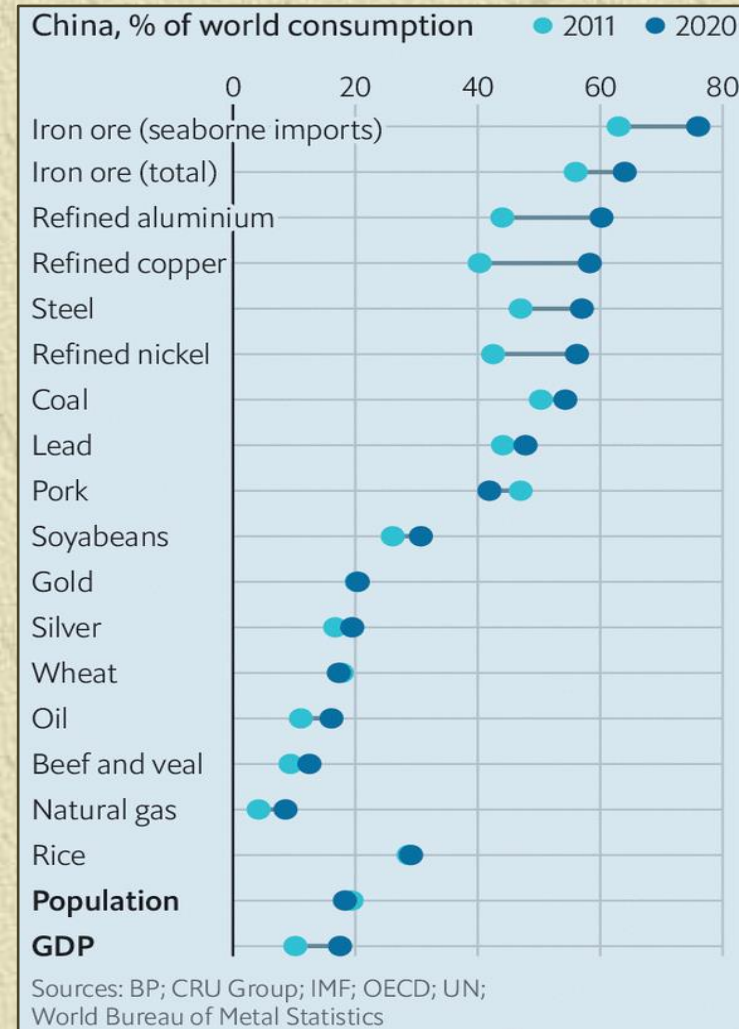


# 4. H-O-S 2 x 2 x 2 Trade Model

## ✦ Large-country case: China

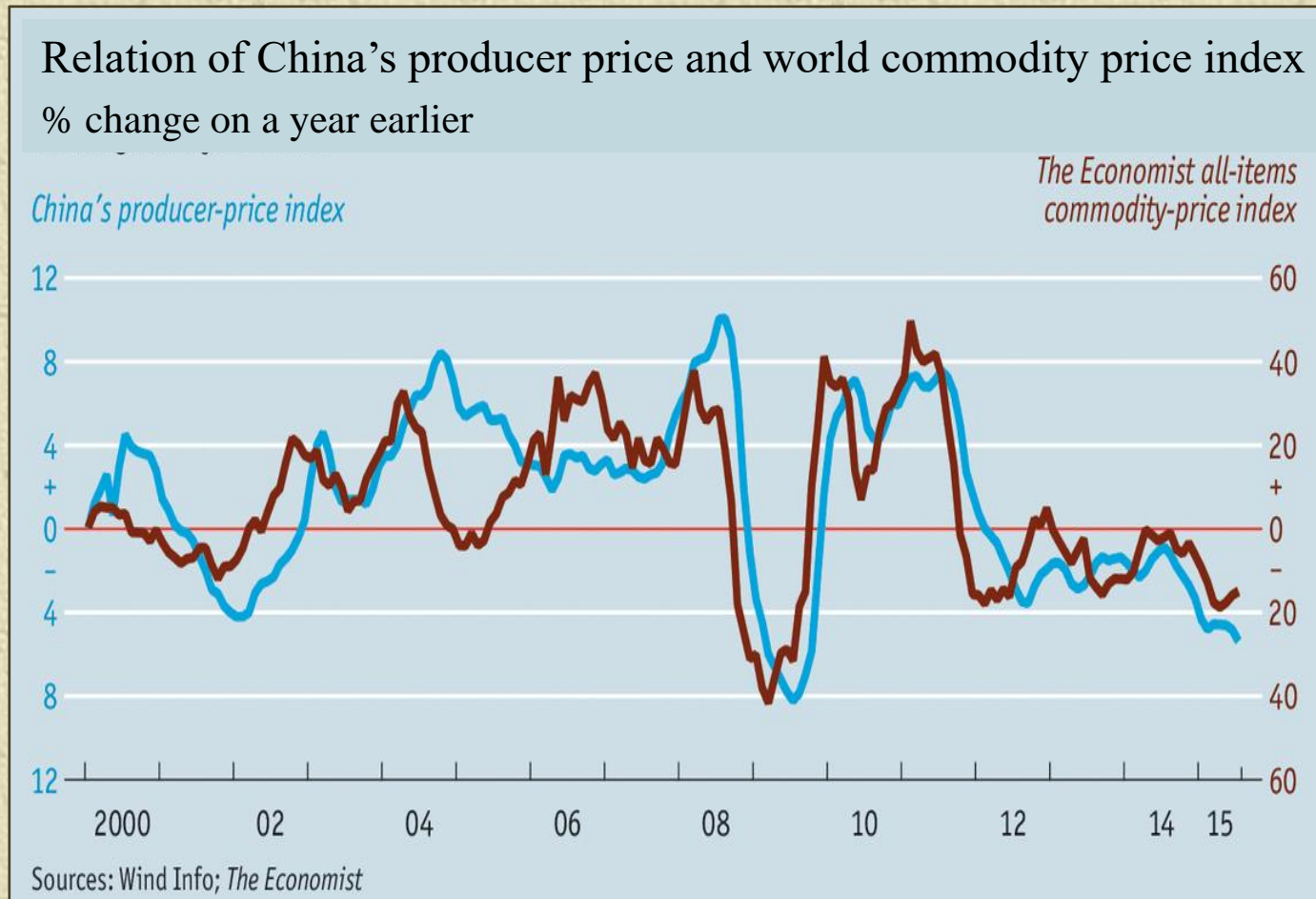
- ◆ China's share of world consumption, selected goods



*Economist*, “China and commodities: Material clout”, 20 Nov 2021, p. 65-6.

# H-O-S 2 x 2 x 2 Trade Model, continued . . .

- ◆ TOT: relation of prices in China and world prices

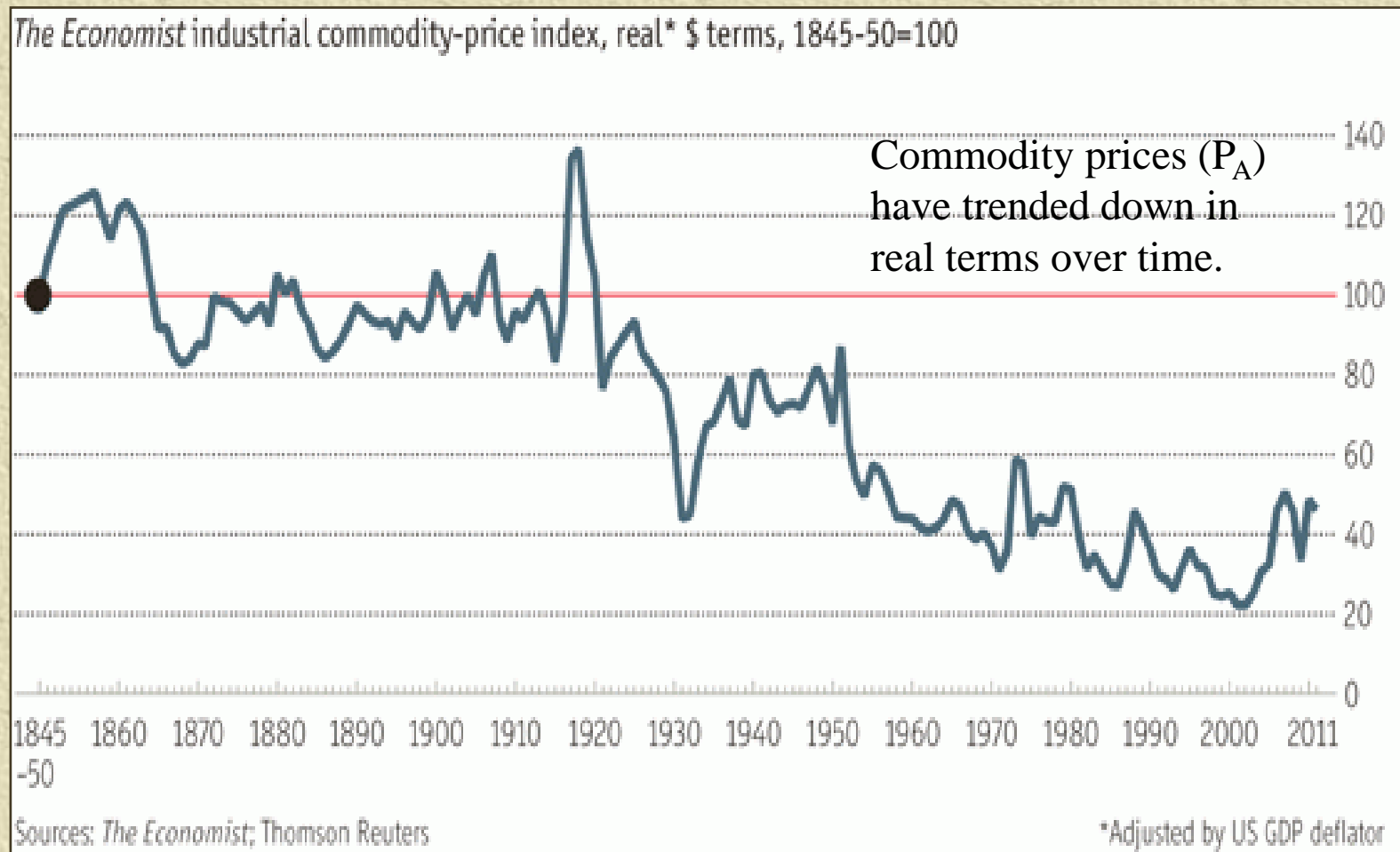


China's manu production is large relative to world. There is co-movement between  $[P_{\text{manu}}]_{\text{China}}$  and  $[P_{\text{commod}}]_{\text{Wld}}$ . An  $\uparrow [P_{\text{manu}}]_{\text{China}} \rightarrow \uparrow Q_{\text{manu}}$  which, in turn, implies  $\uparrow D$  for commodity input and  $\uparrow [P_{\text{commod}}]_{\text{Wld}}$  could suggest a large-country case.



# H-O-S 2 x 2 x 2 Trade Model, continued . . .

- ✦ Declining TOT from commodity exporter perspective
  - ◆ Industrial commodity-price index, real \* \$ terms

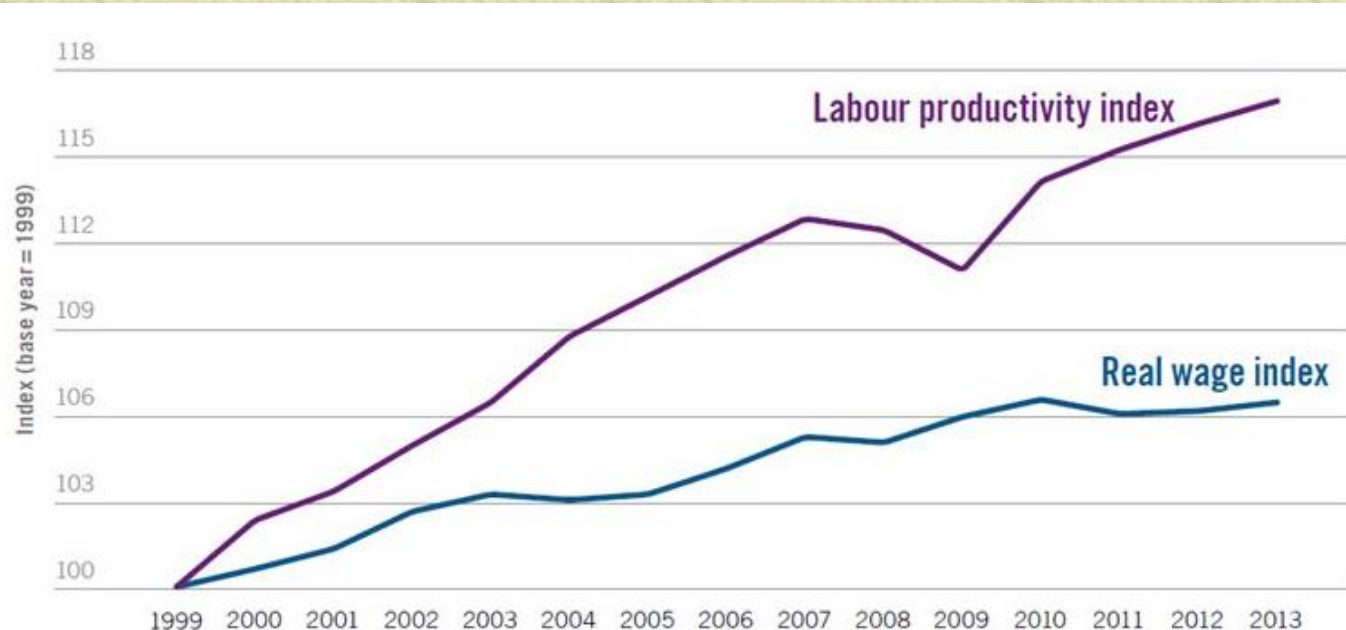


# 6. H-O-S Model: Theory vs Empirical Findings

## 6.2 Labor mkt performance: wages, employment, income

### ✦ Factors affecting wages

- ✦ Trends in L productivity growth and avg wages, 1999-2013
  - OECD average



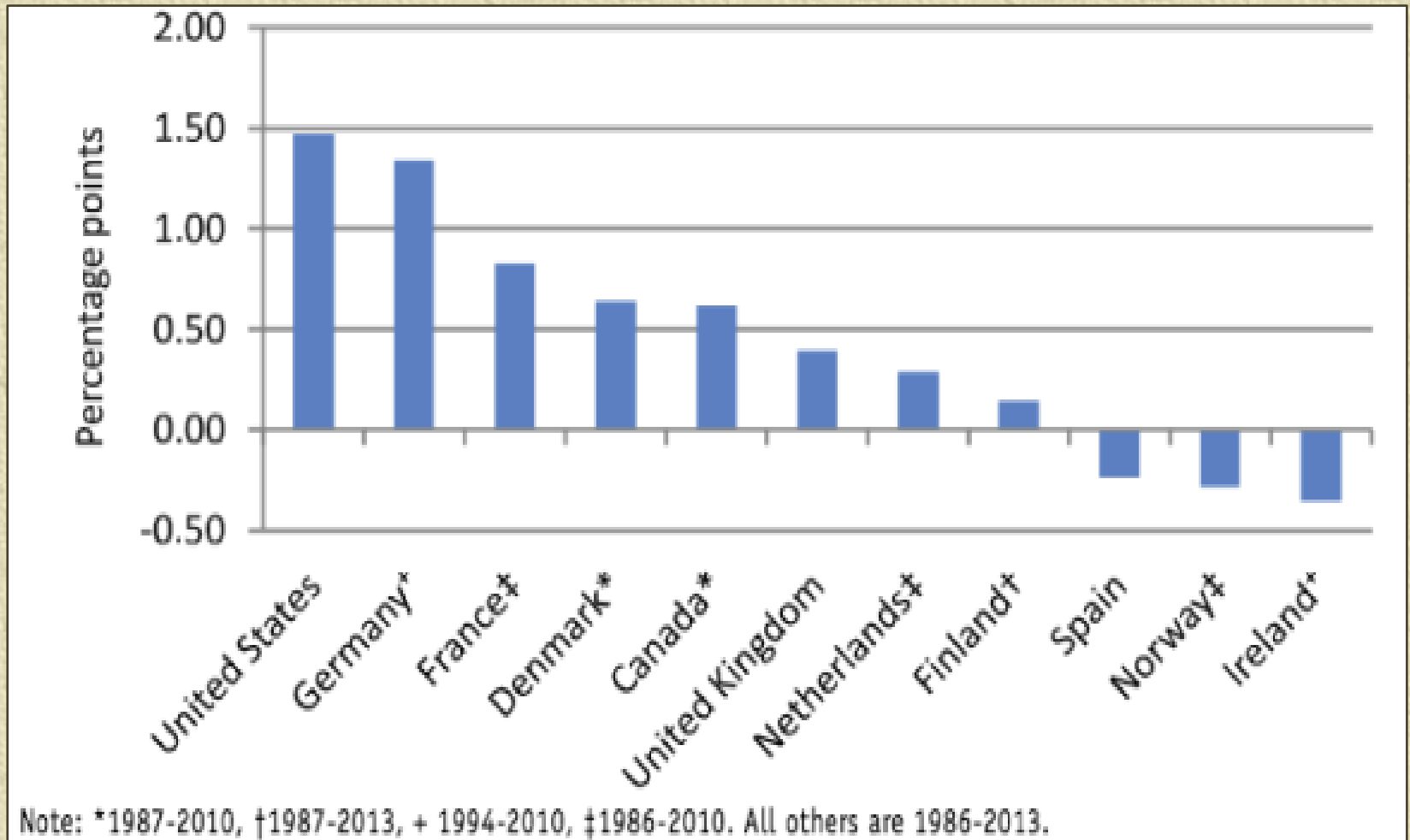
Note: Wage growth is calculated as a weighted average of year-on-year growth in average monthly real wages in 36 economies (for a description of the methodology, see Appendix I). Index is based to 1999 because of data availability.

Sources: ILO Global Wage Database; ILO *Trends Econometric Models*, Apr. 2014. Data accessible at: [www.ilo.org/gwr-figures](http://www.ilo.org/gwr-figures)

Source: ILO Global Wage Report 2014/15.

# H-O-S Model: Theory vs Empirical Findings

- Productivity-wage gap, selected countries disaggregated, 1986-2013



Source: Sharpe & Ugucioni, "Decomposing the productivity-wage nexus", *Int'l Producty Monitor*, 2017(32).



# H-O-S Model: Theory vs Empirical Findings

- Asian labor markets

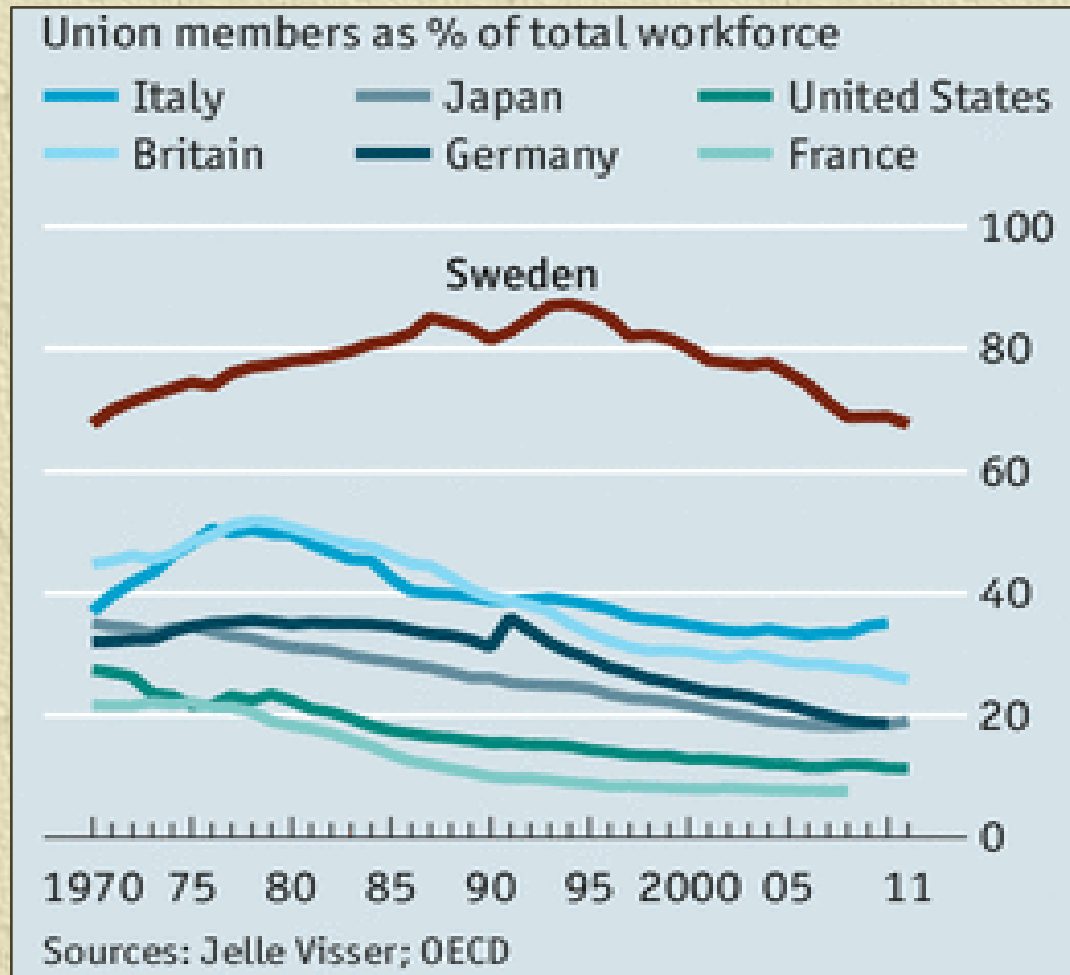


The % $\Delta$  wage growth, on average, is higher than prodvty in China and other fast-growing Asian countries.

Where L prodvty is low and wage growth is higher can signal a loss of competitiveness.

# H-O-S Model: Theory vs Empirical Findings

## ◆ Market power-bargaining power: L union strength



OECD economies decline in L-union membership

- ↓ by ½ from 1980 to 2011
- UK: wage premium of L union ↓ from 18% to 2%

Countries most exposed to globalization experienced biggest loss in L-union power

Shift from manu to services affected union strength/membership too

# H-O-S Model: Theory vs Empirical Findings

## ✦ Issue 1: Wage flexibility, inequality and employment



The more equal are wages, the higher is unemployment.

The less equal is pay, the less unemployment.

*Economist*, “Economics focus: Jobs and wages revisited”, 17 Aug 1996, p. 72.

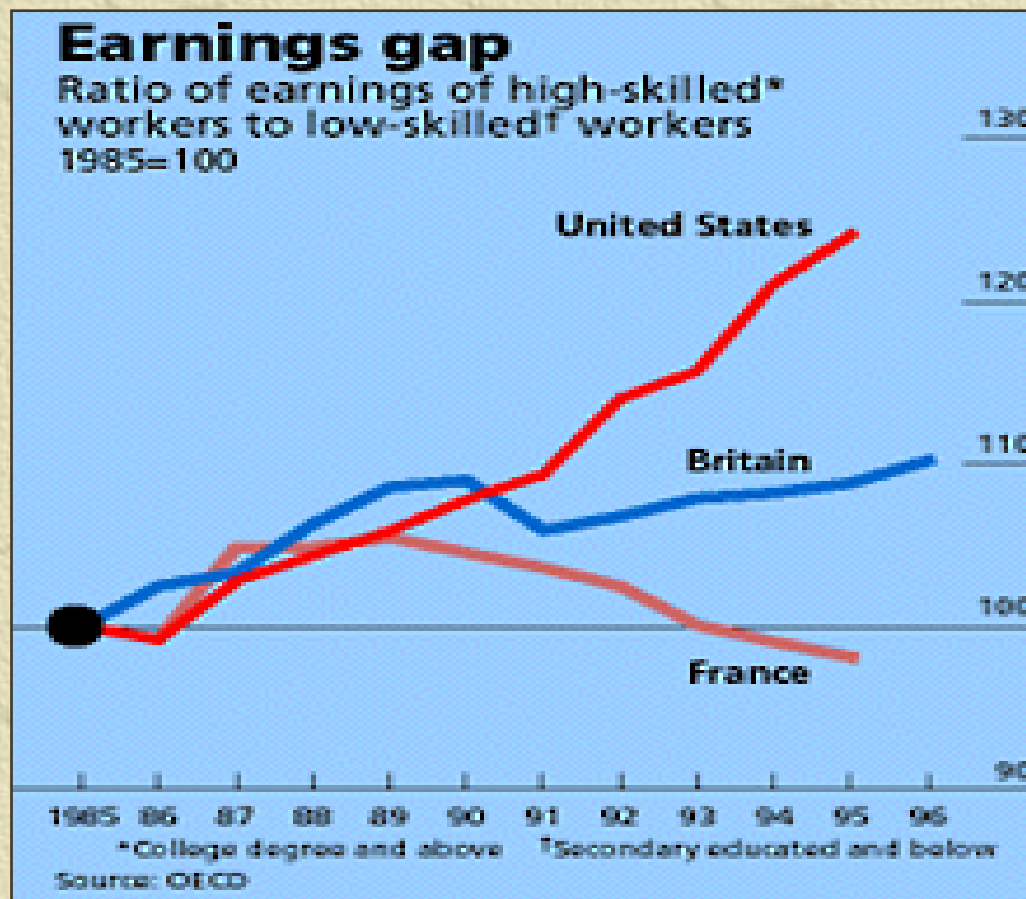


# H-O-S Model: Theory vs Empirical Findings

✦ Issue 2. How does N-S trade affect wage gaps (inequality)?

◆ Implications for North

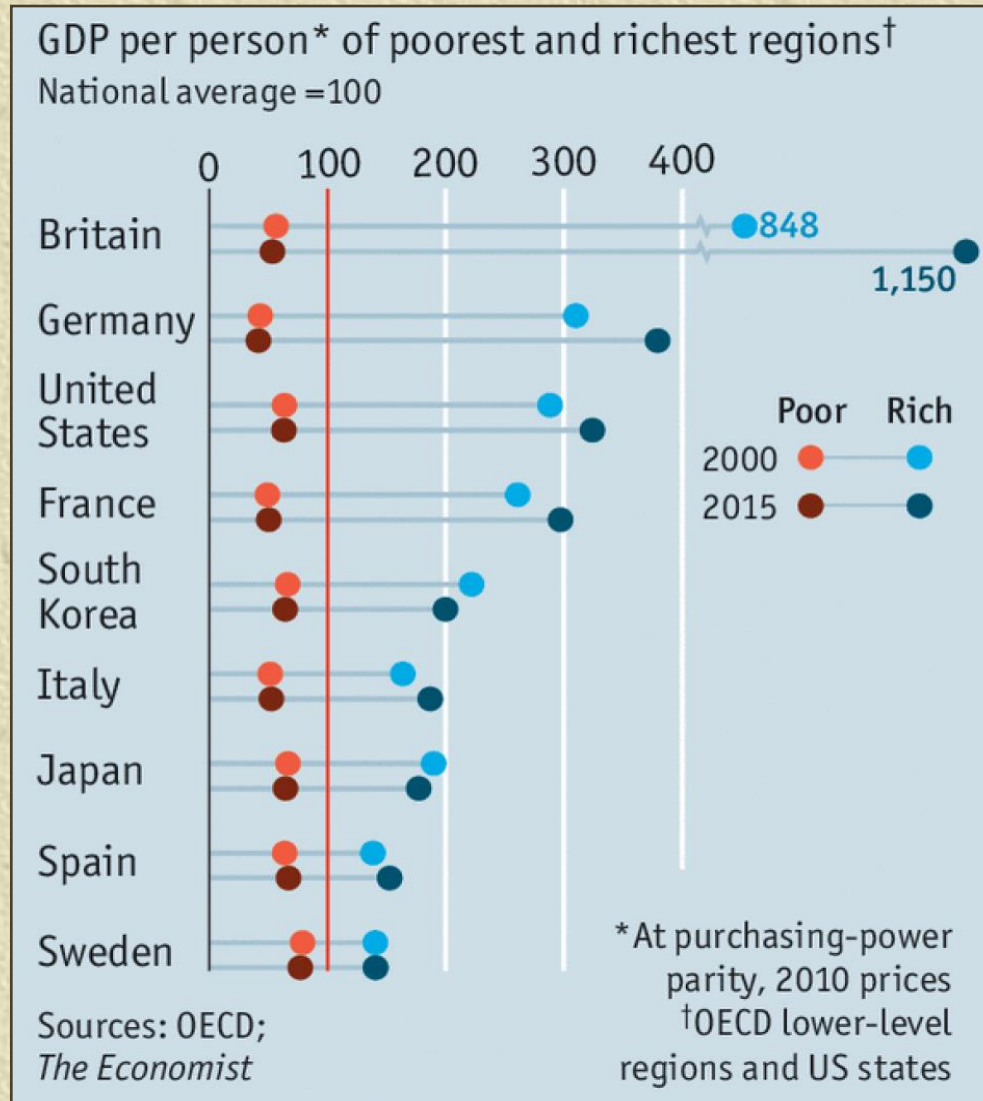
- ↑ W-inequality, skilled vs unskilled L



Poor areas within a country fared worse than richer areas (unskilled L worse off relative to skilled L)

# H-O-S Model: Theory vs Empirical Findings

- Regional wage disparity ↑ in developed economies



L mobility has a positive and negative side:

- Allows workers to move to where wages are higher and where jobs are available
- Regions negatively hit by recession or structural changes can be drained of talented workers (youth)

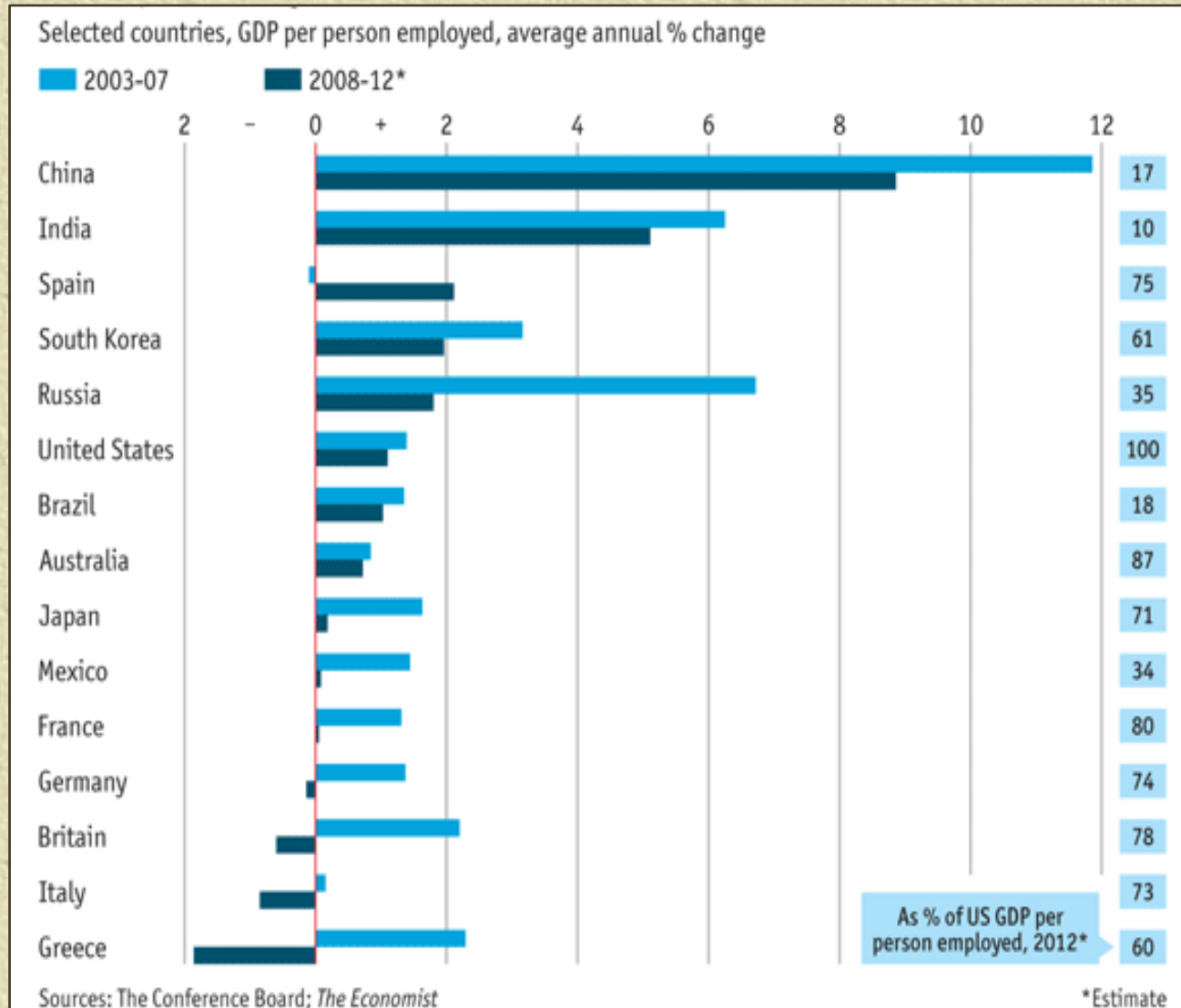
Regional disparities within a country are associated with a concentration of losses

Industry concentration has made regional disparities worse



# H-O-S Model: Theory vs Empirical Findings

- ↓ returns to labor, but across all countries

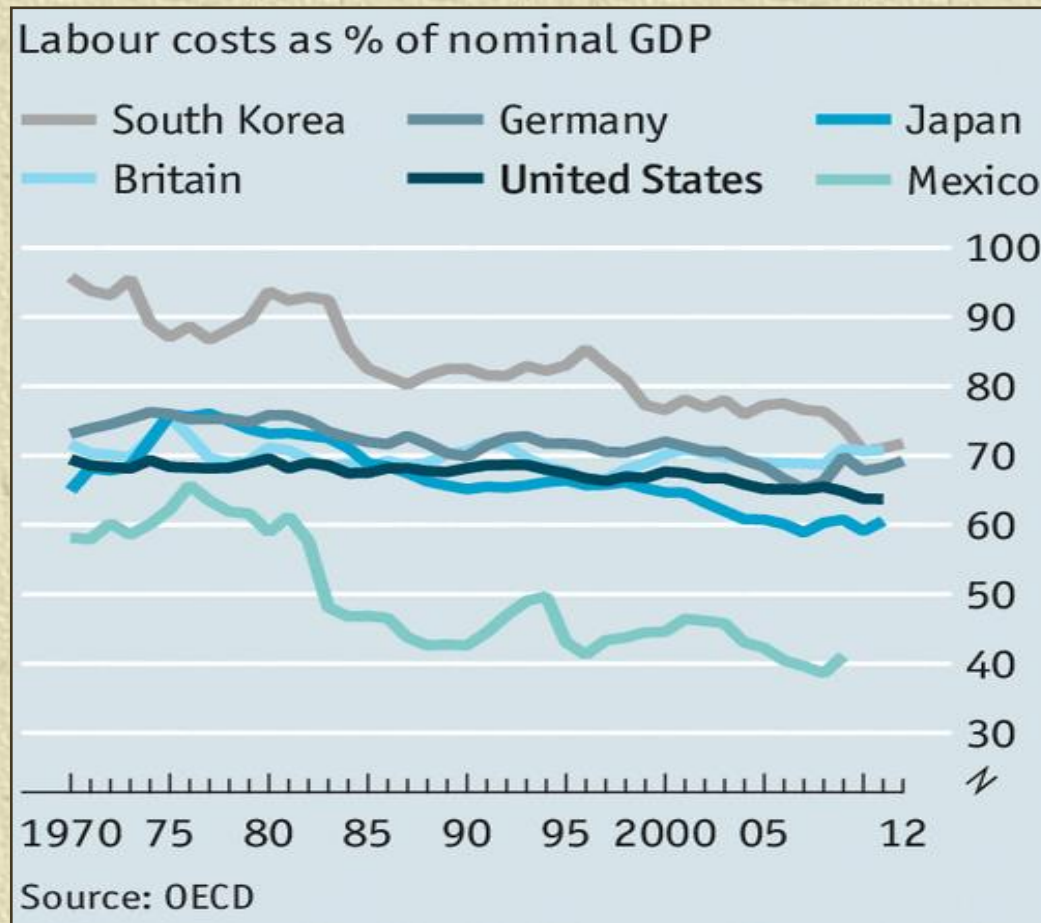


Since 2003 and comparing before and after the global financial crisis, the returns to labor have decreased across all types of countries (rich and poor)

Spain is the exceptional case.

# H-O-S Model: Theory vs Empirical Findings

- Labor costs, share of national income



↑ L prodvty no longer implies a broad ↑ pay  
In 1930s-40s, income equality improved in US and Europe.

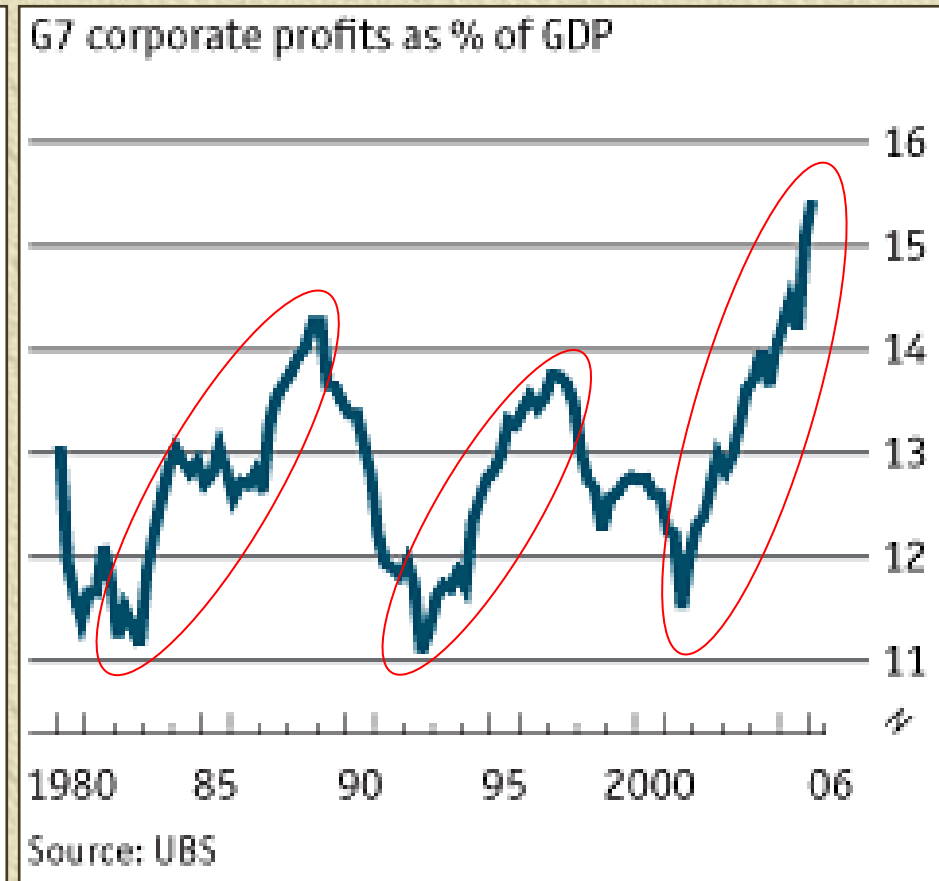
- ↑ income gap between North and South
- except for Japan, S. Korea and Taiwan

1980s: Trend goes into reverse. Emerging mkts grow faster than developed; ↑ income gaps within countries.



# H-O-S Model: Theory vs Empirical Findings

- ◆ Trends in returns to labor, North
- ◆ Trends in returns to capital, North



Greater reliance on trade is factor affecting ↓ L share; regions/industry exposed to globalization (import competition) had bigger ↓ L share

# H-O-S Model: Theory vs Empirical Findings

## ◆ Implications for South

- Wage growth in emerging Asia

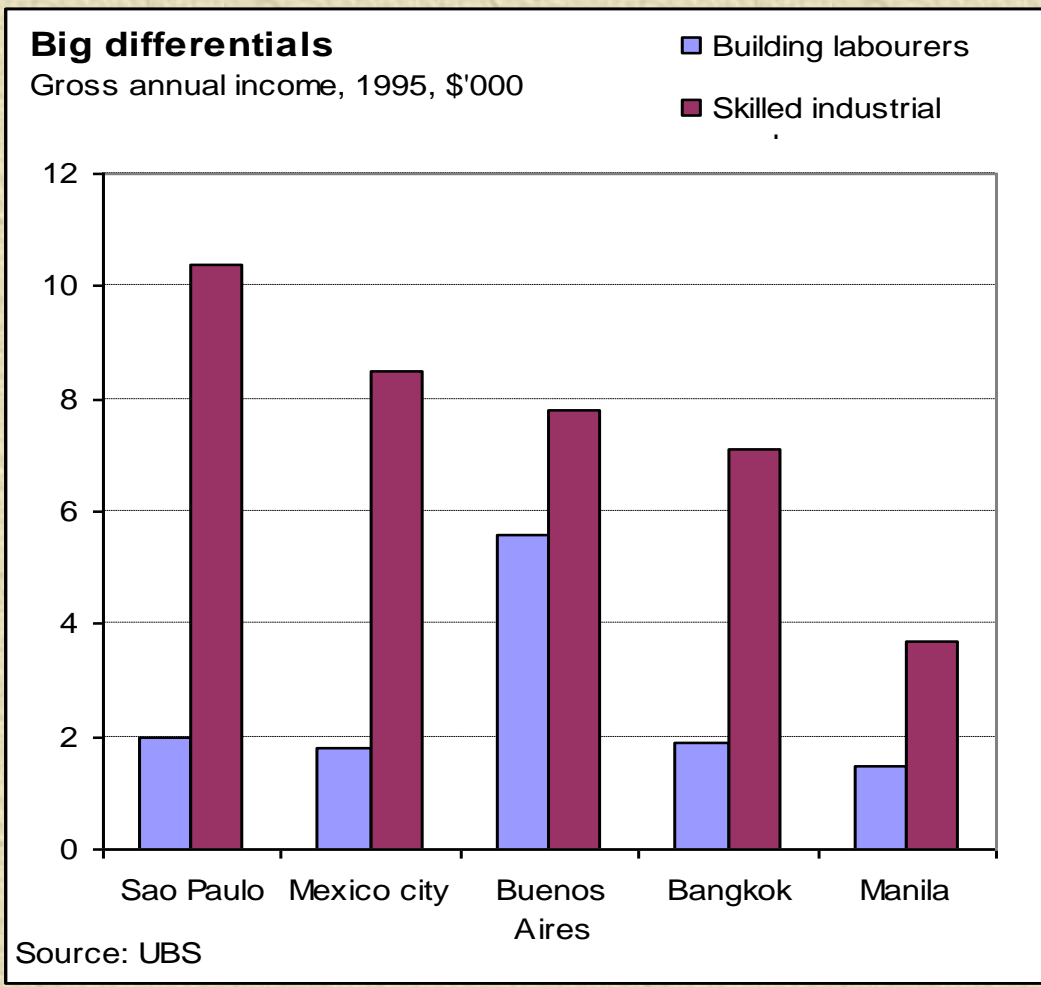


Wage growth fastest in most trade reliant countries.



# H-O-S Model: Theory vs Empirical Findings

- High W-inequality



Source: *Economist*, "Economics focus: Trade and wages", 7 Dec 1996

# H-O-S Model: Theory vs Empirical Findings

- Measure of income inequality, highest in South



Model assumes no int'l K, L mobility which is false.

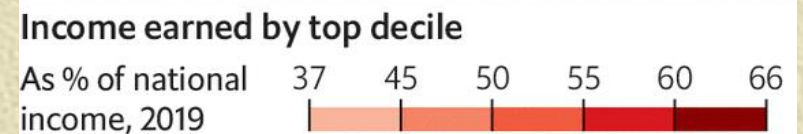
How does K mobility affect wage inequality in South?



# H-O-S Model: Theory vs Empirical Findings

- Disaggregating income inequality in Africa, by country

Within Africa the most unequal countries are in southern Africa where the top 10<sup>th</sup> income decile earn 65% of national income, on average.

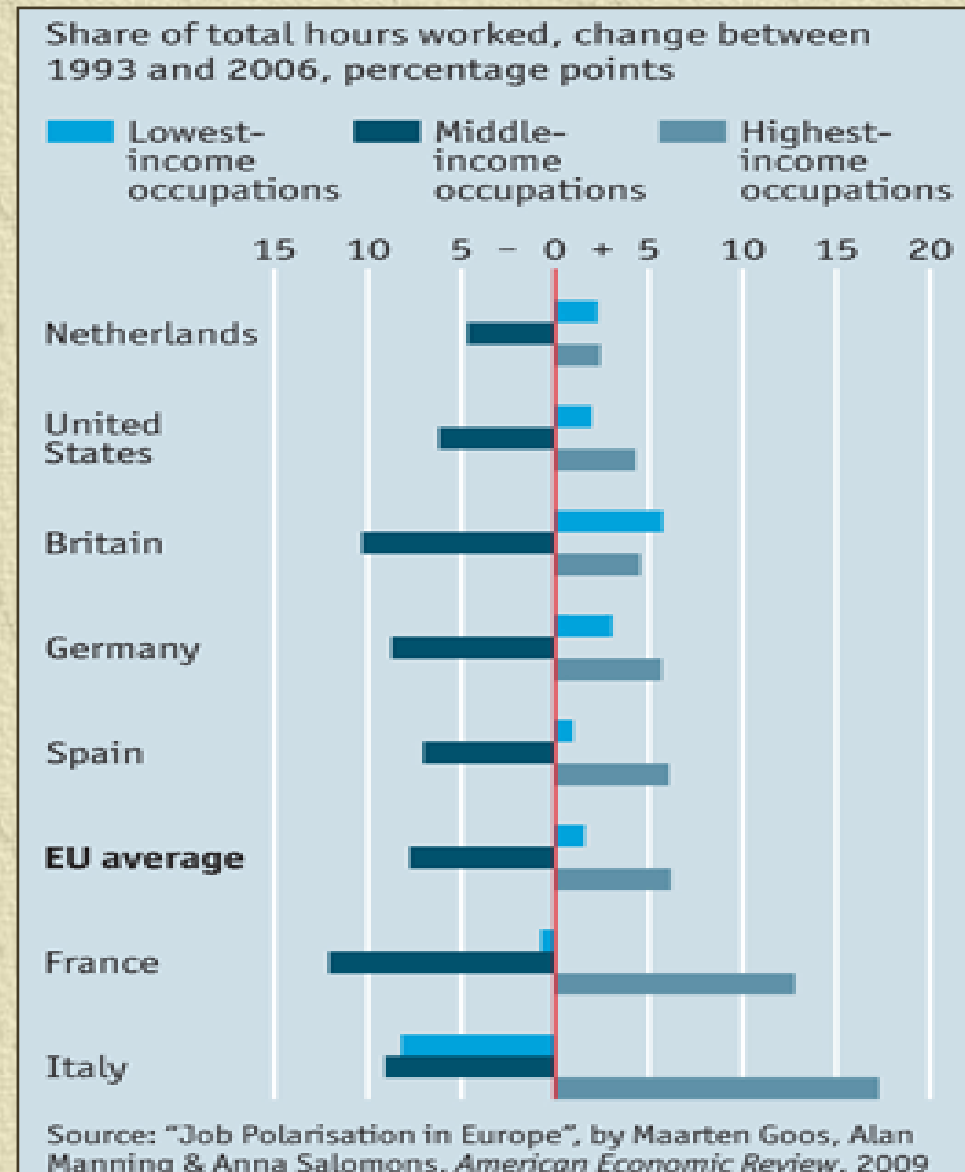


Source: "Income inequality in Africa, 1990–2019: Measurement, patterns, determinants", by Chancel et al. 2023., *World Development*, 2023

*Economist*, "Inequality in Africa: All right for some", 15 Apr 2023, p. 32.

# H-O-S Model: Theory vs Empirical Findings

- ◆ Issue 3. Which is the bigger driver, of change on  $[P_L]$ , skilled or unskilled L, or employment?
  - Trade
  - Technological change
    - ◆ IT revolution (skills-biased)
    - ◆ Global supply chain more fragmented and mobile
    - ◆ AI and robotics?
    - ◆ Green transition?



Source: *Economist*, "Economics focus: Automatic reaction", 9 Sep 2010.



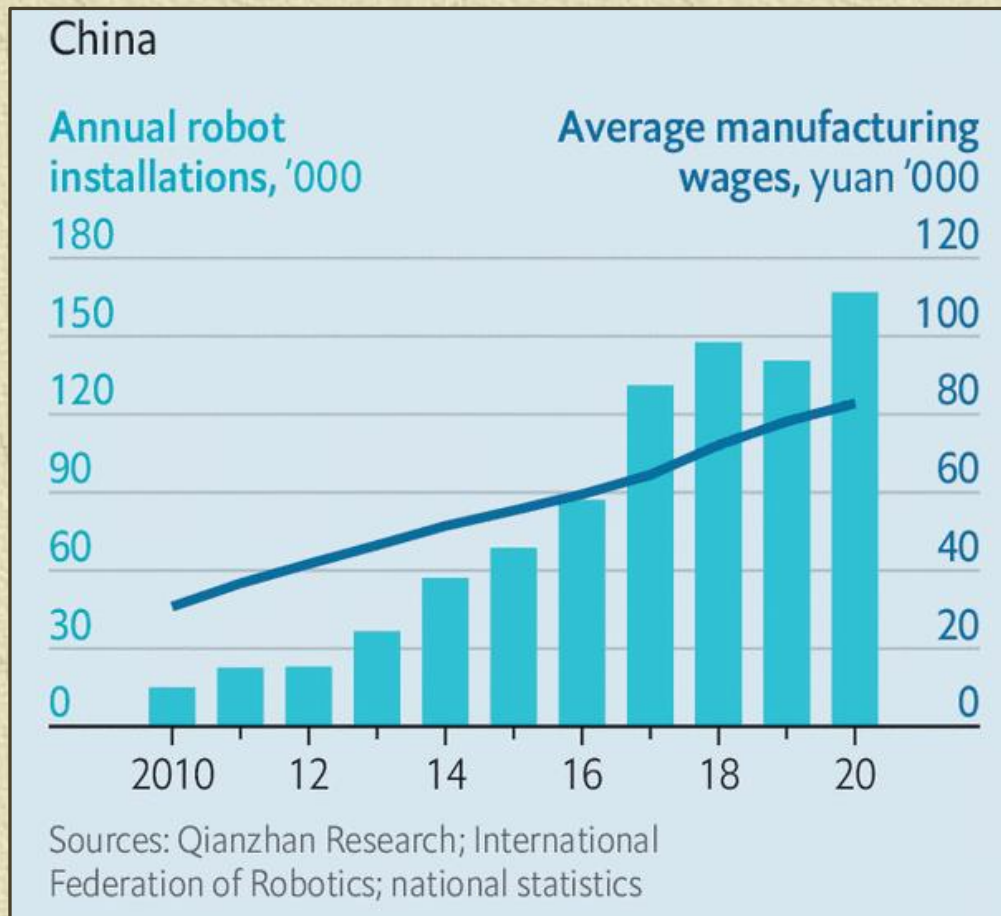
# H-O-S Model: Theory vs Empirical Findings

- Relative productivity: advanced vs developing/emerging economies



# H-O-S Model: Theory vs Empirical Findings

- China: tech, K and wages



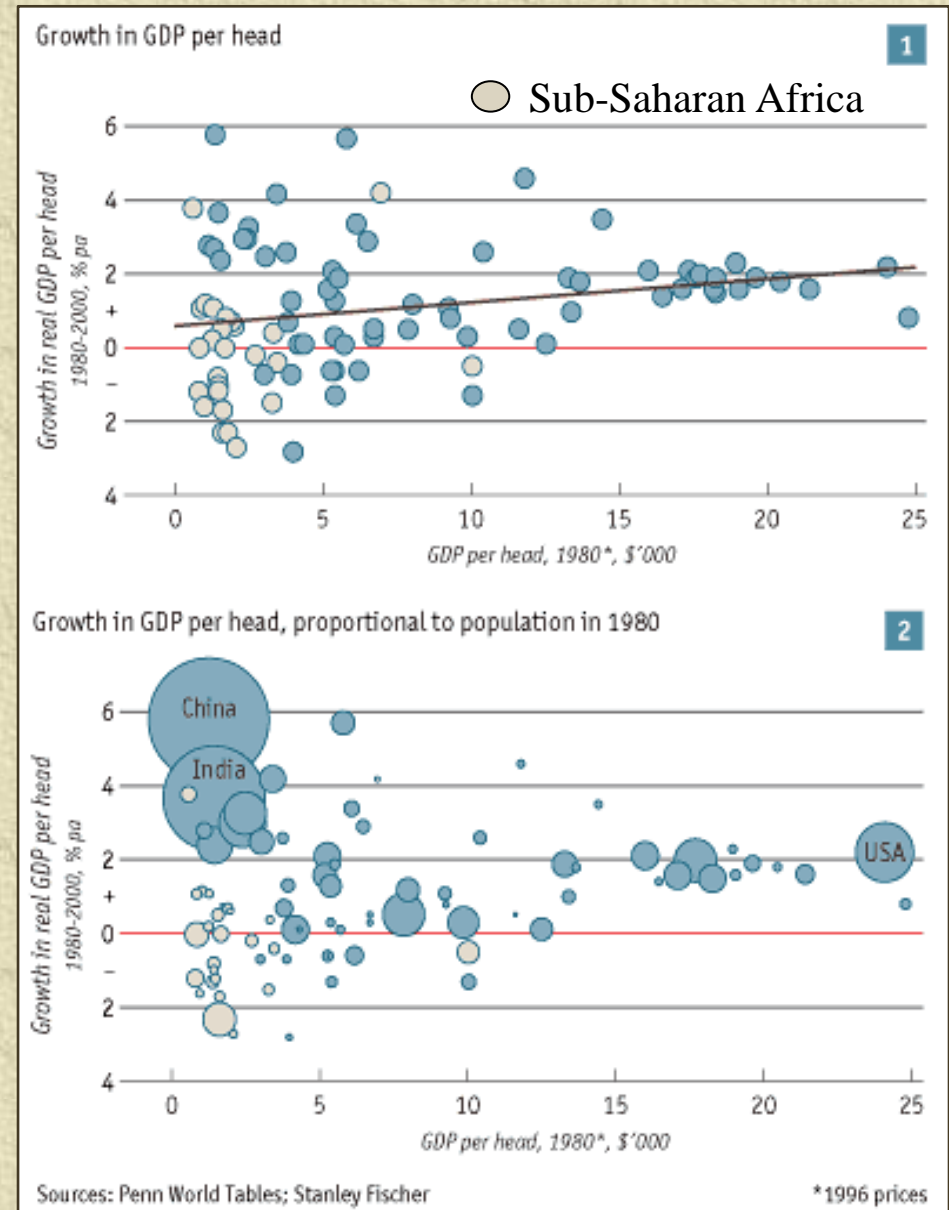
Source: *Economist*, “Automatic for the people”, Briefing on China’s growth prospects”, 14 Aug 2021, p. 14-6.



# H-O-S Model: Theory vs Empirical Findings

- ◆ Issue 4. Has income converged between N and S, e.g., that poor economies grow faster than rich ones?
  - Gerschenkron (1950s) and Abromovitz (1970s): imitation is easier than innovation and returns to K highest where K is scarce
  - GDP growth
    - ◆ One country, one observation
    - ◆ Proportional to population

Source: *Economist*, "Global economic inequality: More or less equal?", 13 Mar 2004, p. 73-5.



# H-O-S Model: Theory vs Empirical Findings

## ◆ Poverty reduction

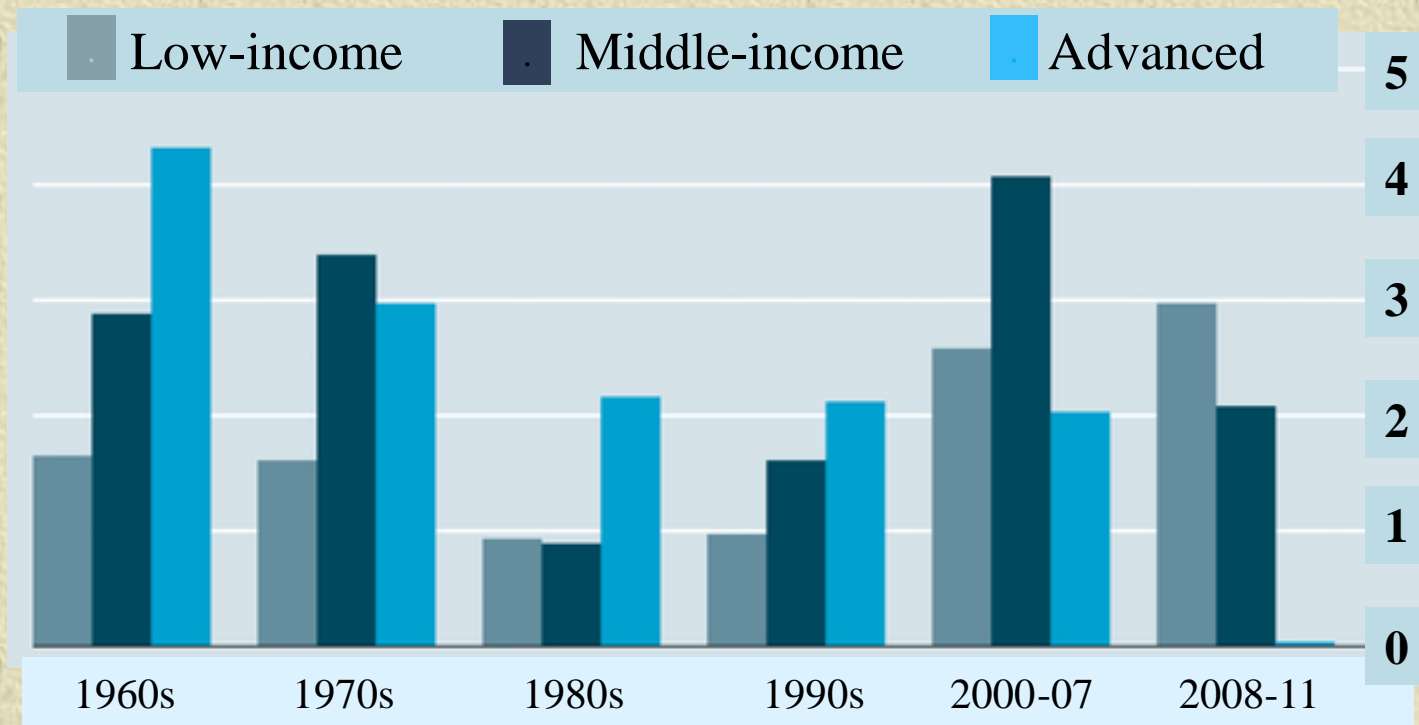


Source: *Economist*, “Global hipsters: Flat-white world”, 7 Nov 2020, p. 51-2.



# H-O-S Model: Theory vs Empirical Findings

- Economic growth and GDP per cap, % median economy



Source: IMF

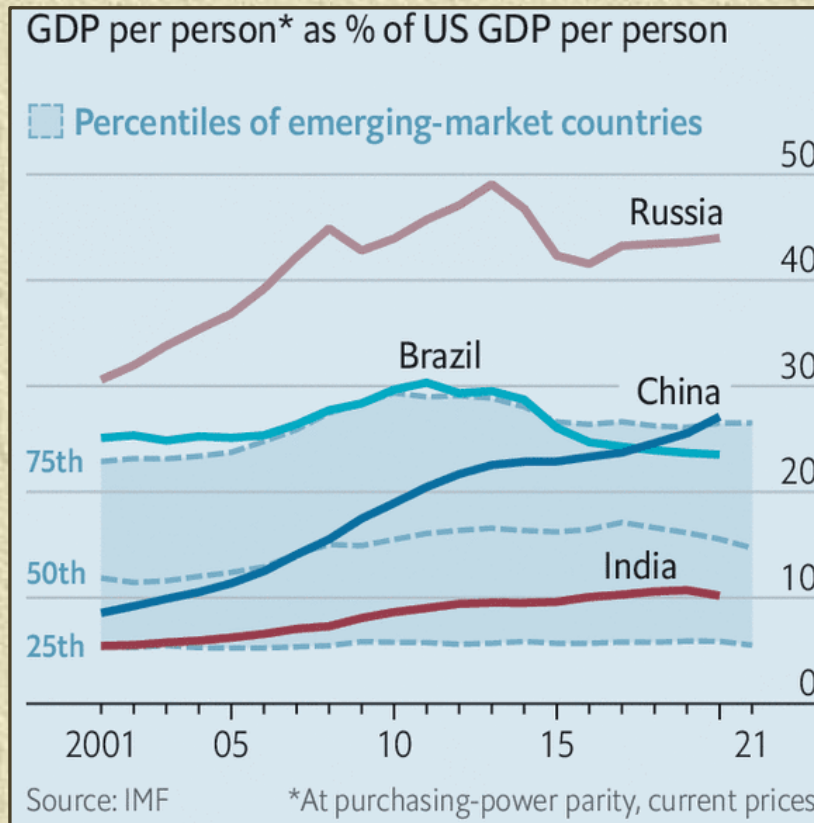
Source: *Economist*, Economic and financial indicators, 13 Apr 2013, p. 85.

Evidence for convergence among lowest GDP countries was weak between 1960s-1990s but became stronger because of China's decades of double-digit growth; technological changes enabled firms to create int'l supply chains. The GFC, euro crisis, Trump's trade war and Covid-19 now mean EMEs must experience sustained increase in productivity (within and across sectors).

Source: *Economist*, "Free exchange: "Close calls", 3 Aug 2019, p. 64.

# H-O-S Model: Theory vs Empirical Findings

- Trends in GDP and trade – catch up

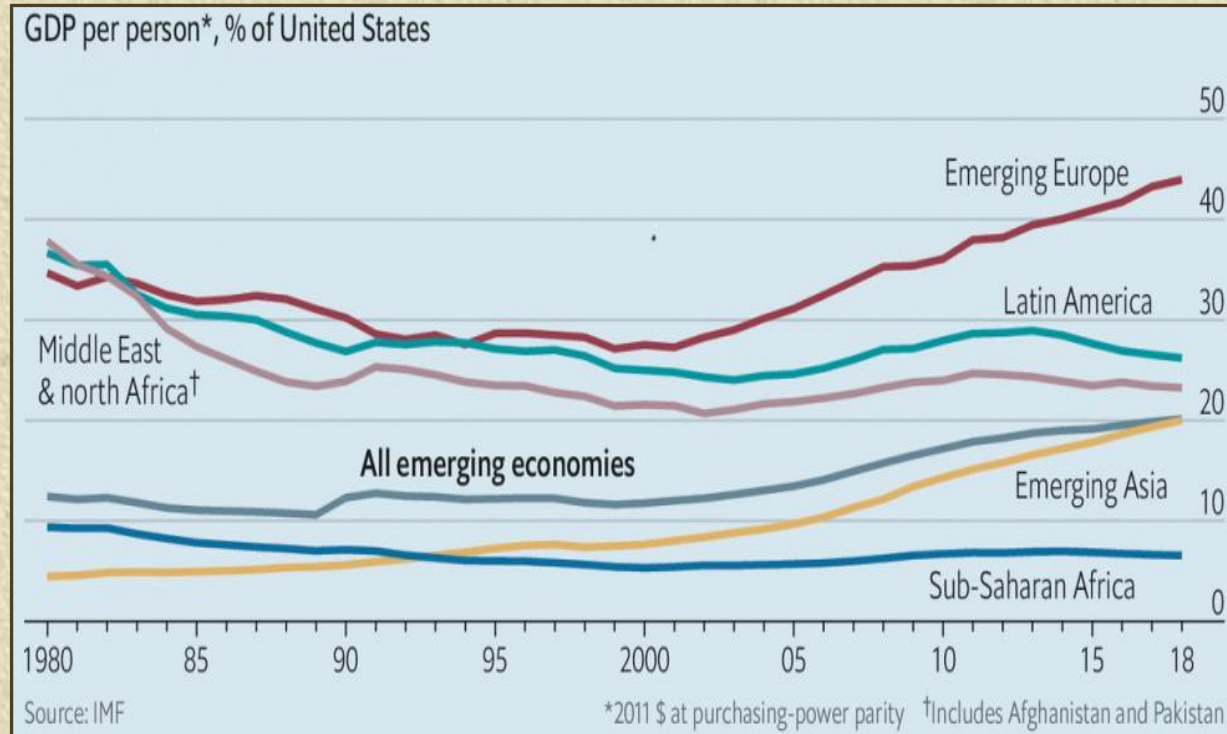


The 2010s were a rough decade but still were good in terms of catch up for EMDEs. It is just that the 2000s were so much better. China's pull factor in the 2000s played a big part – i.e., China played a key role in international supply chains.



# H-O-S Model: Theory vs Empirical Findings

- Copying China's development model getting harder



In 2022, China's GDP/cap was 28% of the US's (half of Poland's) but had biggest total GDP. If its GDP/cap doubled to match Poland's, then its GDP total would be bigger than US-EU combined.

Its GDP/cap went from 2% to 28% from 1980-2022. S.Korea had 28% of US in 1988 and 57% in 2007 (where Poland is). In 20 years, China could reach that level.

*Fin Times*, "We should not call 'peak China' just yet", 20 Sep 2023, p. 17.

Supply-chain trade allowed countries to side-step the process of building an industrial base from scratch. Cheap labor and proximity to big markets lured foreign plants. China as the head of "factory Asia" put Asia at the center of a supply chain that sparked a commodity boom helping Latin America and Africa who were not linked into the chain.

# H-O-S Model: Theory vs Empirical Findings

- Income convergence, emerging market economies (EMEs)



Earlier research expected that the BRIC countries would converge with a productivity frontier such as the US.

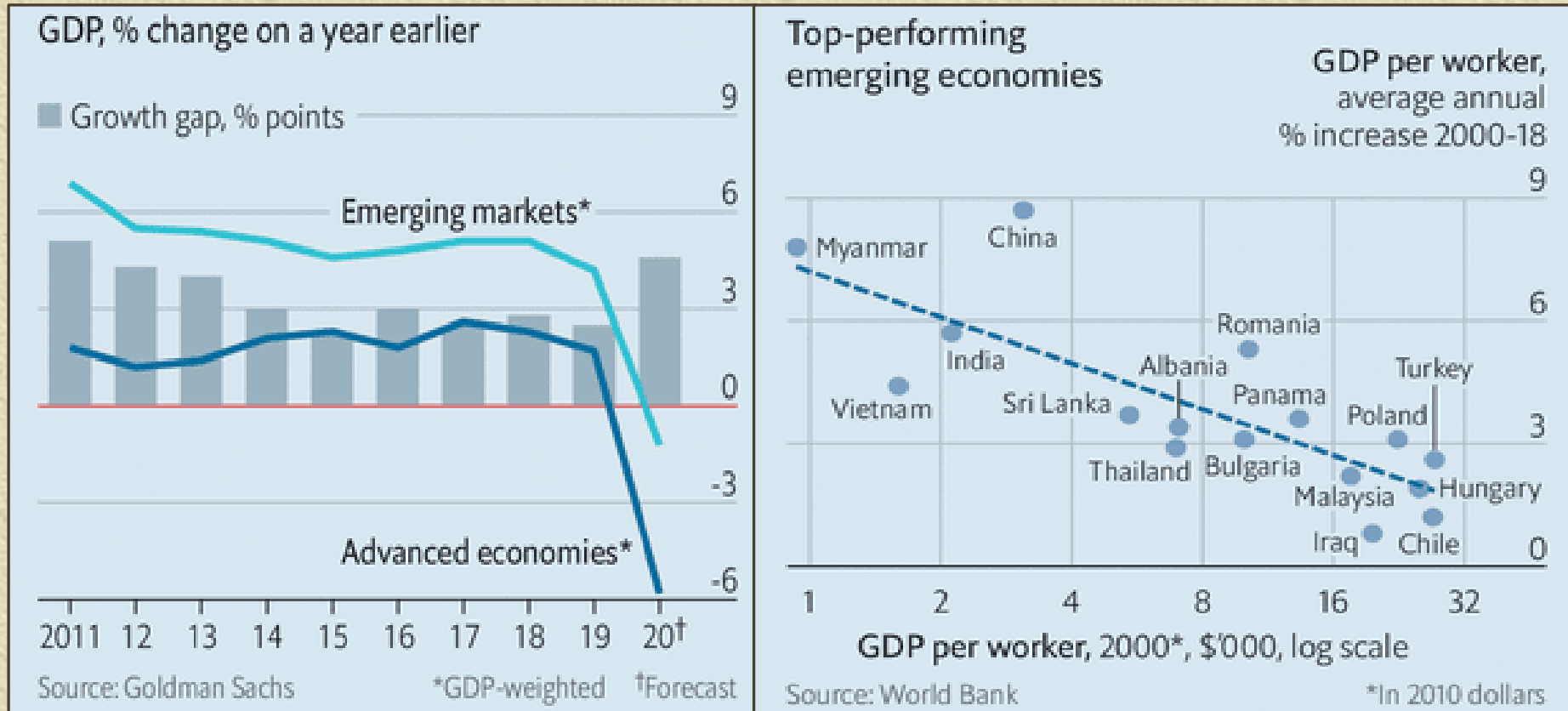
The thinking shifted toward the idea that economies converge not towards a global leader but with their neighbors or peers (e.g., convergence within regional blocs).

World Bank (2020) study finds that the forces at work are more complex than “closeness to neighbors” – look at several indicators.



# H-O-S Model: Theory vs Empirical Findings

- Income convergence in EMEs: vs advanced economies and across EMEs



World Bank, “Global productivity: Trends, Drivers and Policies”, finds **5 country groupings based on productivity performance**: 3 groups of poor countries; a 4<sup>th</sup> group with larger EMEs with unfulfilled potential (Argentina, Brazil, Indonesia, Mexico and South Africa); 5<sup>th</sup> is the most successful group of rich countries and 16 EMEs (right-side graph).

## 7. Economic Growth

- ✦ Four possible sources of growth in GDP per person
  - ◆ Structural transformation: moving L from A sector (overmanned fields) to M sector (more productive factories)
  - ◆ Capital deepening: adding more K (machinery) per unit of L in any sector
  - ◆ Tech diffusion: use of existing tech more widely across firms, industry or sectors, improving the use of K, L
  - ◆ Tech advances: innovations that lead to new products, processing method or business organization