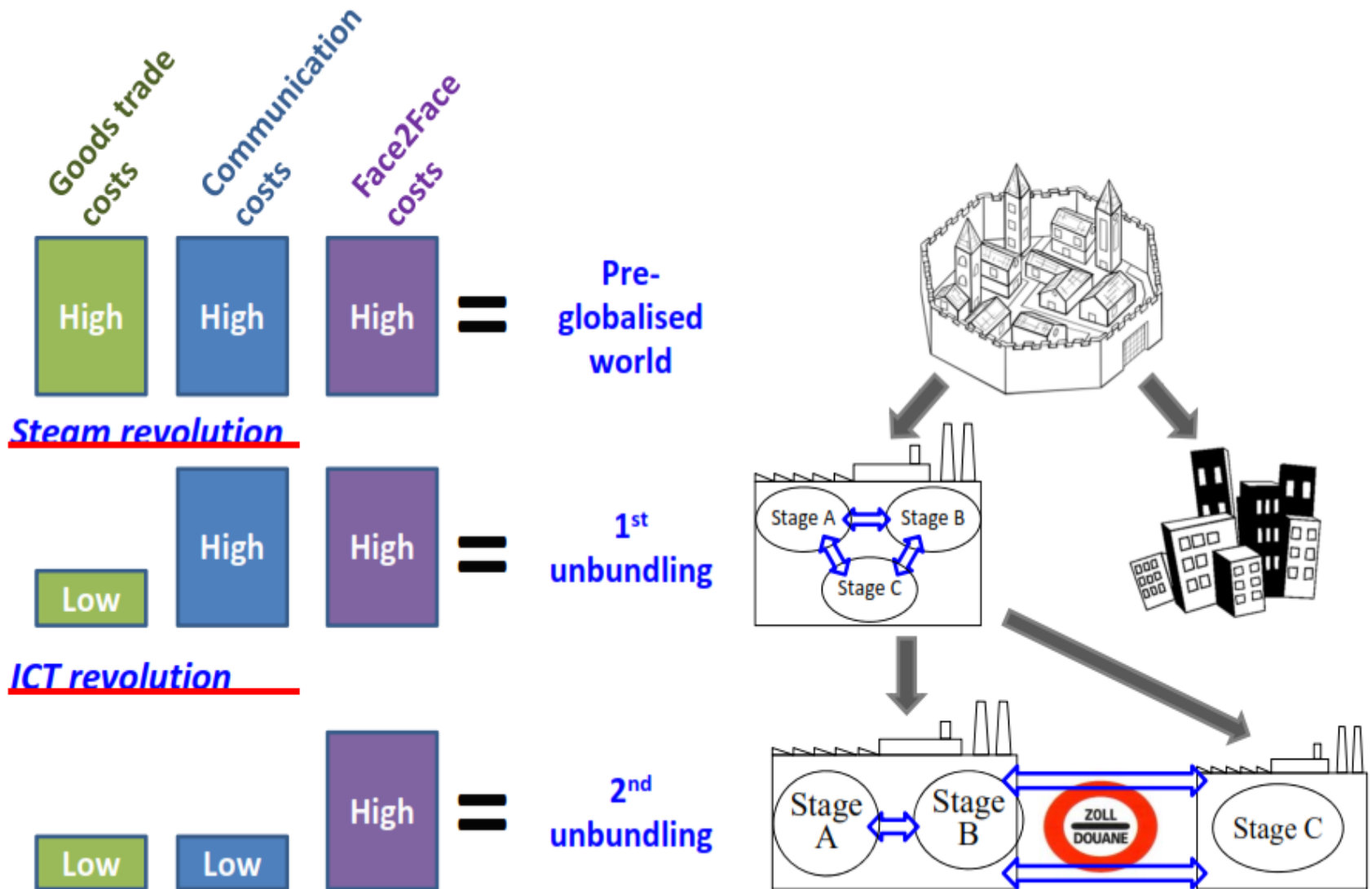
Part 1: First Unbundling Revolution



Source: Gravity model based estimates of trade costs (Jacks, Meissner, Novy 2011).

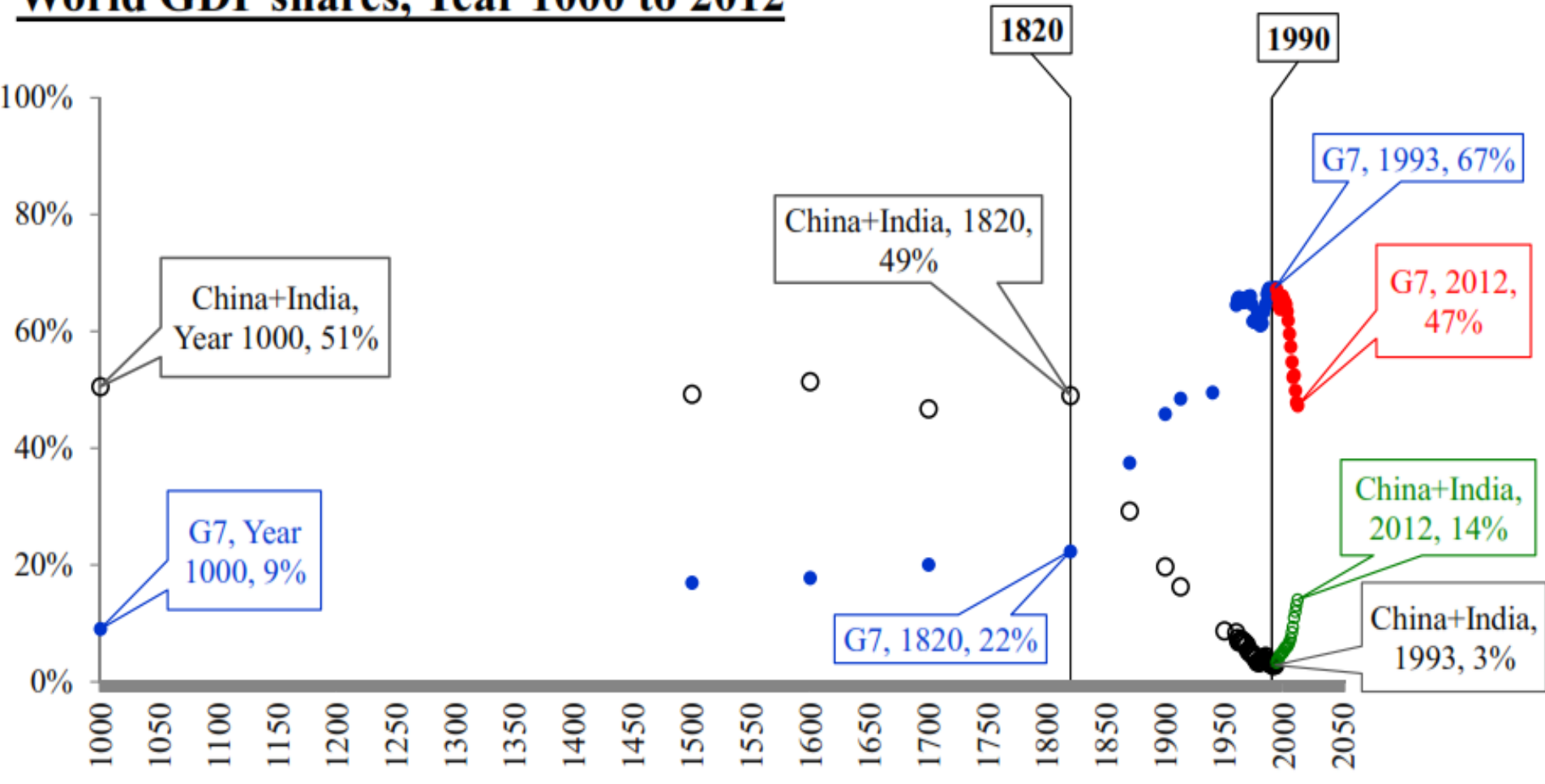
Part 2: Second Unbundling Revolution

Part 2: Second Unbundling Revolution



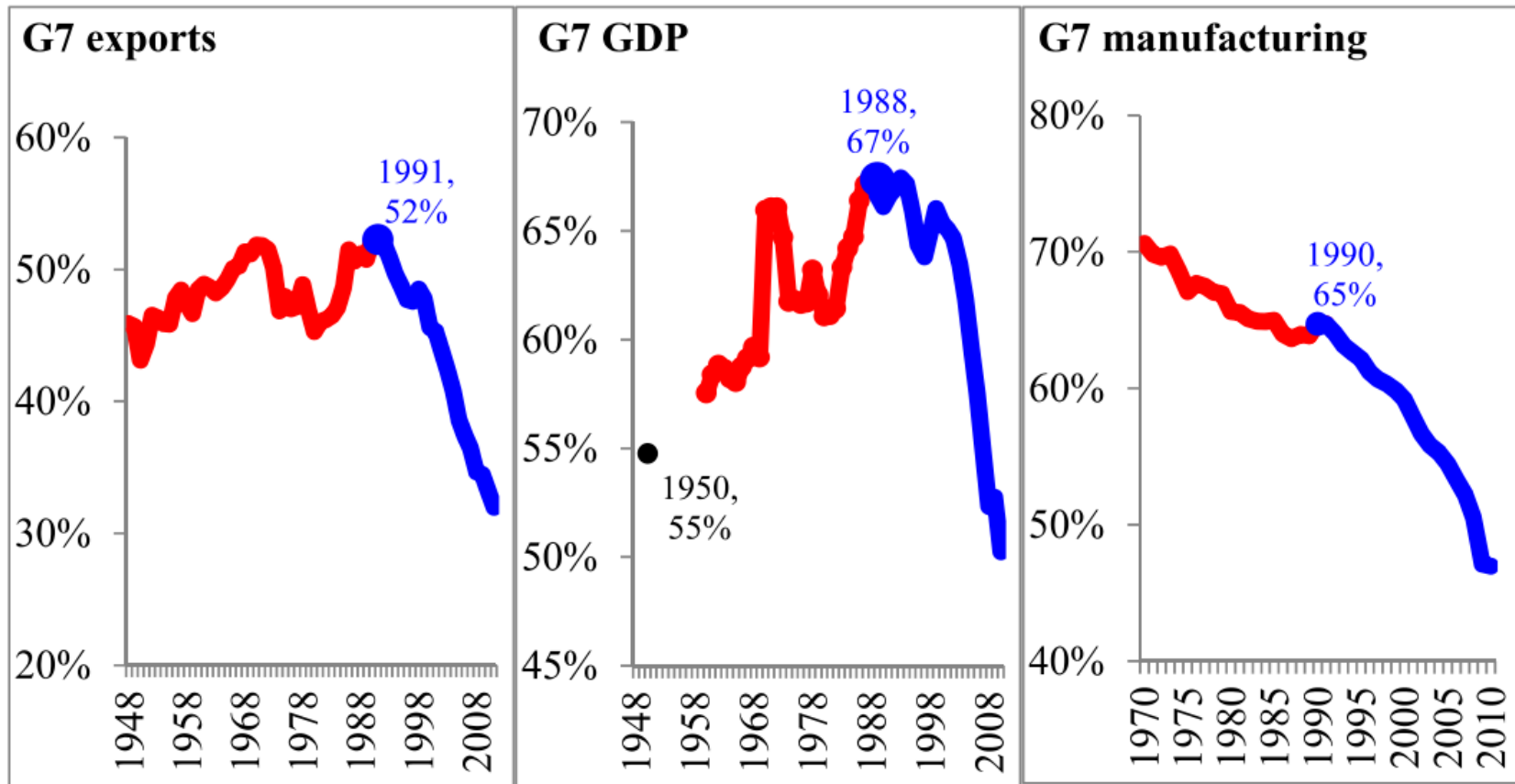
Part 2: Second Unbundling Revolution

World GDP shares, Year 1000 to 2012



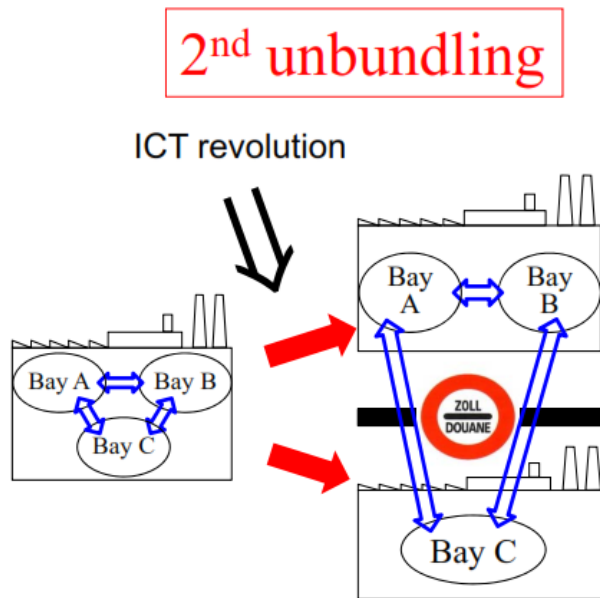
Source: Baldwin (2011)

Part 2: Second Unbundling Revolution

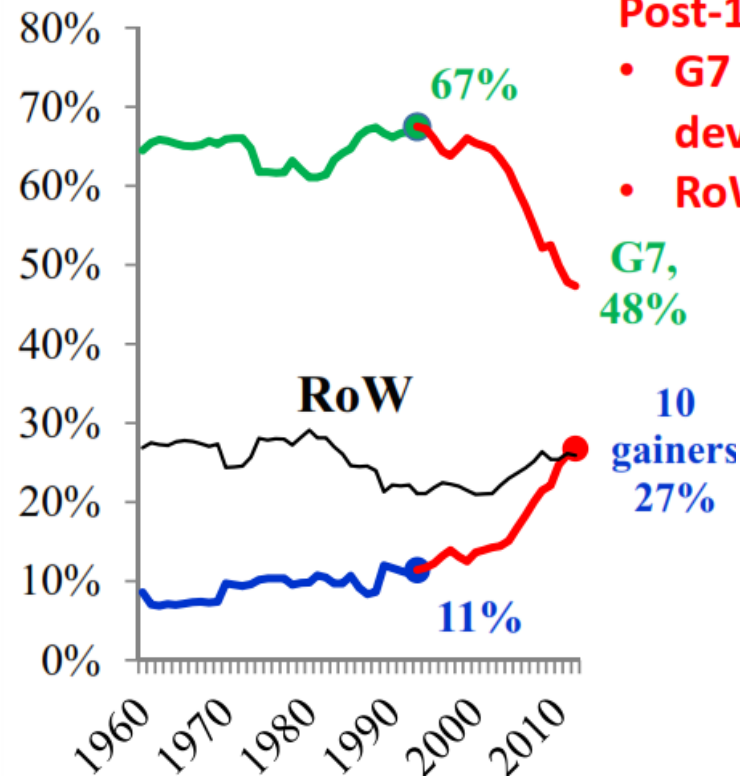


Source: Baldwin (2011)

Part 2: Second Unbundling Revolution



Dispersion of production stages, but regional clustering ('factory Asia', 'factory EU', etc.)



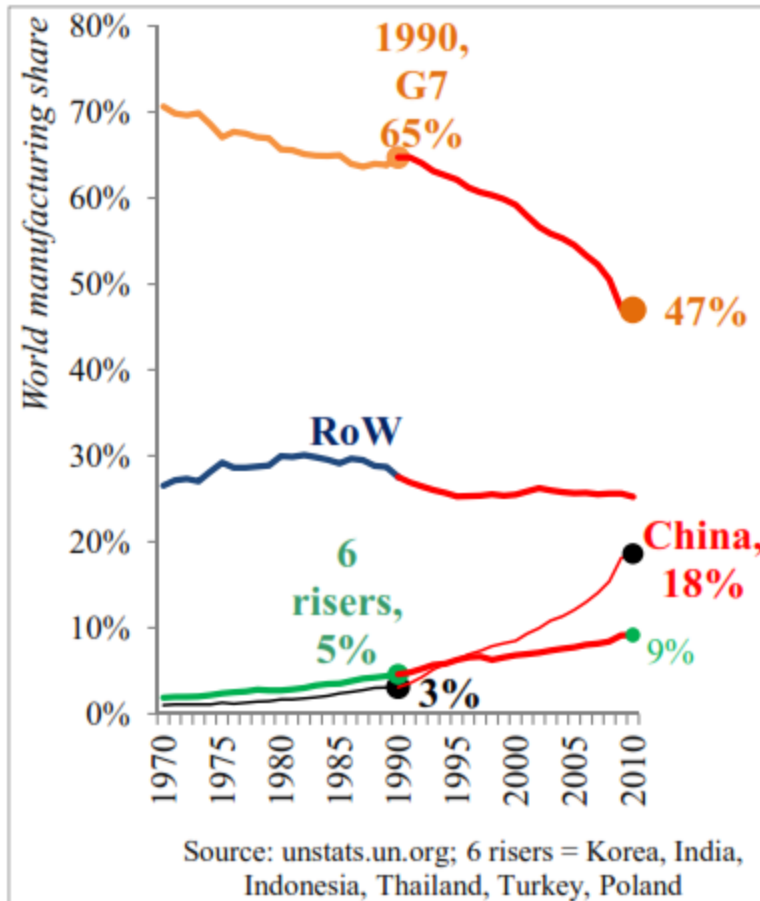
Post-1990:

- G7 share loss goes to 10 developing nations.
- RoW see little change.

China, Brazil, Mexico, Poland, India, Turkey, Russia, Korea, Indonesia, Venezuela

Source: Baldwin (2011)

Part 2: Second Unbundling Revolution

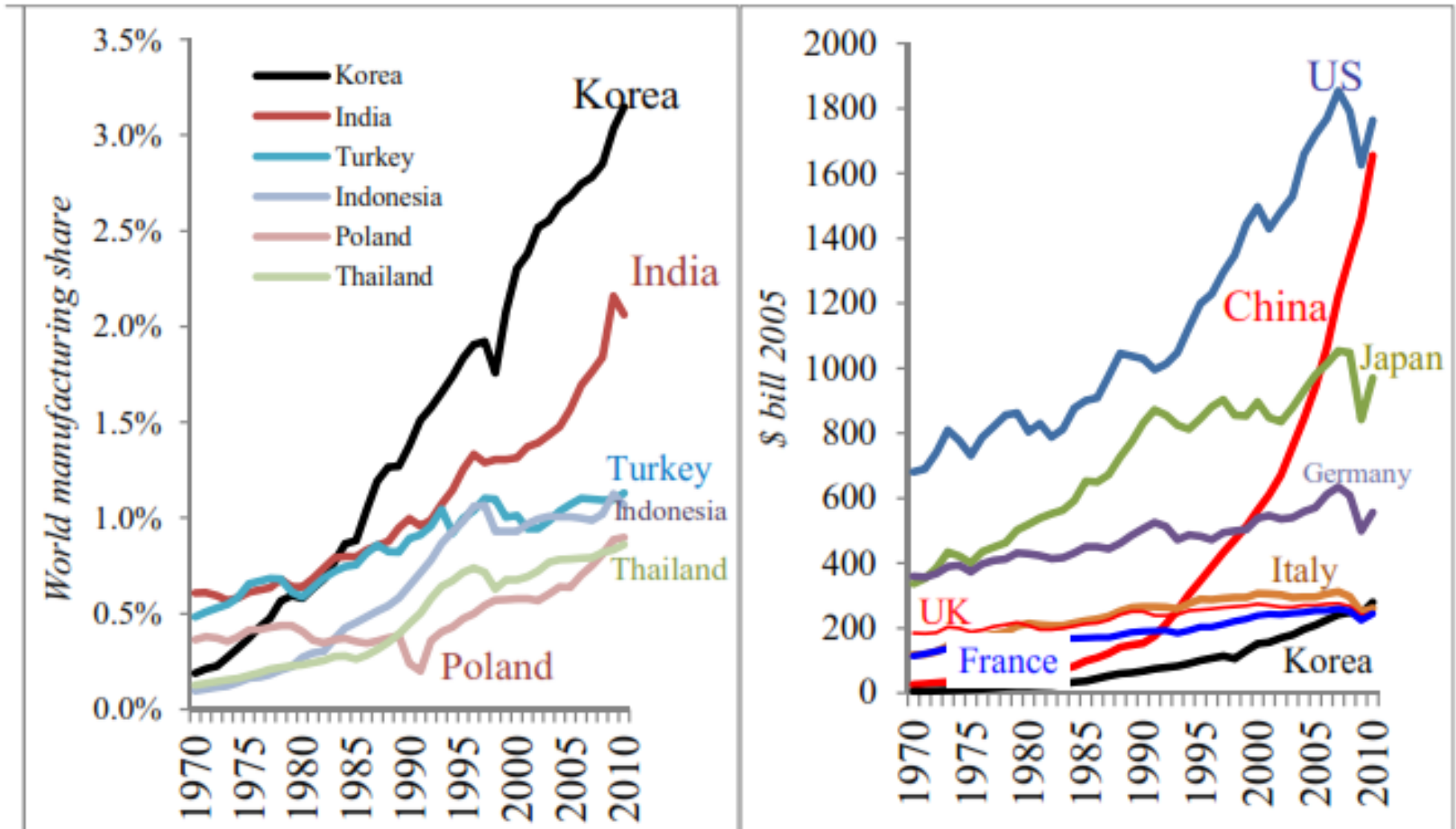


From 1990:

- G7 share loss plummets.
- RoW see little change.
- '7 risers' gain all of G7's loss.

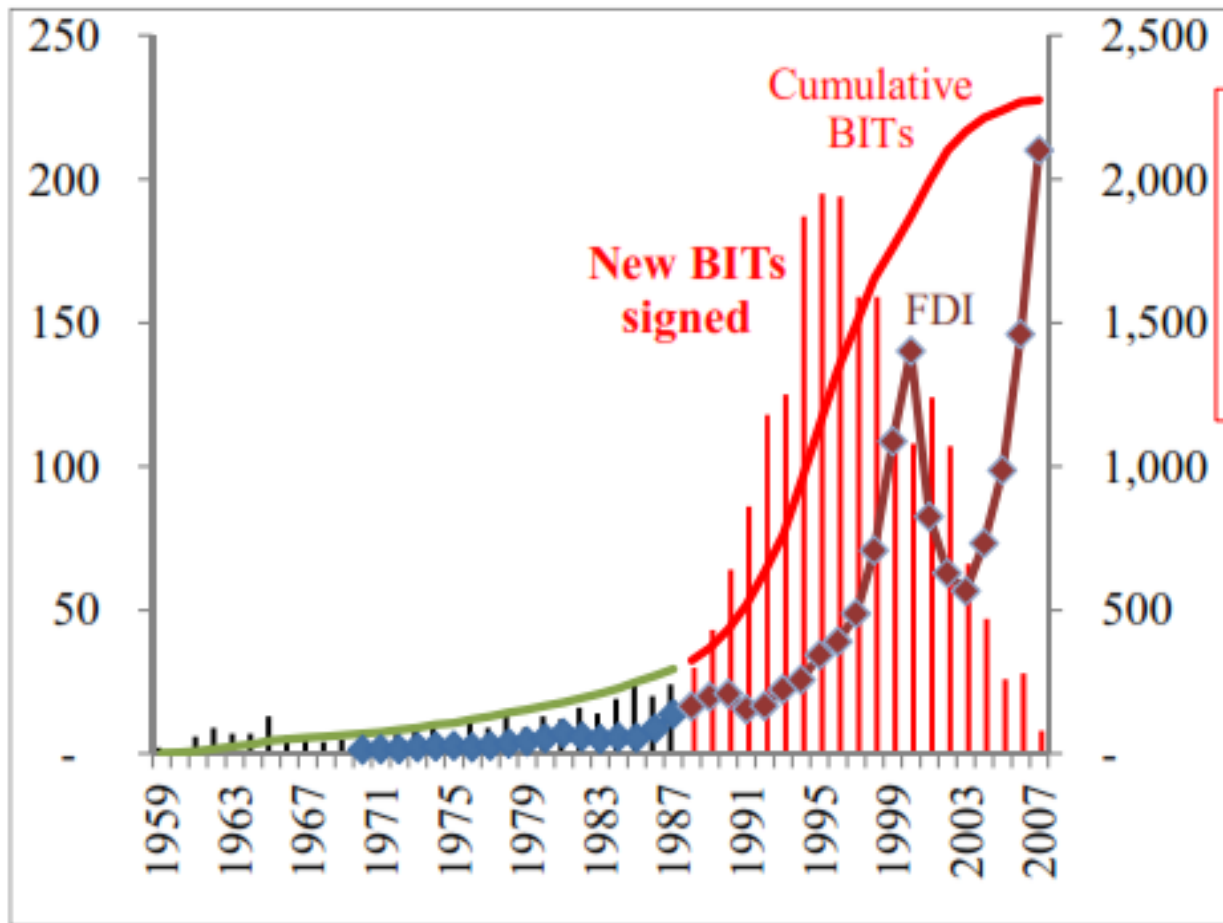
Source: Baldwin (2011)

Part 2: Second Unbundling Revolution



Source: Baldwin (2011)

Part 2: Second Unbundling Revolution



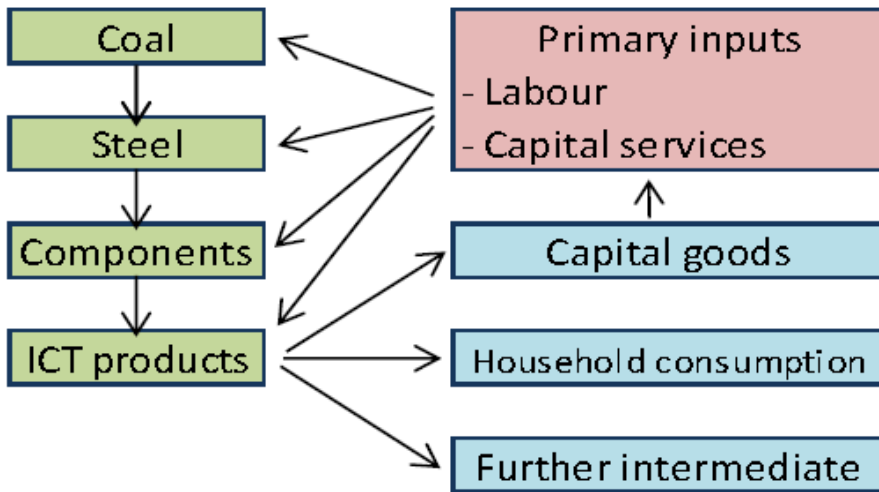
1987 – 2007:

- Number of BITs signed booms;
- FDI booms

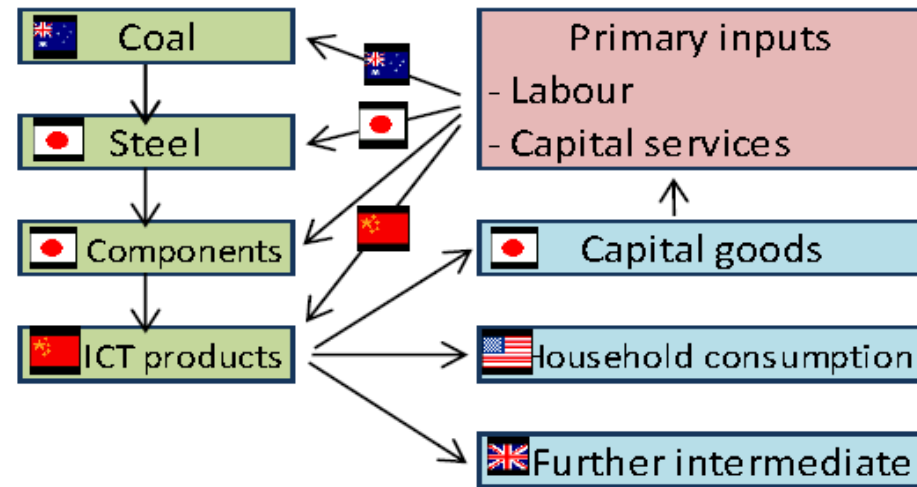
Source: Baldwin (2011)

Global Value Chain (GVC)

Domestic production network



International production network



Source: Baldwin (2011)

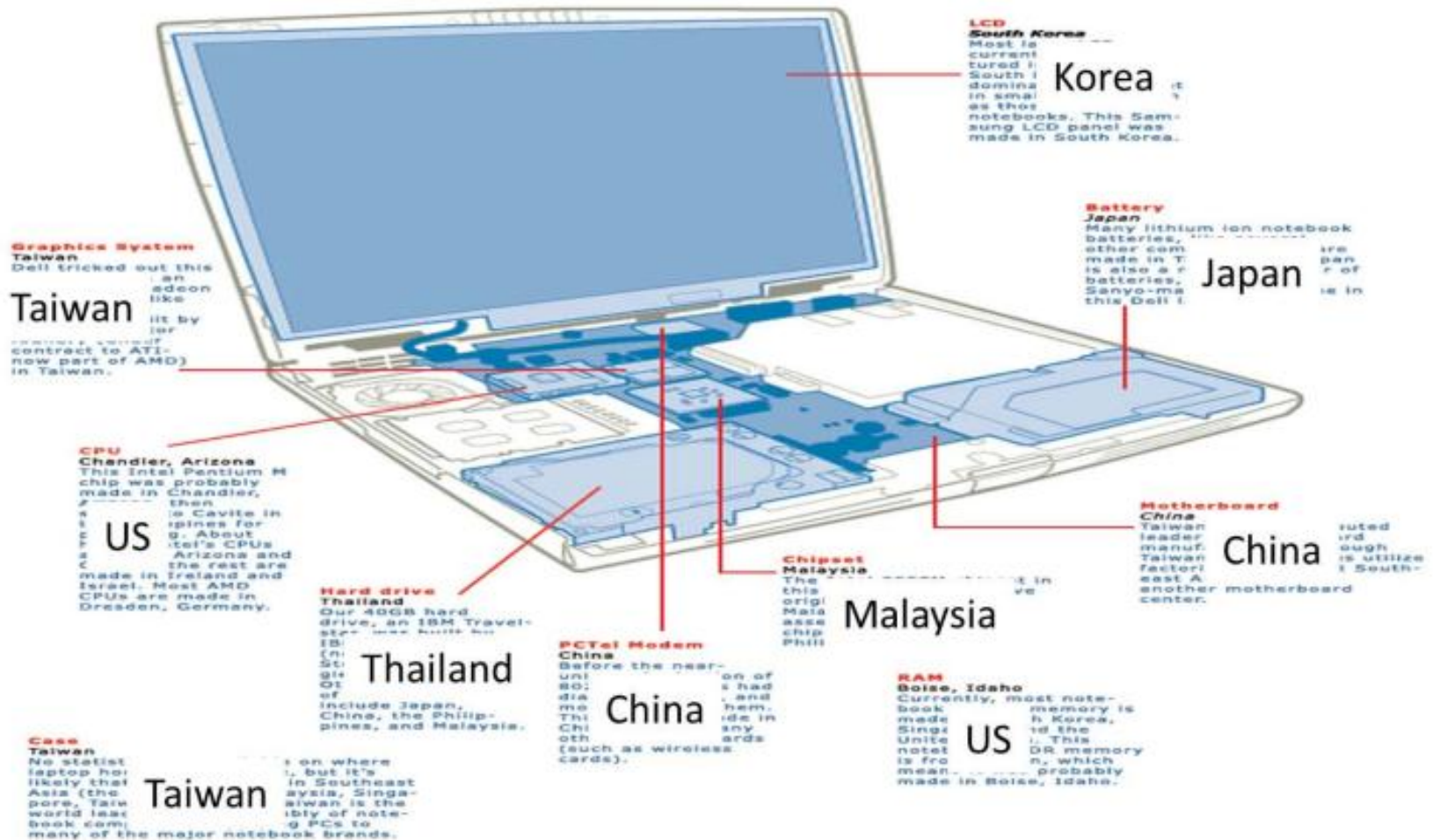
Apple IIc made in Dallas area, 1980s



Apple's know-how + Chinese labour



Fractionalisation of manufacturing



Global Value Chain (GVC)

- Linden (2009), Xing and Detert (2010) , Dedrick (2010), Linden (2011) have analyzed the value chain of producing iPod and iPhone :

Country	Components	Manufacturers	Costs
Chinese Taipei	Touch screen, camera	Largan Precision, Wintek	\$ 20.75
Germany	Baseband, power management, transceiver	Dialog, Infineon	\$ 16.08
Korea	Applications processor, display, DRAM memory	LG, Samsung	\$ 80.05
United States	Audio codec, connectivity, GPS, memory, touchscreen controller	Broadcom, Cirrus Logic, Intel, Skyworks, Texas Instruments, TriQuint	\$ 22.88
Other	Other	Misc.	\$ 47.75
		Total	\$ 187.51

Source: Xing and Detert (2010)

Global Value Chain (GVC)

Betting on Displays

Apple supplier Foxconn is in talks to make smartphone screens, the most expensive parts in iPhones.

Apple iPhone 6

COST OF SELECTED PARTS

Display	\$45
Memory	15
Communications	37.50
Cameras	11
Processor	20
Mechanical	30
Other	37.60

TOTAL PARTS \$196.10

Labor 4

TOTAL \$200.10

U.S. RETAIL PRICE \$649



Sources: IHS iSuppli (price), Apple (photo)
The Wall Street Journal

Apple iPhone 6 Plus

COST OF SELECTED PARTS

Display	\$52.50
Memory	15
Communications	37.50
Cameras	12.50
Processor	20
Mechanical	35
Other	38.60

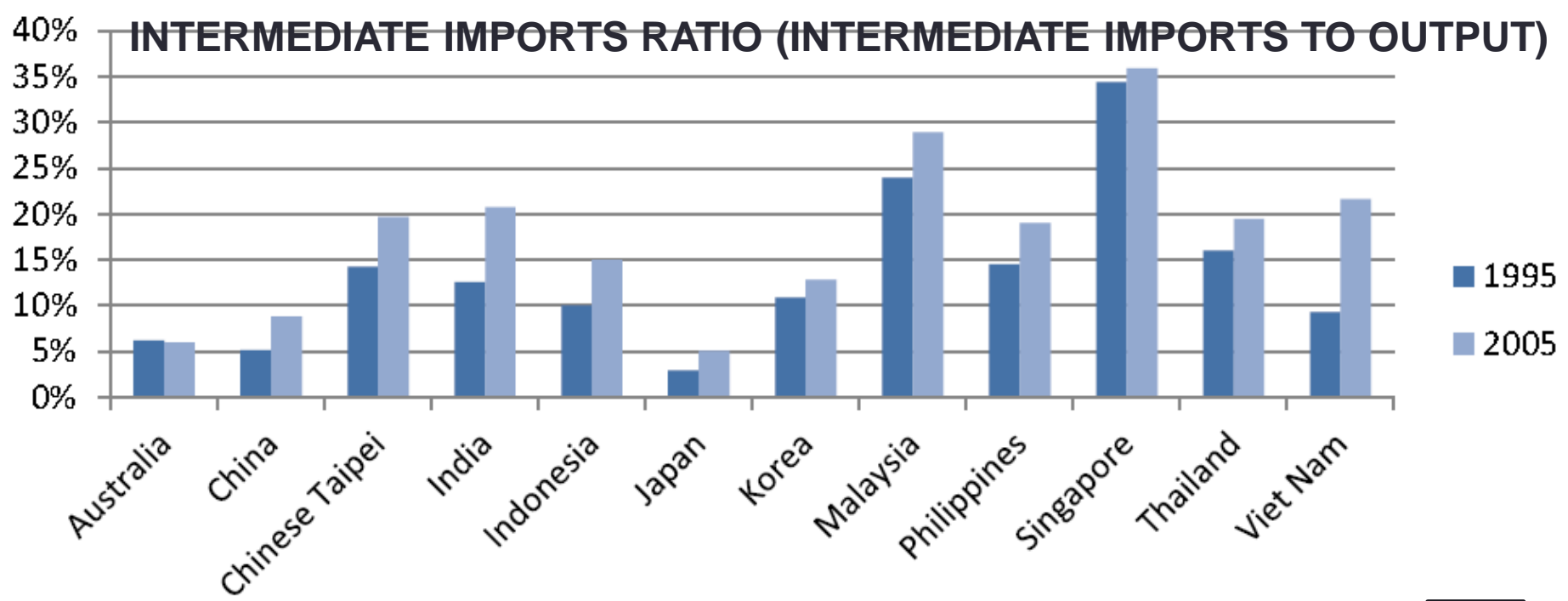
TOTAL PARTS \$211.10

Labor 4.50

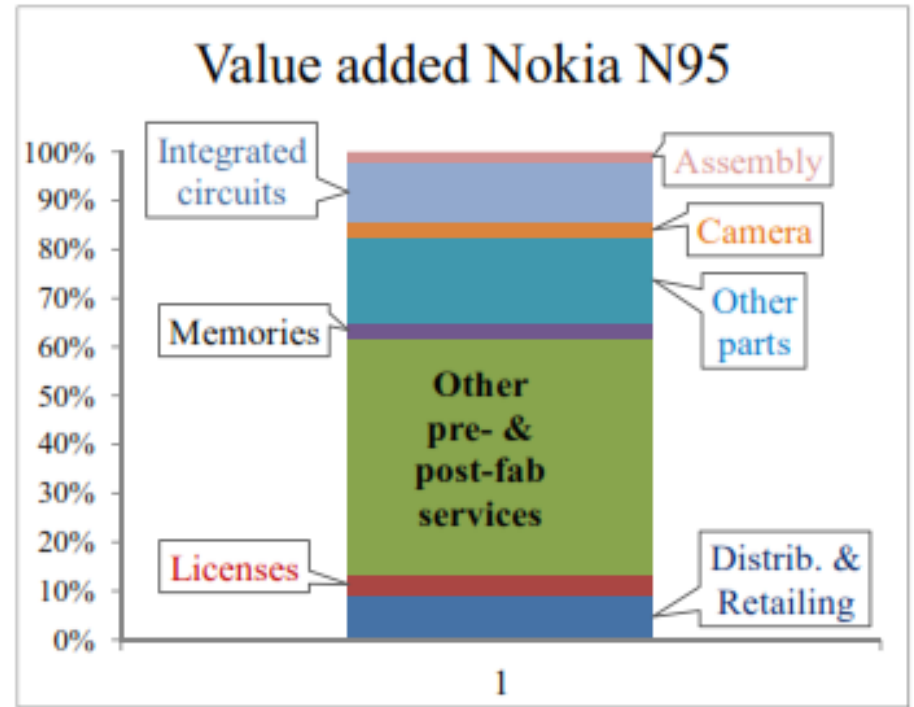
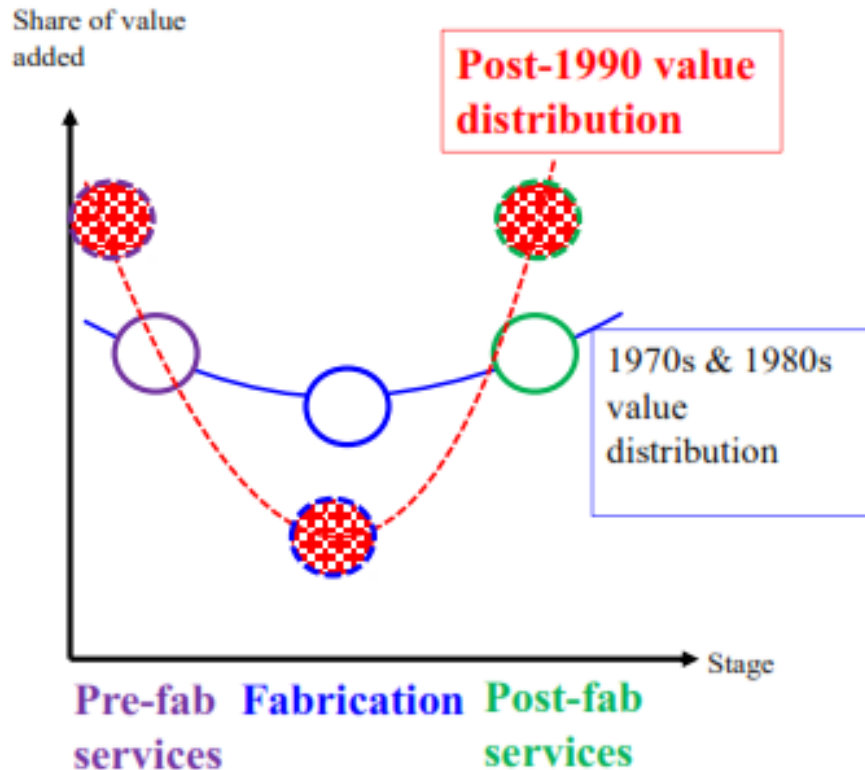
TOTAL \$215.60

U.S. RETAIL PRICE \$749

Note: Both price breakdowns are based on the 16 GB Sprint model without contract



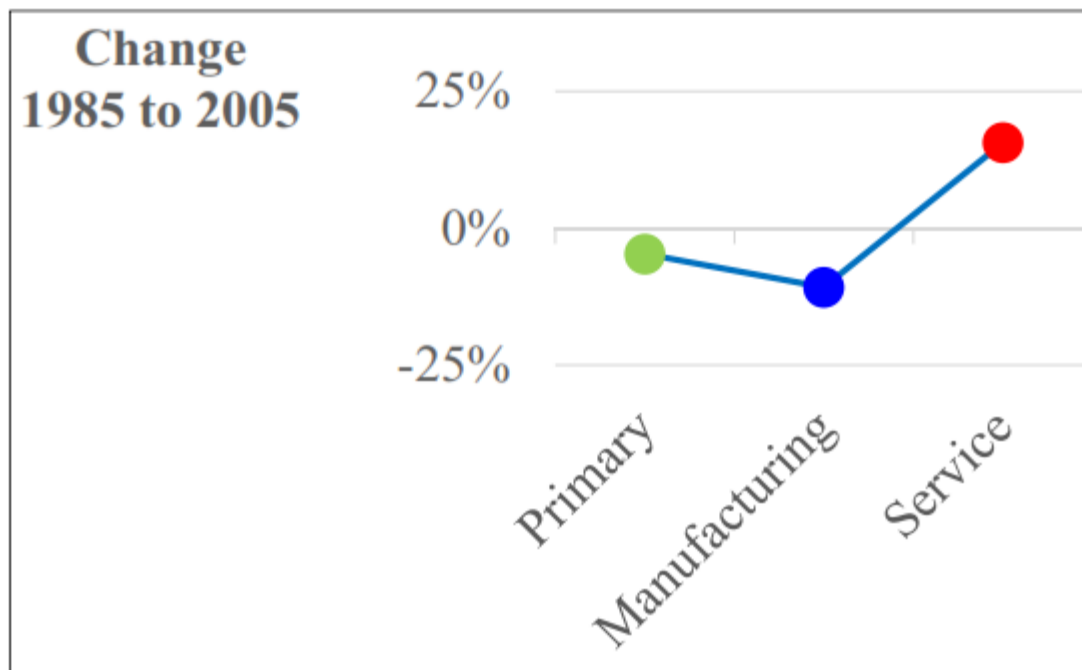
Smiling Curve and Value Added



Source: Baldwin (2011)

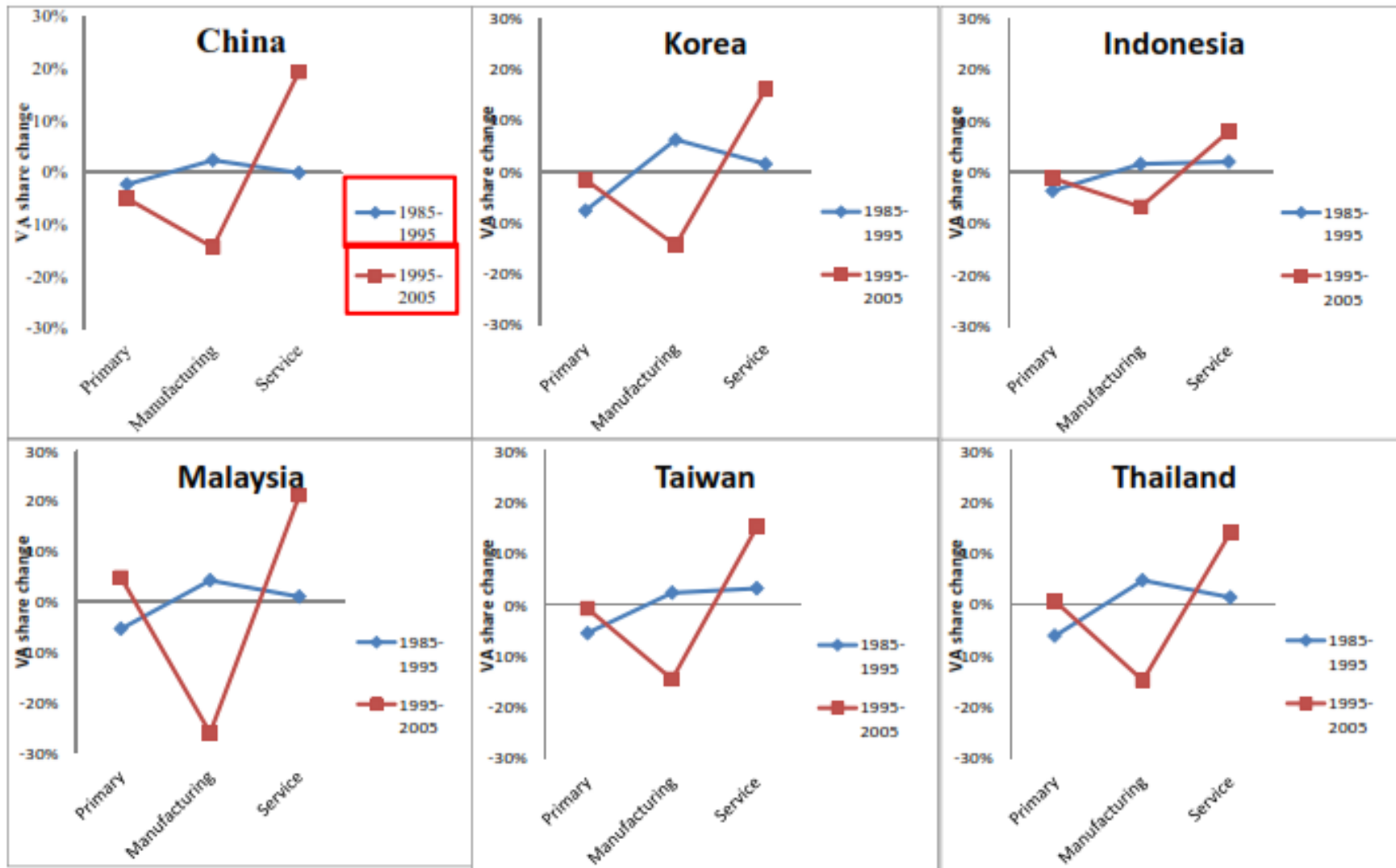
Smiling Curve and Value Added

Smile curve: Look at the change in source sector value added



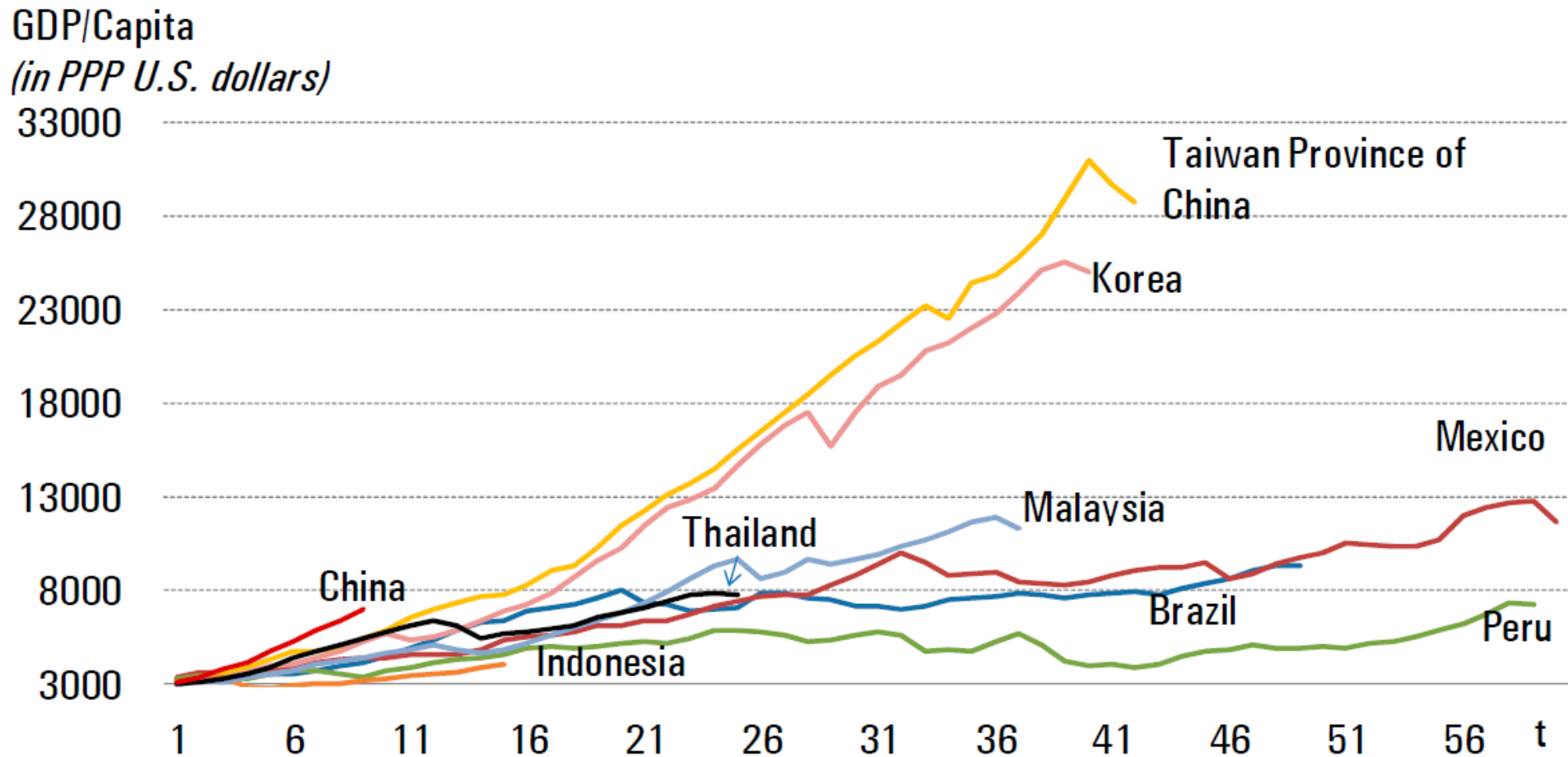
Source: Baldwin (2011)

Smiling Curve and Value Added



Source: Baldwin (2011)

Cross-Country Comparison



Source: IMF staff calculations.

* t=0 is defined as the year when the GDP per capita for a particular country reached 3000 U.S. dollars in PPP terms.

WE2-1 Years of Asian Economies Shifting to High-Income or Upper Middle-Income Countries

Item Country	Grouping	Per Capita Nominal GNI (2012)	Per Capita Nominal GNI (1995)	The year of entering into a group		
				High-Income	Upper Middle- Income	Lower Middle- Income
Japan	High-Income	47,870	41,350	1967	Before 1962	...
Singapore	High-Income	47,210	22,420	1981	Before 1962	...
Hong Kong	High-Income	36,560	22,619	1978	Before 1962	...
Taiwan	High-Income	20,083	12,648	1988	1973	Before 1962
Korea, Republic	High-Income	22,670	10,770	1993	1978	Before 1962
Malaysia	Upper Middle	9,820	4,010	—	1979-86, 1991	Before 1962, 1987-90
China	Upper Middle	5,720	530	—	2010	1998
Thailand	Upper Middle	5,210	2,720	—	2010	1966
Indonesia	Lower Middle	3,420	980	—	—	1979
Philippines	Lower Middle	2,500	1,030	—	—	Before 1962
India	Lower Middle	1,550	370	—	—	2007
Vietnam	Lower Middle	1,550	288	—	—	2008
Laos	Lower Middle	1,270	360	—	—	2010

Source: Suehiro (2014), *Studies on Emerging Asian Economies: Beyond the Catch-up Industrialization*, Iwanami Publisher, p.128 (in Japanese). Up-dating the figure of per capita GNI in 2012.