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How India Fits into Global Production Sharing: Experience, Prospects and Policy Options

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Purpose/motivation

- Examine India's role in global production sharing from a comparative East Asian perspective:
  - why India falling behind East Asian countries?
  - what are the policy options?
- Motivated by the policy debate on the link between emerging export patterns and 'jobless growth' of domestic manufacturing.
- Focus solely on merchandise trade.

Structure

- Global production sharing and production networks
- An overview of India's export performance
- India's comparative performance in 'network' exports
- Determinants of network exports
- Conclusions and policy inferences
- Appendix: Trade data compilation

1. Global production sharing and production networks

Global production sharing:

‘Splitting of the production process (of a good or a service) into discrete tasks which can be located in countries in which factor prices are well matched to the factor intensity of the particular task’

Alternative terms: International production fragmentation; vertical specialization, Slicing the value chain , Offshoring, international outsourcing

Global production sharing is not an entirely new phenomenon, but it has become a defining feature of world manufacturing trade only from about the late 1960s:

- Wider, ever increasing product coverage
- Global spread from mature industrial economies to developing countries

Developing countries' involvement in global production sharing began with assembling electronics components in the late 1960.

Since then product coverage has expanded to encompass a wide rage of products: electronics and electrical goods, machine tool, automobile, cameras and watches, pharmaceuticals, bio-medical equipment, sola panels, and light emitting diodes (LED) etc.

Three phases in the engagement of developing countries in global production sharing

(1) two-way exchange between home and host country: parts and component assembly/testing in the host country to be incorporated in final assembly in the home country

(2) Component assembly networks encompassing many host countries

(3) Full-fledged production networks involving component production/assembly/tenting and final assembly encompassing host countries

(R&D and head-quarter functions are still predominantly in home countries)

The Role of MNEs/FDI

MNEs are the key players in global production sharing:

A close relationship between foreign direct investment (FDI) and trade in parts and components, and final assembly

In recent years, production sharing practices have begun to spread beyond the domain of MNEs:

- As production operations in host countries become firmly established, MNE subsidiaries have begun to subcontract some activities to local (host-country) firms to which they provide detailed specifications and even fragments of their own technology.

But, the bulk of global production sharing takes place through intra-firm linkages rather than in an arms-length manner.

Opportunities for export-led industrialization

Global production sharing opens up new opportunities for countries participation in a finer international division of labour, to specialize in different slices (tasks) of the production process.

It runs counter to *the fallacy of composition argument* against export-led industrialisation.

But, a country's success in joining global production networks and industrial advancement does not depend on the availability of labour at relatively low wages alone.

(Only a handful of developing countries are engaged in global production sharing)

- Under global production sharing, firms in developed countries shift low-skill-intensive segments of the production process to developing countries

- But, low-skill intensive activities in the developed country are more-skill intensive than the labour-intensive activities in the developing country

- Hence, human capital development is a vital element in developing countries' endeavour to join production networks

At the initial stage, availability of middle-level (supervisory) technical manpower is a key concern in the site selection process of MNEs (See footnote 9, page 6)

To complement labour cost advantage, countries need to focus on:

Lowering the cost of 'service links'

Service links cost

Cost of services such as transportation, communication, and coordination needed for linking production blocks located in two or more countries.

Service link cost in a given country depends on a whole

range of factors impacting on the overall investment environment:

(i) Infrastructure and trade-related logistic

(ii) political stability and policy certainty

(iii) Property right protection, including enforcement of contracts

(iv) Concurrent liberalisation of trade and investment policy regimes

2. India's export performance: An Overview

- India's export performance has improved significantly following the liberalisation reforms initiated in the early 1990s (Figure 1)

- But, there has not been a notable improvement in India's relative export performance among developing countries (Figure 2)

Figure 1(a): India's share in world exports (%)

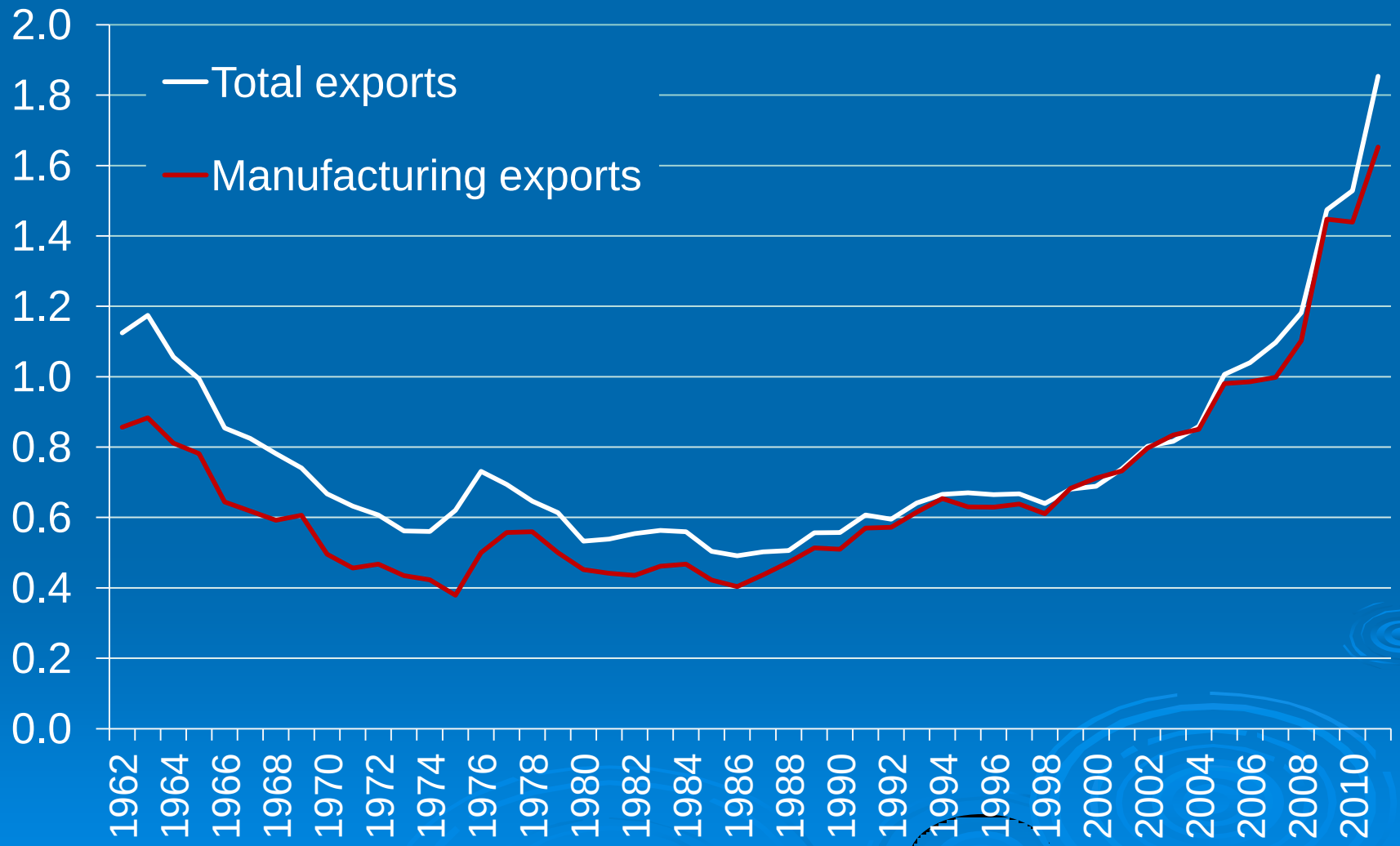
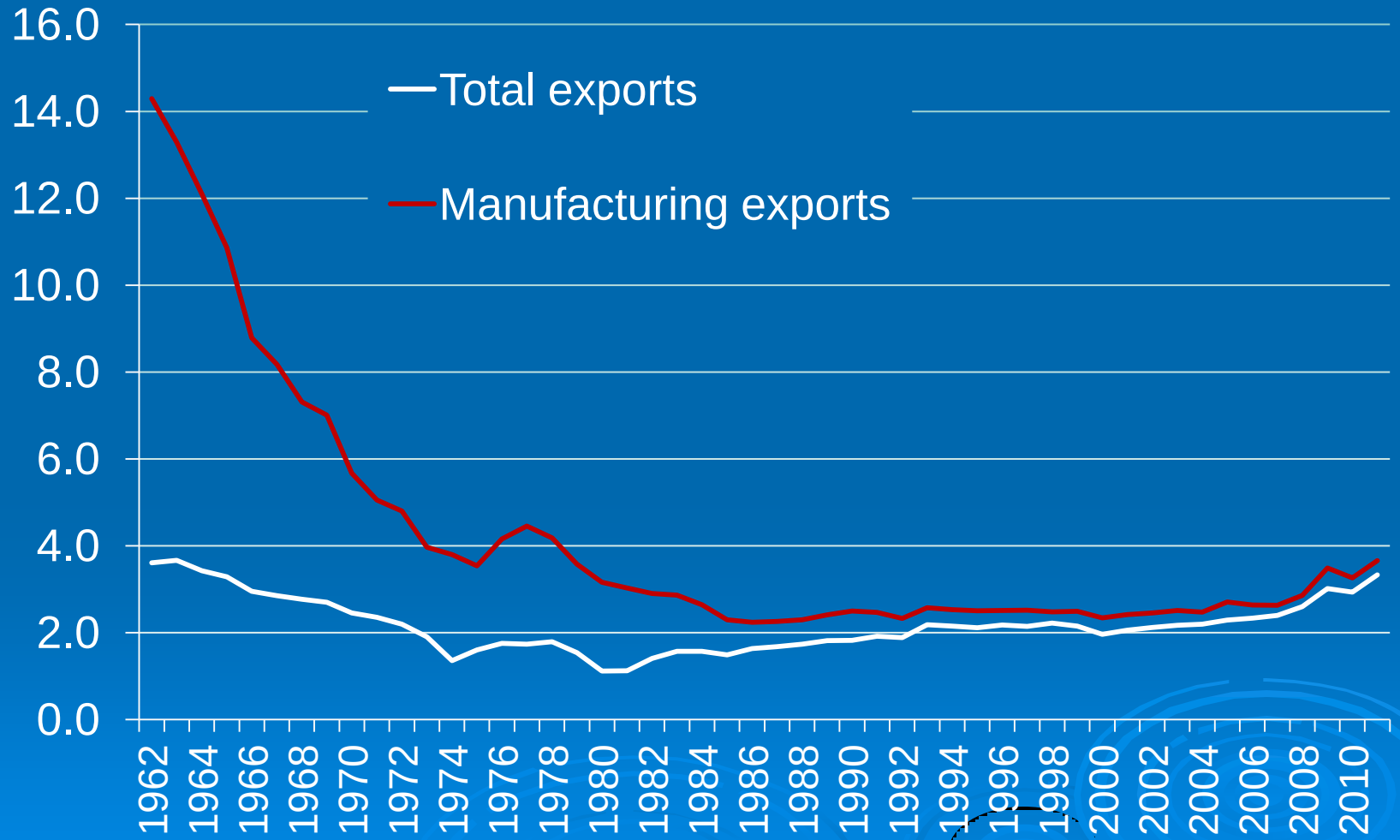


Figure 1(a): India's share in exports from developing countries (%)



Comparison of India's share in world trade and composition of exports with East Asian countries by major product groups, 1990-91, 2000-01 and 2010-11: Tables 1 and 2.

- India's world market share in all product groups has increased, but no particular product category stands out for faster export growth

- Exports are heavily concentrated in in two product categories: products classified by material (SITC 5) and miscellaneous manufacturing (SITC 8)

- Machinery and transport equipment (SIITC 7) accounts for a smaller share in Indian export structure compared to China and other East Asian countries; global production sharing is heavily concentrated in this product category.

3. India in Network Exports

Data Source:

UN Comrade data base; export data at the 5-digit level of the Standard International Trade Classification (SITC), Revision 3

Trade based on global production sharing: 'network trade' ('fragmentation trade')

Network trade = parts and components + final assembly

Decomposition

(1) **Manufacturing: SITC 5 through 8 less SITC 68**

(2) Parts and components: directly identified at the five digit level of SITC using a list of parts and components identified based on the UN Broad Economic Classification (BEC)

(3) Final assembly: recorded trade in six product categories* in which global production sharing is heavily concentrated minus parts and components belonging to those categories:

* Office machines and automatic data processing machines (SITC 75); telecommunication and sound recording equipment (SITC 87); electrical goods (SITC 77 – 772 – 776); road vehicles (SITC 78); professional and scientific equipment (SITC 87); and photographic apparatus (SITC 88) (following Krugman 2008)

(4) 'Conventional' manufacturing trade: (1) - (2) - (3)

- Global production sharing and the shift in manufacturing trade from developed to developing countries (Figure 2)

	1990-91	2010-11
World network exports, US$ billon	12803	59070
Developing-country share in network exports (%)	11.9%	45.1%
Share of network products in total mfg. exports from developing countries (%)	41.4%	60.1%

Table 2(a): Manufacturing exports from developing countries (US$ billon)

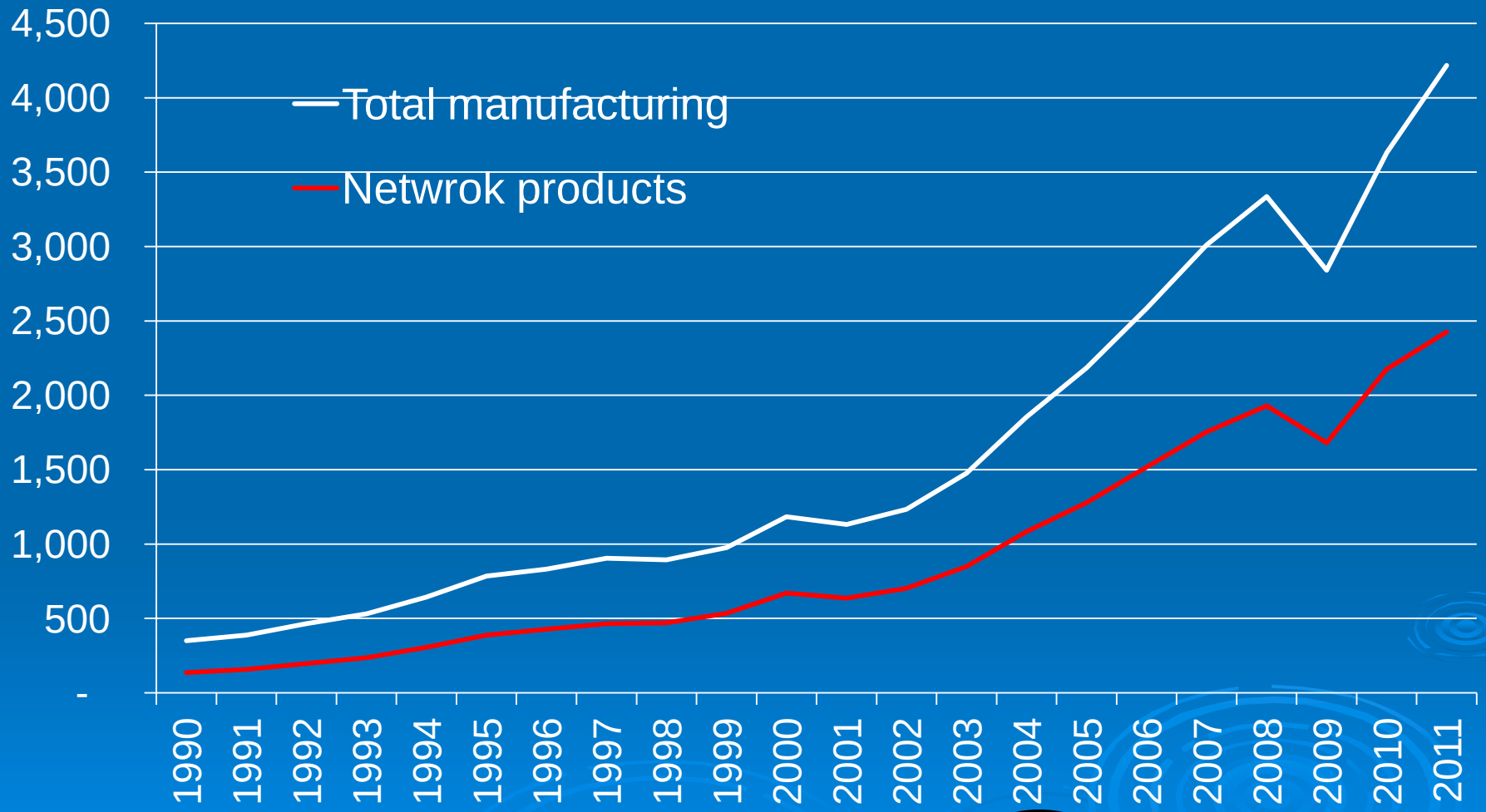
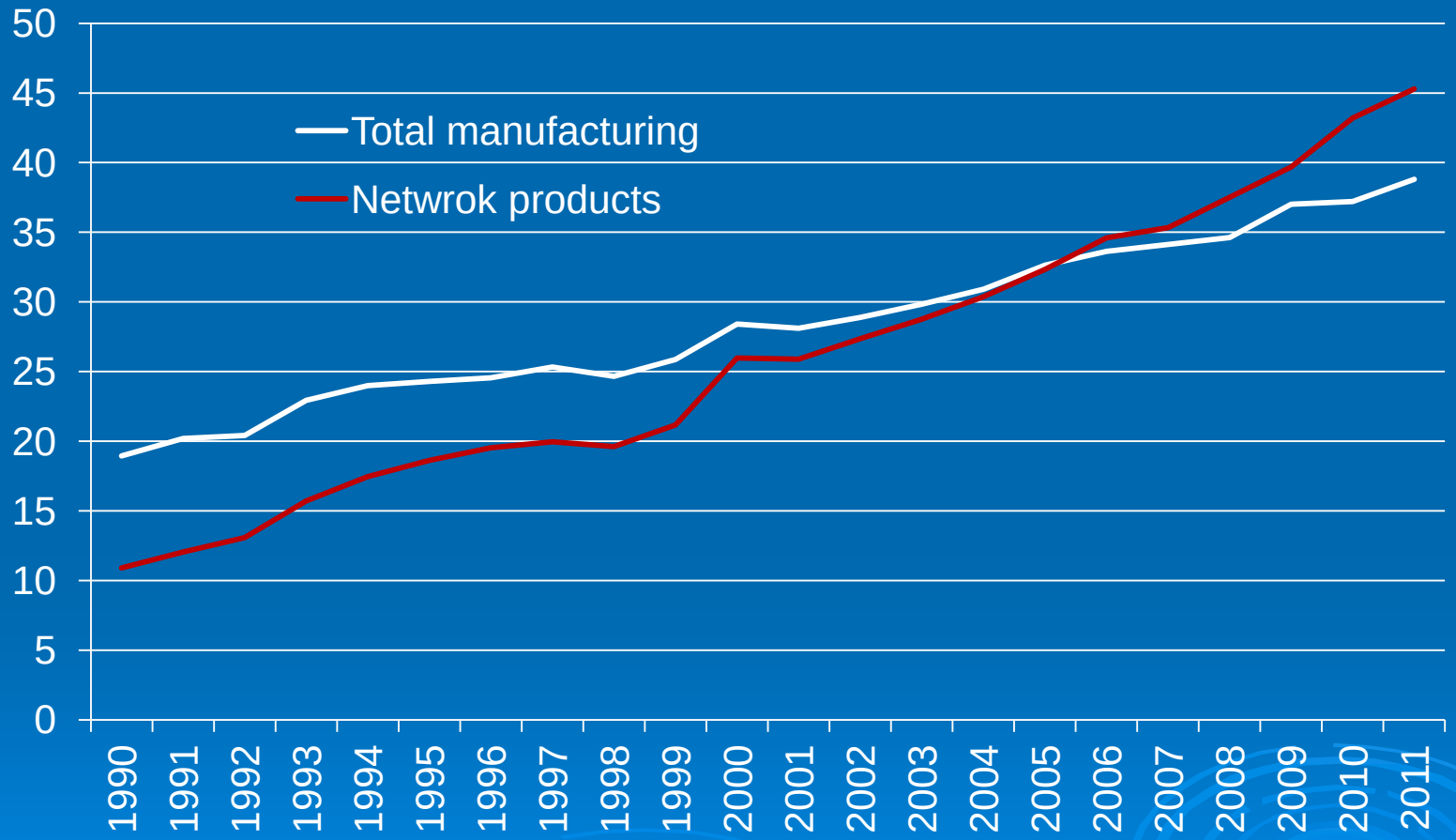


Figure 2(b): Developing countries' share in world manufacturing exports and network exports



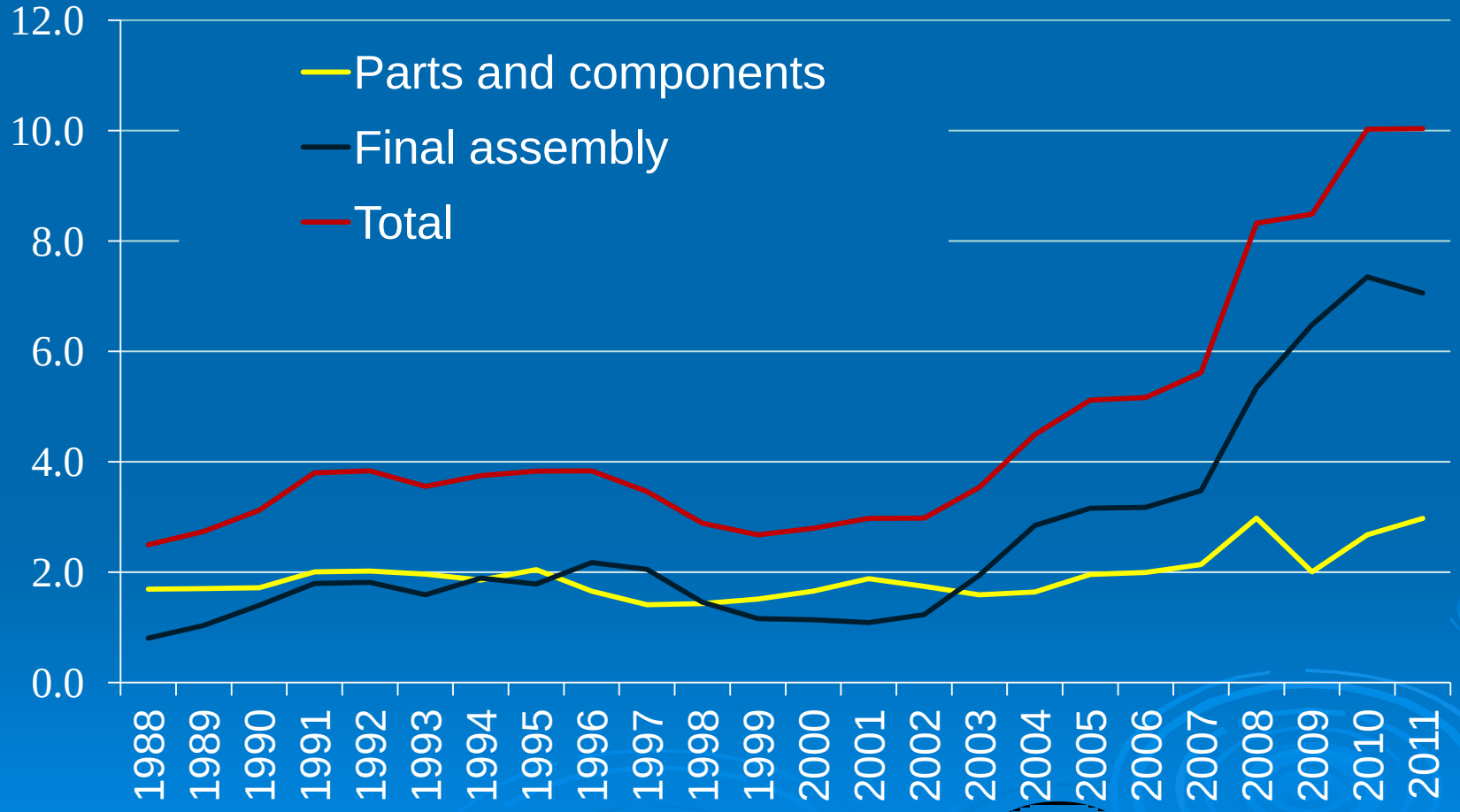
- The share of network products in total manufacturing exports of India is much smaller compared to the East Asian countries (Table 3)

- Two notable differences in the commodity composition of India's network exports (Table 4)
  - Transport equipment accounts for a much larger share (Figure 3)
  - Electronics and eclectical goods accounts for a much smaller share

Underlying reasons

- Specific characteristics of products relevant for locations decisions of MNEs
- lacklustre record of Indian SEZs in attracting electronics MNEs

Figure 3: Share of transport equipment in total manufacturing exports of India, 1988-2011 (%)



- Some lessons from the East Asian experience

  - Indonesia-India comparison

  - Recent expansion of production networks to Vietnam and Cambodia

  - The myth of China crowding out opportunities of the other countries

4. Determinants of inter-country differences in export performance

Product groups: total manufacturing; network products total,

Parts and components, final assembly; Non-network products

Explanatory variables:

Real GDP (reporter and partner),

distance (DST), adjunct (ADJ),

common business language (COML),

colonial links (CLNK),

logistic quality (LPI),

institutional quality (INS),

real exchange rate (RER),

Free trade agreements (FTA),

India dummy (IND)* and other developing country dummy (DDV*)

(* base dummy = East Asia)

- Data

Bilateral export between 20 developing countries and 45 countries (including the 20) over the period 1992-2009

- Estimation methods:
  - Pooled OLS
  - Random effects estimator
  - Hausman-Tayler estimator (preferred)

- Results: Table 7

- Network trade (both parts & components and final assembly) is relatively more sensitive to

  changes in the RER.

  Logistic and institutional quality

- FTA membership seems to have a positive impact on trade in final assembly

- After controlling for the other variable, the level of network exports from India are about twelve times lower than the average level for the East Asian countries.

Conclusions and policy implications

- Global production sharing has been the prime mover of dramatic shift in manufacturing exports from developed to developing countries.

- India still remains a small player in global production networks, particularly in electronics and electrical goods

  (Relative 'success' in automobiles seems product specific).

- The findings provides further support for the case for further reforms to improve India's export performance; reducing 'service link costs' is vital for fitting India into global production sharing.

- There is also a strong case, based on the experiences in East Asia and elsewhere, for combining further reforms with a proactive investment promotion campaign to attract multinational enterprises (MNEs) engaged in global production networks.

- Why SEZs have so far failed in linking India to global production networks remains an import subject for further research