

# **ITA and The GVCs**

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# What is a Value Chain?

- **A VC, according to an APEC study, refers to the full range of value-adding activities to bring a product or service through different stages of production, including design and development, input of raw materials and other factors, selection and assembly, physical transformation and processing, acquisition of required services such as transport and finance, and ultimately response to consumer demand.**

# **What is a Global Value Chain?**

- **A GVC refers to a value chain that operates in more than one economy.**
- **Along the GVC, a major part of value creation derives from product and process innovation, as well as branding and marketing.**
- **Almost all industries are woven together through different chains.**

# **What is a Global Value Chain?**

- As globalization deepens, GVCs have become the backbone of the world trade system (Gereffi, Cattaneo and Staritz 2013), transforming international commerce from all aspects.**
- Currently, around 80 percent of global exports are traded through networks of GVCs and developing economies contribute to nearly half of global value creation (UNCTAD 2013).**

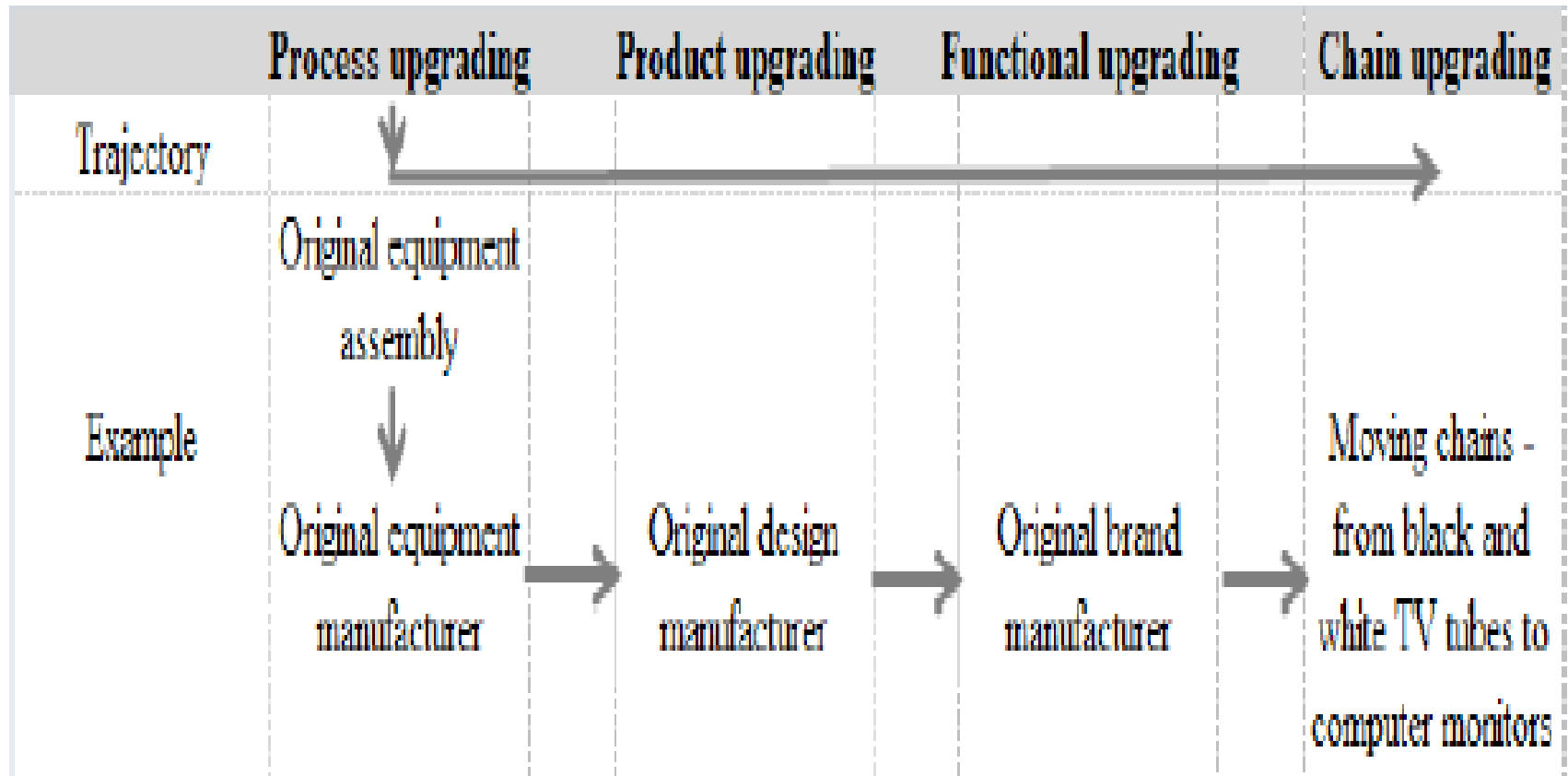
# **Information Technology (IT) GVC**

- **Among various GVCs, the IT GVC has the most extensive geographical coverage (Sturgeon and Kawakami 2010).**
- **In the IT sector, global sourcing is a common practice.**
- **IT products enhance productivity and stimulate innovation across the world economy (Mann and Kirkegaard 2006).**

# The IT GVCs

- **IT sector has a high level of technology adaptation.**
- **Production processes, from design, planning, inventory management, to logistics control, are formalized and systematized, reducing the need to have design engineers and production facilities located in the same place.**

# The Hierarchy of Upgrading - the Asian Electronics Industry



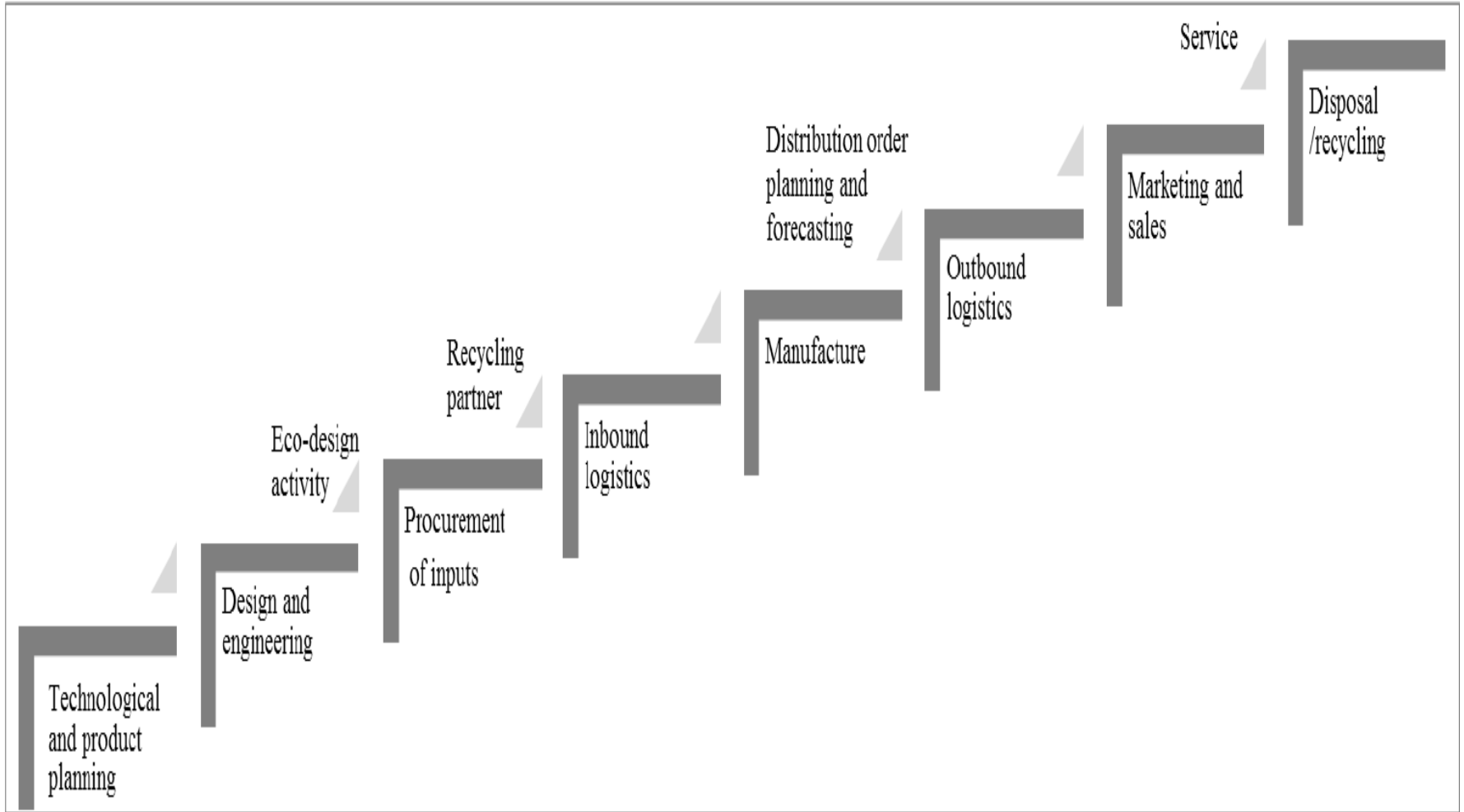
Source: Raphael and Jeff, 2001

# The IT GVCs

- **Compared to the auto or other manufactured products, IT products are light in weight while high in value, making long-distance transportation less expensive and geographical expansion easier.**



# Electronics Global Value Chain – Samsung Group



Source: (Korea Association Business Consultancy 2012).

# The IT GVCs

- **Furthermore, governments across the globe tend to promote the IT industry as the sector leading to a knowledge economy.**
- **As a result, more liberal policies are applied to this sector. In particular, the WTO Information Technology Agreement has reduced trade barriers and significantly facilitated trade in intermediate parts and components as well as final products.**

# What is the ITA?

The ITA was concluded at the WTO Singapore Ministerial Conference on 13 December 1996 by 14 signatories (or 29 WTO Members and an acceding custom territory).

The ITA requires that each participant shall bind and eliminate customs duties on products listed in the Annex to the ITA.

## Box 1.5. What products are covered by the ITA? Main product categories and examples



### Computers

- PCs
- Laptops
- Input / Output units



### Semiconductors

- Transistors
- Integrated circuits
- Microprocessors
- Electronic microassemblies



### Semiconductors manufacturing equipment

- Encapsulation machines
- Inspection apparatuses



### Telecom. apparatus

- Telephones
- Pagers
- Mobile phones
- Switching equipment



### Instruments & apparatus

- Cash registers
- Postage-franking machines
- Electronic calculators



### Data storage media & software

- Floppy disks
- CDs
- Software in physical support



### Parts & accessories

- Parts and accessories to the other six main categories

Source: Ministerial Declaration on Trade in Information Technology Products. See also Appendix 1.

## ITA PARTICIPANTS (50) as of February 2014

Albania	Malaysia
Australia	Mauritius
Bahrain, Kingdom of	Moldova
Canada	Montenegro
China	Morocco
Colombia	New Zealand
Costa Rica	Nicaragua
Dominican Republic	Norway
Egypt	Oman
El Salvador	Panama
European Union <sup>1</sup>	Peru
Georgia	Philippines
Guatemala	Russian Federation
Honduras	Saudi Arabia, Kingdom of
Hong Kong, China	Singapore
Iceland	Switzerland <sup>2</sup>
India	Chinese Taipei
Indonesia	Tajikistan
Israel	Thailand
Japan	Turkey
Jordan	Ukraine
Korea, Republic of	United Arab Emirates
Kuwait, the State of	United States
Kyrgyz Republic	Viet Nam
Macao, China	Qatar

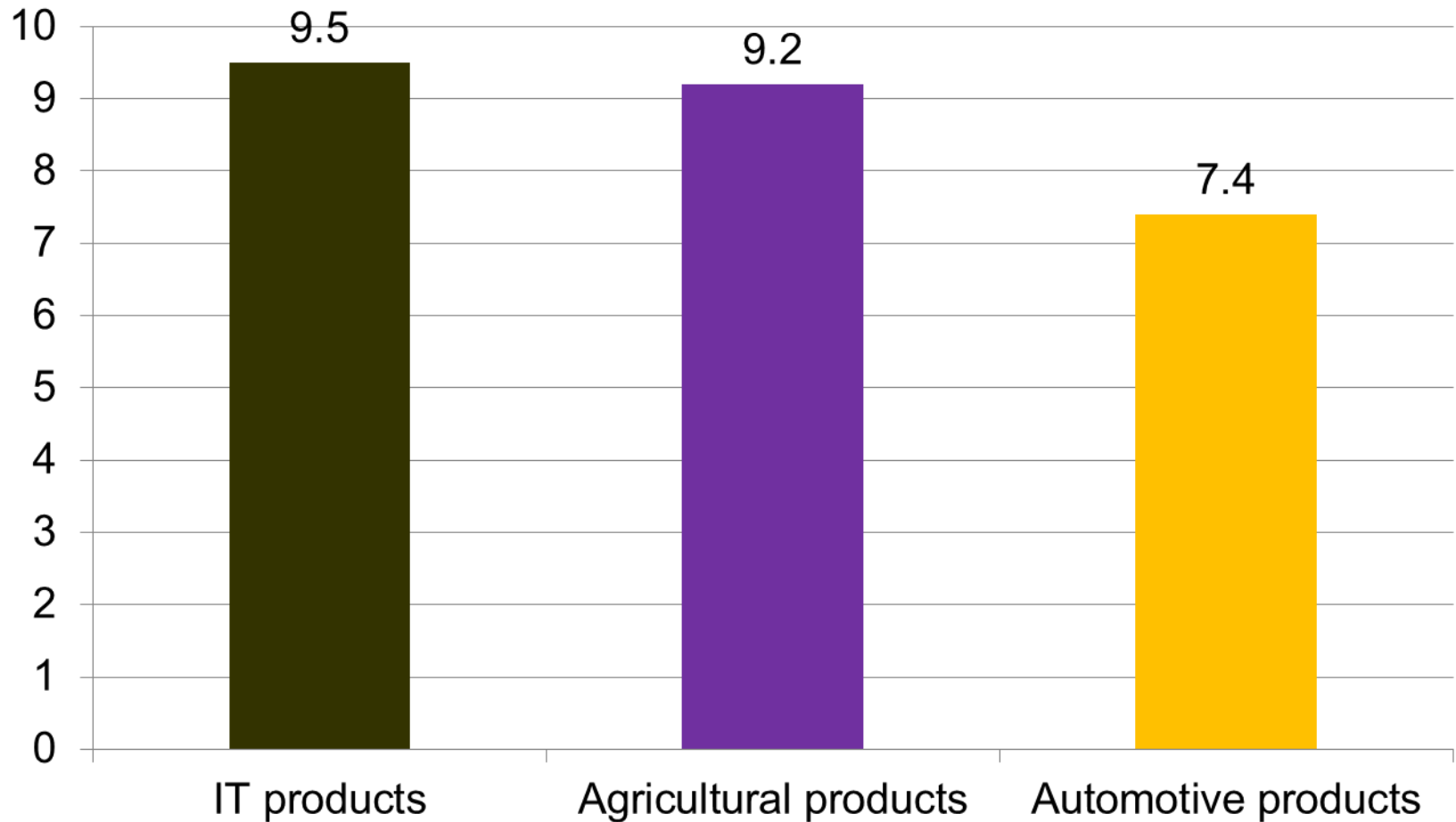
<sup>[1]</sup> The schedule of the European Union comprises the commitments of the 28 member States.

<sup>[2]</sup> On behalf of the customs union of Switzerland and Liechtenstein.

# World Trade in IT Products

- **As the most significant Agreement, the ITA led to the elimination of import duties on products which in 2012 accounted for an estimated US\$ 1.6 trillion, almost three times as much as when it was signed in 1996.**
- **The IT sector has been one of the fastest growing sectors in world trade.**
- **Today, trade in these products accounts for approximately 9.5 per cent of global merchandise exports.**

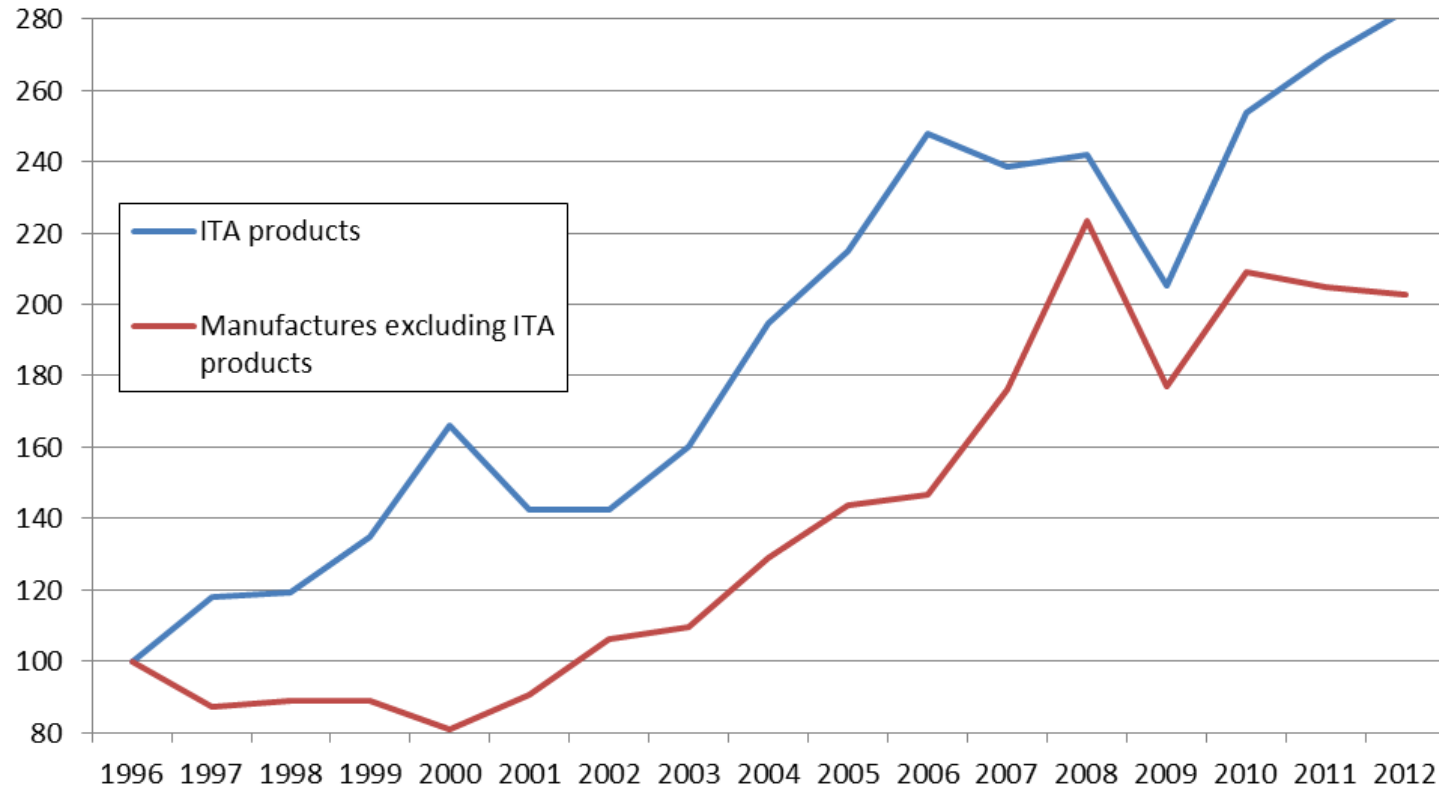
## Share of IT products in world merchandise exports, 2010



Source: WTO Secretariat, based on UN Comtrade and WTO estimates.

# The expansion of global exports of IT products and other manufactures

(Value index, 1996=100)



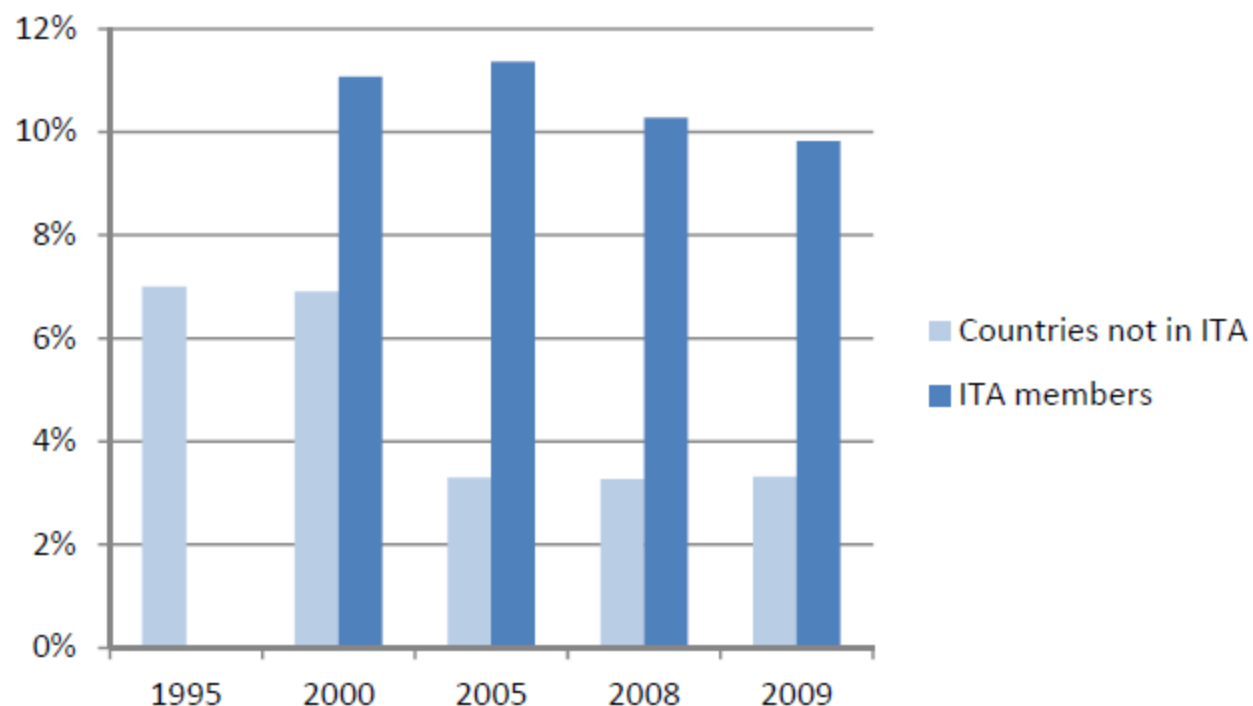


# ITA and GVCs

**An OECD study also finds:**

- *GVCs are particularly strong in the industries covered by the ITA;***
- *The expansion of IT GVCs coincides with the entry into force of the ITA in 1997;***
- *ITA Participants are definitely more involved in GVCs than non-ITA Participants;***

**Figure 11. ITA membership and participation in IT GVCs, participation index as a percentage of gross exports, 1995 to 2009**



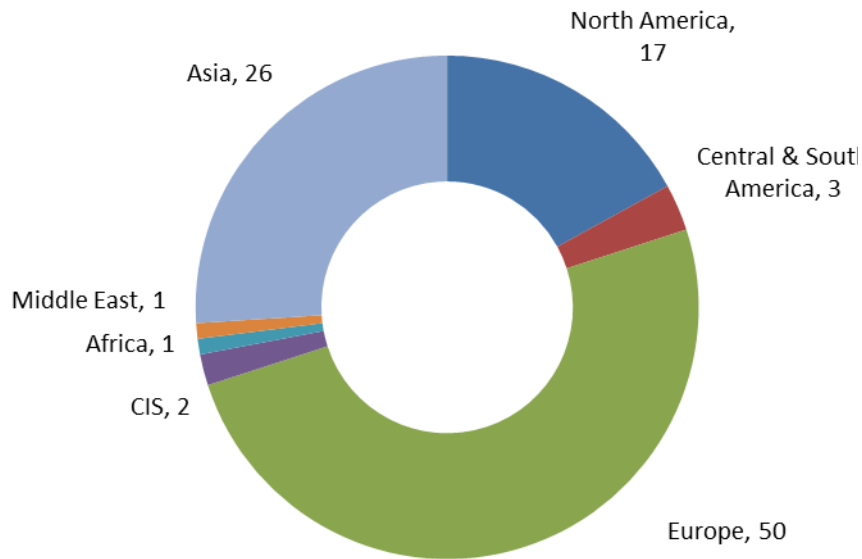
*Source:* De Baker and Miroudot (2013) using the May 2013 release of the OECD ICIO model. "ITA industries" are defined on the basis of Table 3 as 'Machinery and equipment n.e.c.' (ISIC 29), 'Office, accounting and computing machinery' (ISIC 30), 'Electrical machinery and apparatus n.e.c.' (ISIC 31), 'Radio, television and communication equipment' (ISIC 32) and 'Medical, precision and optical instruments' (ISIC 33).

# ITA and intermediate products

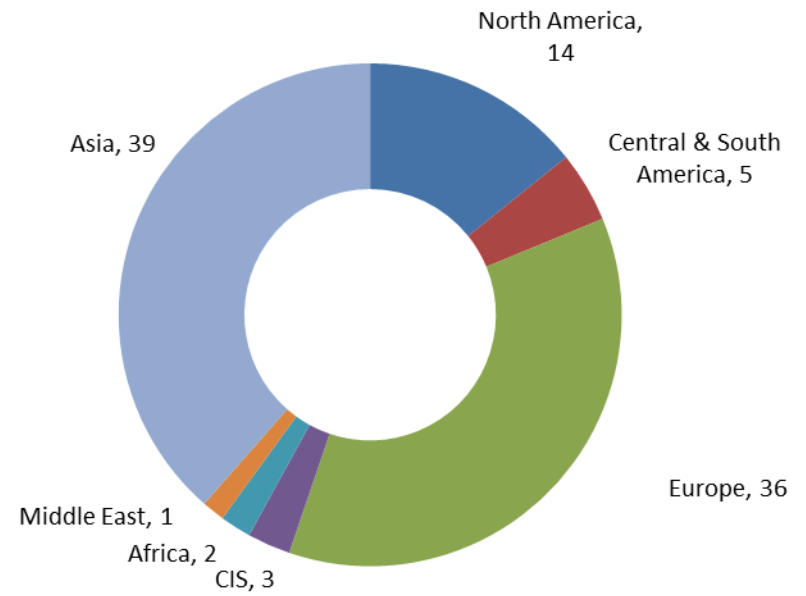
- **Since ITA covers many intermediate products that can be freely moved across borders without paying import duties, the IT industry has had the opportunity to specialize and to profit from large economies of scale. This is one of the reasons why GVCs have proliferated in the sector, leading to improved productivity and efficiency in the industry.**

# Regional shares in world exports of intermediate goods (%)

**1995**



**2012**

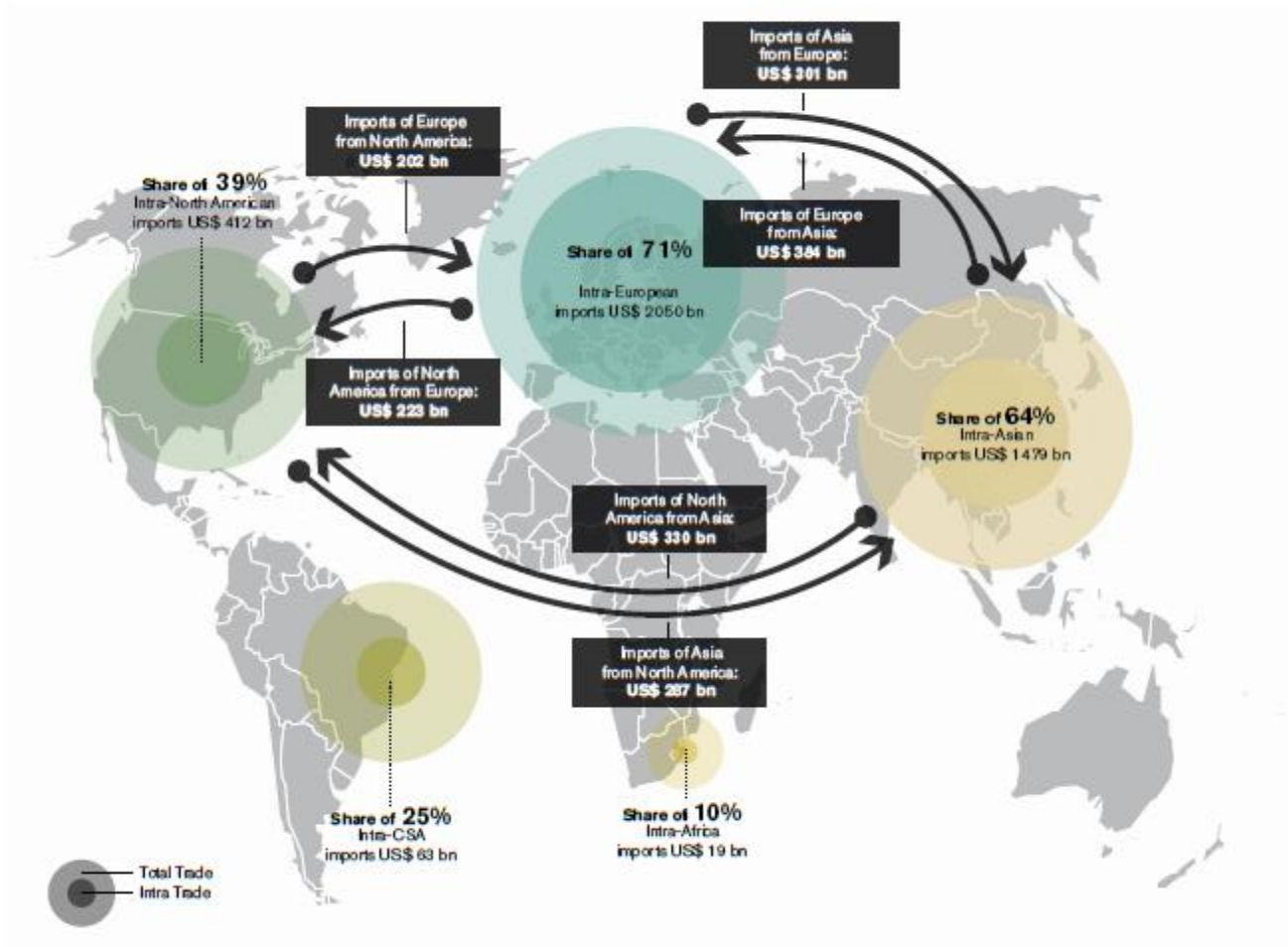


The level of imports of intermediate goods for Central and South America, Africa, and Australia and Oceania was low, especially for intra-regional exchanges – all with shares of

below 30 per cent of total imports of intermediate goods. This reflects the fact that these regions are still newcomers to international production chains.

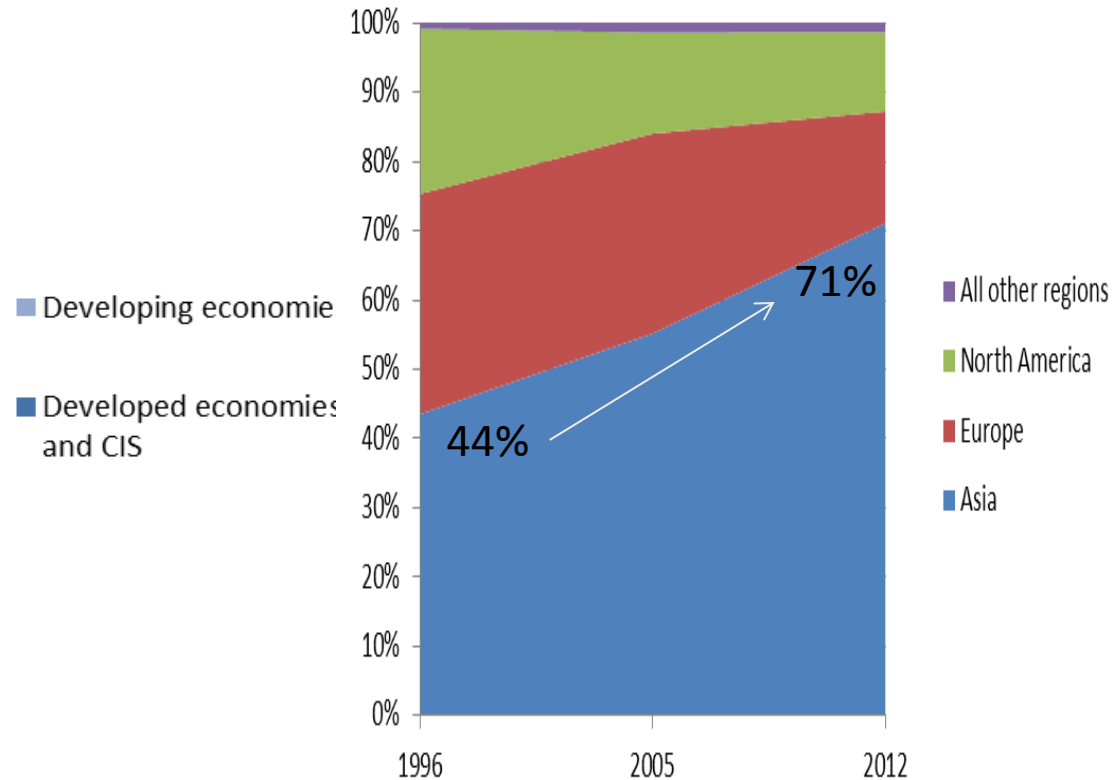
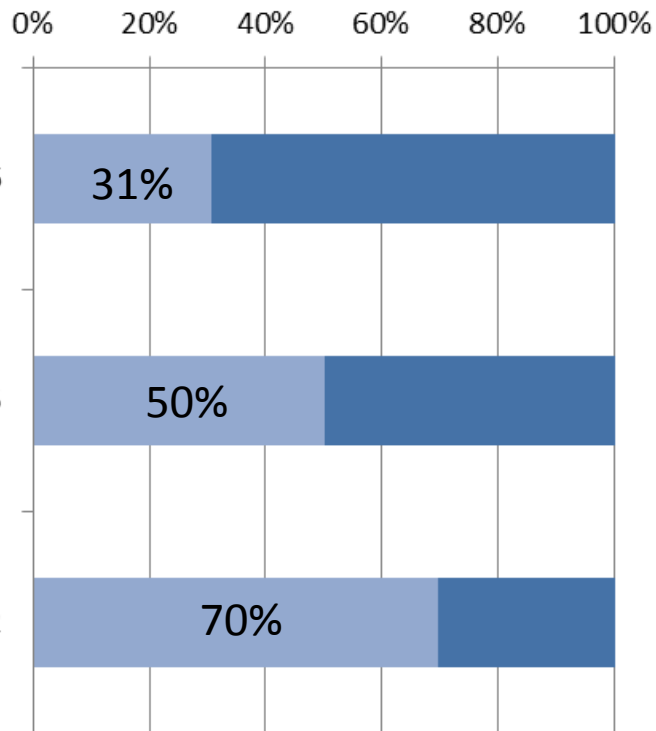
Figure 7

Intra-regional and major inter-regional imports of intermediate goods, 2008 (in billions of US\$)



Sources: UN Comtrade Database and WTO estimates.

# Exports of IT products by economic and geographic region (%)



## Top 20 importers and exporters of ICT goods in 2012 (million USD)

Top 20 importers			Top 20 exporters		
Economy	2012	Market share	Economy	2012	Market share
China	355'563	18%	China	554'310	30%
United States of America	299'219	15%	China, Hong Kong SAR	207'900	11%
China, Hong Kong SAR	225'756	11%	United States of America	139'447	8%
Japan	90'699	5%	Singapore	115'985	6%
Singapore	88'895	4%	China, Taiwan Province of	101'029	6%
Germany	88'587	4%	Korea, Republic of	94'036	5%
Mexico	61'202	3%	Japan	73'052	4%
Netherlands	60'581	3%	Malaysia	63'460	3%
Korea, Republic of	50'874	3%	Germany	62'514	3%
United Kingdom	50'313	3%	Mexico	62'497	3%
China, Taiwan Province of	48'737	2%	Netherlands	56'569	3%
Malaysia	45'359	2%	Thailand	36'809	2%
France	41'284	2%	Czech Republic	22'730	1%
Italy (2011)	34'687	2%	France	22'728	1%
Canada	33'834	2%	United Kingdom	20'386	1%
Thailand	29'260	1%	Hungary	17'912	1%
India	25'970	1%	Philippines	15'326	1%
Russian Federation	23'706	1%	Slovakia	13'402	1%
Australia	22'262	1%	Poland	12'639	1%
Czech Republic	20'583	1%	Sweden	12'471	1%
Rest of the world	307'289	15%	Rest of the world	117'485	6%

# ITA and GVCs

- **Tariff reduction/elimination has facilitated the establishment of the GVCs.**
- 
- **The GVC has promoted world merchandise trade of intermediate goods over the past two decades.**
- **This is one of the reasons why GVCs have proliferated in the sector, leading to improved productivity and efficiency in the industry.**



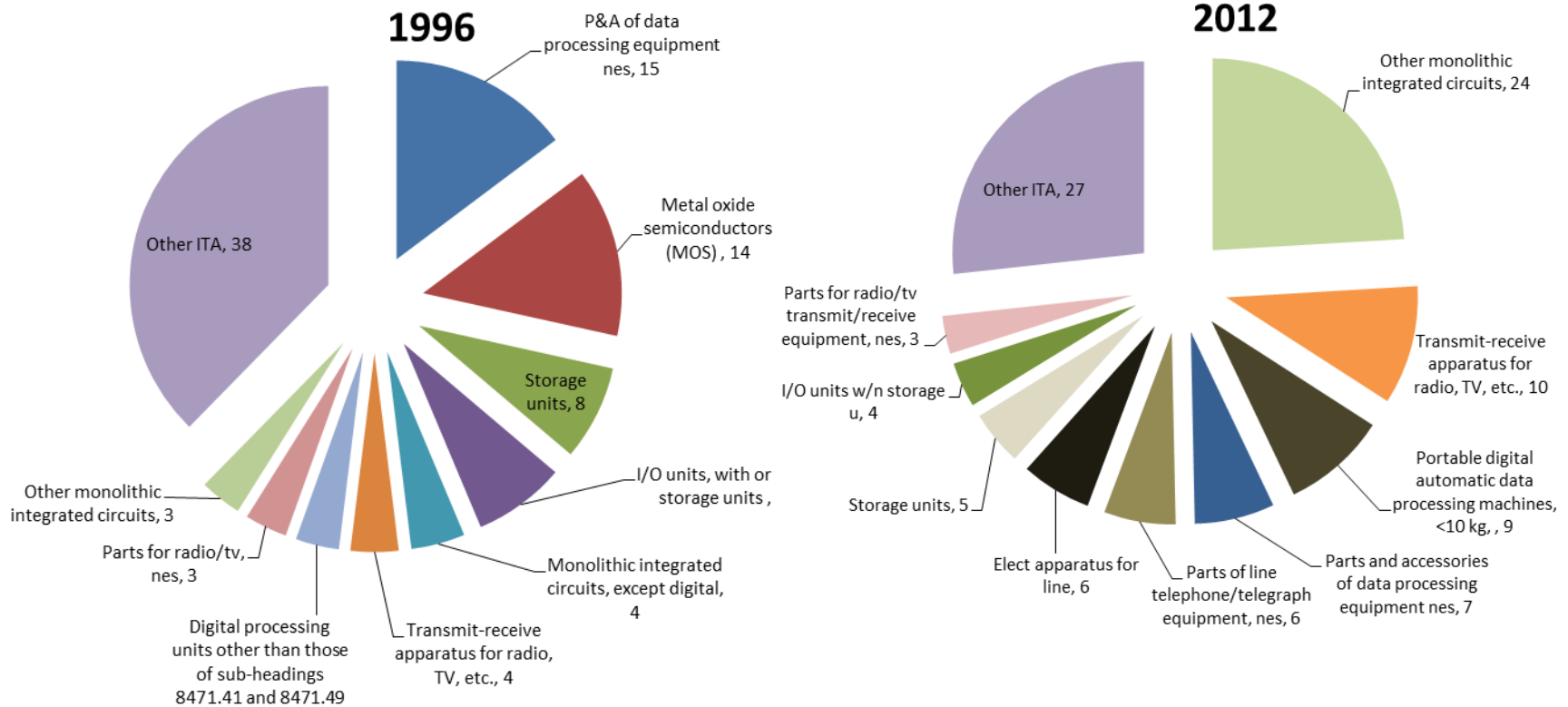
# ITA and GVCs

- **Today, ITA membership has increased from its original 29 to 79 (or 14 to 51).**
- **They account for approximately 97 % of world trade in ITA products.**
- **About 90% of IT products under the ITA are imported duty free.**
- **The IT sector is the most dynamic sector and new IT products enter the market everyday.**

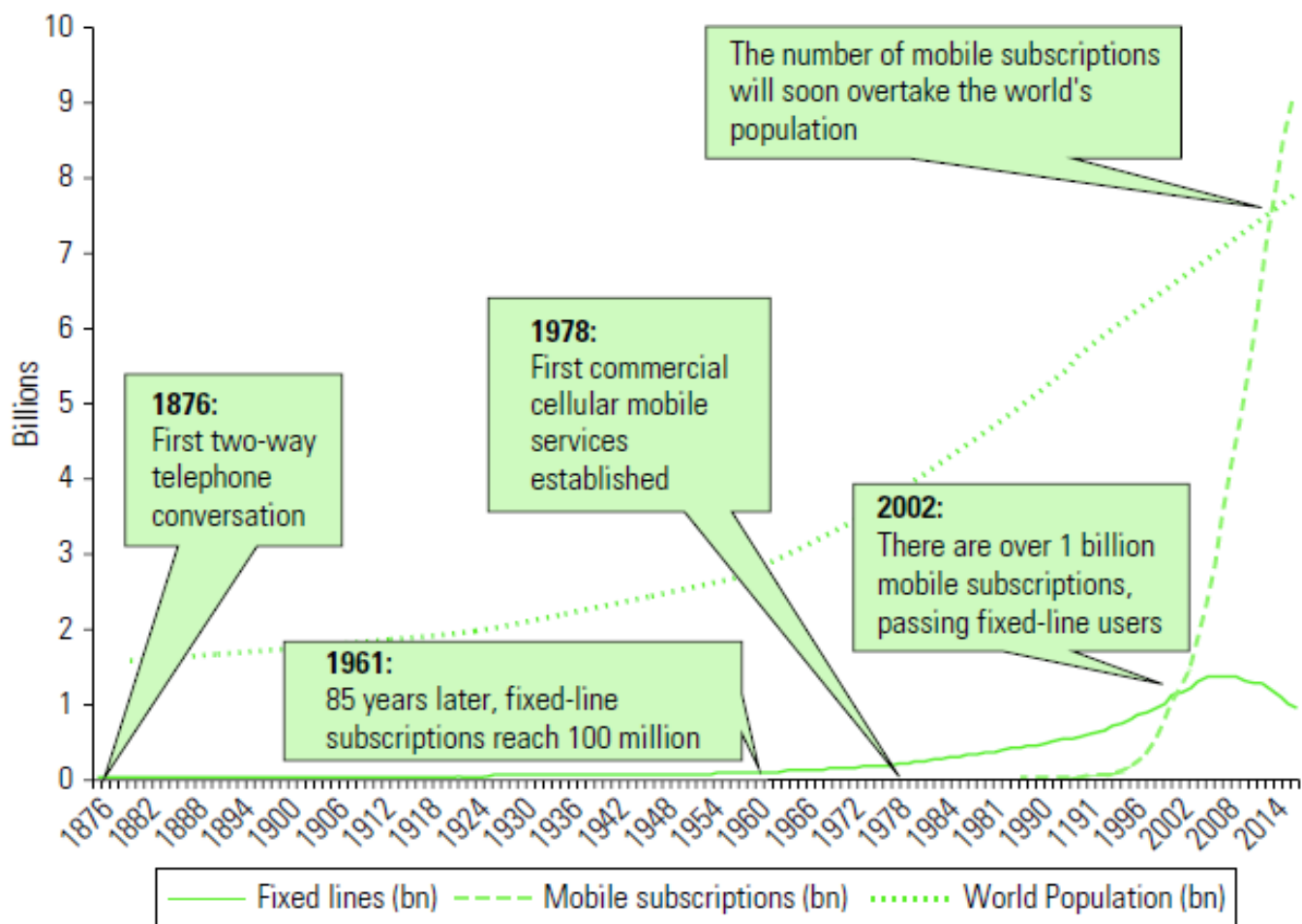
# ITA and GVCs

- **The general-purpose nature of IT means that its widespread use in other economic sectors helps induce organizational and technological innovation throughout the economy. Innovation in IT itself has a magnified effect on economic productivity.**
- **Technological innovation in the core ITA areas (i.e. semiconductors, computer technology and telecommunications) has grown faster than other sectors since 1997.**

# World exports of IT products: top 10 HS subheadings



**Figure A.1 Worldwide fixed and mobile telephone subscriptions**



**Source:** Adapted from ITU, World Bank estimates.

**Note:** Log scale.

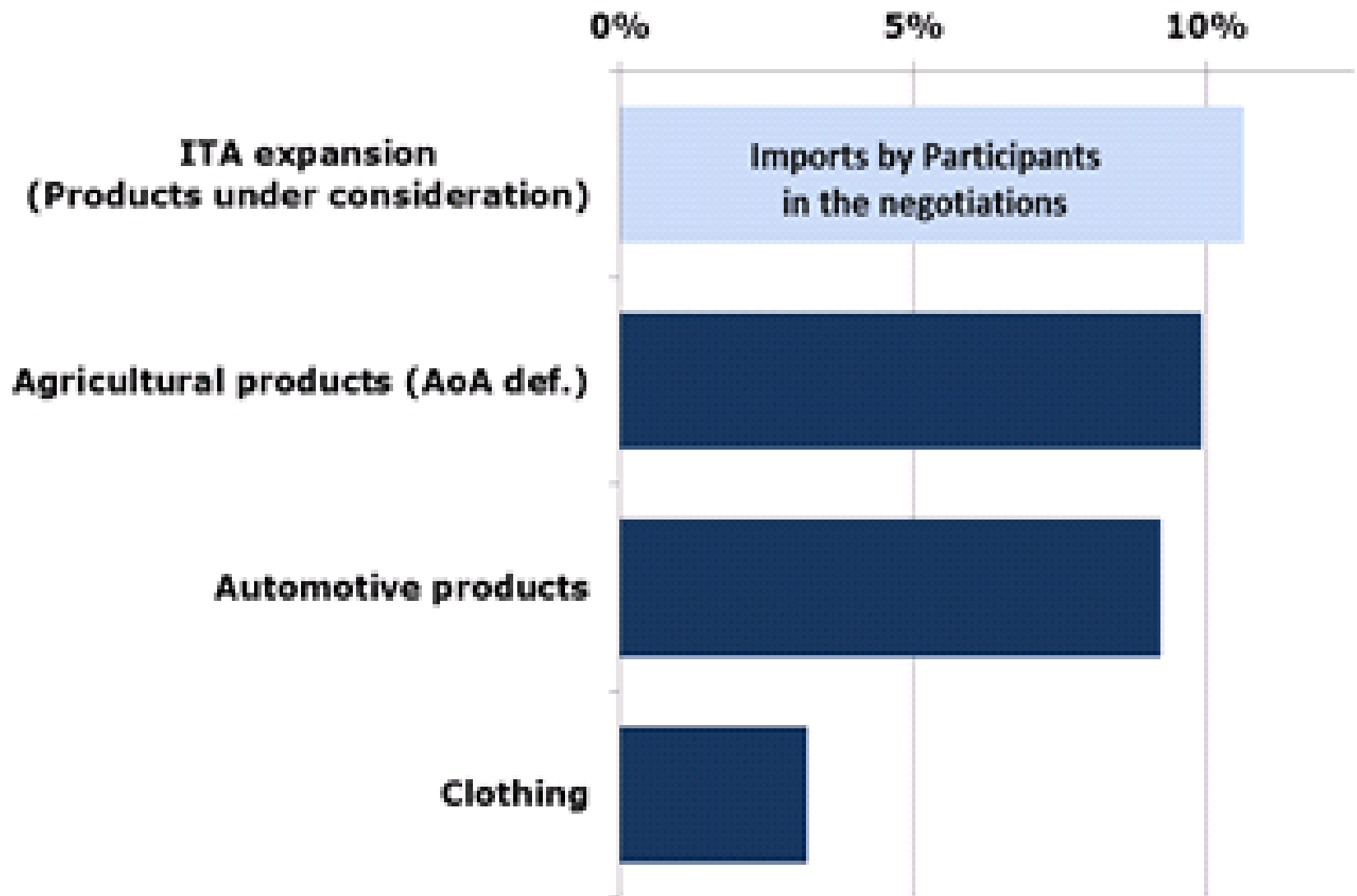
# ITA and GVCs

- **Tariff reduction/elimination has made such promotion possible.**
- 
- **Continuous trade liberalization, including tariff reduction/elimination will further promote the GVCs, including GVC participation.**

# On-going ITA Product Expansion

- **The current ITA product expansion negotiations are among 27 ITA participants, including: Albania; Australia; Canada; China; Colombia; Costa Rica; Dominican Republic; El Salvador; the European Union; Guatemala; Hong Kong, China; Iceland; Israel; Japan; Korea; Malaysia; Mauritius; Montenegro; New Zealand; Norway; the Philippines; Chinese Taipei; Singapore; Switzerland; Thailand; Turkey; and the United States.**
- **Counting the EU as 28, there are 54 WTO members participating in the expansion negotiations.**
- **According to some estimates, the above WTO members participating in the negotiations are considering a liberalization package that would account for roughly US\$ 0.8 trillion to US\$ 1.4 trillion of annual trade, and they account for approximately 90 per cent of such trade.**

**Size of the ITA Expansion vs other Sectors,  
Share of World Imports  
(2009-2011 AVG)**



# **ITA, The GVC and China**

- **Not surprisingly, all lead firms in the IT GVC are based in developed economies or newly-industrialized economies, such as the United States, Japan and Korea.**
- **Since the global financial crisis, a trend is the emergence of large IT companies from developing economies, especially from China.**



# **ITA, the IT GVC and China**

- In 2012, Lenovo shipped over 30 million laptops and 23.7 million smartphones, becoming the second largest computer manufacturer and a strong player in the smartphone market.**
- The same growth was seen with Huawei and ZTE. Both became global top smartphone manufacturers (APEC PSU 2013).**

# ITA, the IT GVC and China

- **Thus, China has not only benefited directly from the trade opportunities generated by the large economies of scale of the global IT value chain, but also benefited from the more and more affordable high-quality products which has led to the establishment of its IT sector, and new IT-enabled industries and services.**

# Smartphone and Laptops

Source: APEC Report on Global Supply Chain Operation in the APEC Region: Case Study of the Electrical and Electronics Industry, July 2013

## Worldwide smartphone shipments leaders in 4Q12

Company	Market share
Samsung	29.0% (63.7 million units)
Apple	21.8% (47.8 million units)
Huawei	4.9% (10.8 million units)
Sony	4.3% (9.8 million units)
ZTE	4.3% (9.5 million units)

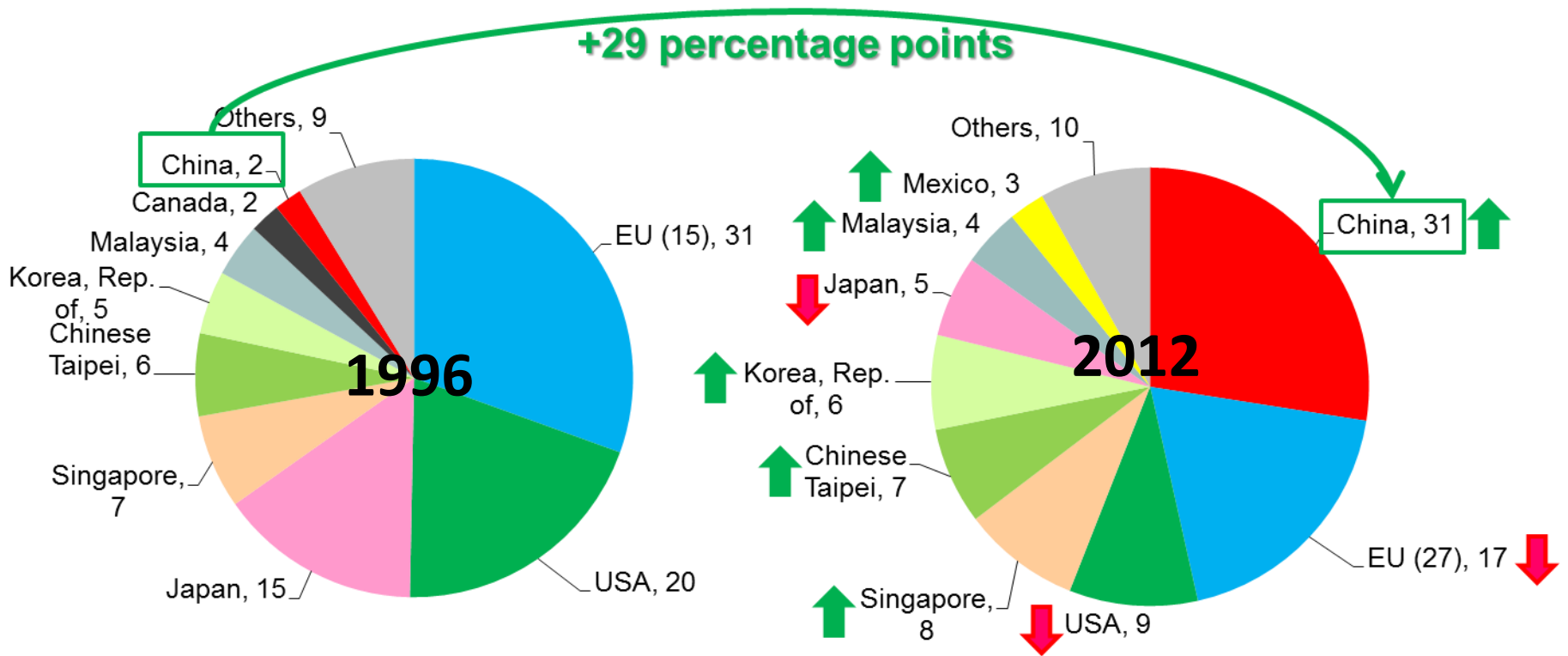
## Worldwide PC shipments leaders in 2012

Company	Market share
HP	58,129 (16.5%)
Lenovo	52,448 (14.9%)
Dell	38,718 (11%)
Acer Group	33,494 (9.5%)
ASUS	24,134 (6.8%)

# **ITA, the GVC and China**

- **Many SMEs in China are started with assembly operations and production of simple and low-value parts, gradually moving to more sophisticated parts with rising technical levels.**

# Leading exporters of IT products, shares in world exports of IT products(%), 1996 and 2012



Source: WTO Secretariat, based on UN Comtrade database and WTO estimates.

# China and intermediate goods

- **According to a World Bank study, over the past 20 years, East Asia in general and China in particular have become increasingly important in IT sector as well as other industries, both as production locations and final markets.**
- **This is reflected in the flow of intermediate goods. “Greater China” (mainland China, Hong Kong, and Taiwan) accounts for 33.1 percent of world imports of intermediate IT goods and 29.4 percent of exports.**

## According to UNCTAD data, in 2012:

- *IT goods made up 27 % of China's total merchandise exports;*
- *China was world's top exporter of all main categories of IT goods;*
- *China was the top importer of IT goods, with 18% of world imports and 34% of all electronic component imports, including re-imports from Hong Kong (China);*
- *Developing economies account for a significant part of IT GVCs;*