

# Global Production System and East Asian Trade: From a Global Value Chain Perspective

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## 1. GLOBAL VALUE CHAINS

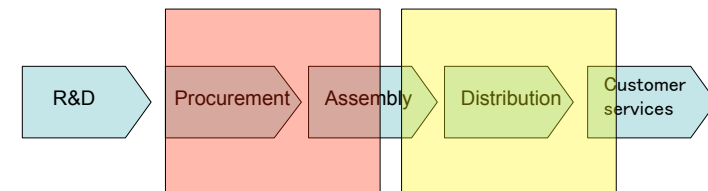
### (1) Economic Units, Linkages and Adjustment

- Economic Units : Facility Unit, Firm Unit, (Industry Unit, National Economy Unit)
- Linkage: Relation of Facilities
- Chains of Linkages : Value Chains for manufacturing particular products
- Network: Coordination mechanisms among units  
A bundle of value chains
- Production System: A bundle of networks

## Agenda

1. Global Value Chains(GVCs), Network, and Global Production System
2. Structure of Global Production System
3. Driving Forces of Trade
4. Structural Changes of East Asian Trade
5. Conclusion

### Value Added Activity



Intermediate goods trade  
Capital goods trade

Final goods trade

Continuance transaction

Once for all transaction

Before 2008

•Development of GVCs

After 2008

•Restructuring of GVCs

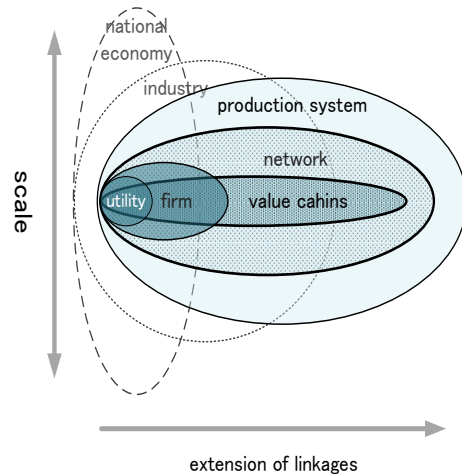
Before 2008

•Developed market oriented

After 2008

•Emerging market oriented

## Global Production System



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## 2. Structure of GVCs

### ➤ Firm behavior

- De-verticalization of big firms (Building core competencies rather than vertical integration, Offshore outsourcing)
- Horizontal and vertical integration of EMS (eg. Sanmina-SIC, Hon Hai) \*
- Cellular cluster (a process of spinning off — or "budding" — new ventures) [Mathews 2002]
- Growing trade in intermediate goods in each regions especially in East Asia

### ➤ Governance

- Gereffi (1994) : ① Producer driven ② buyer driven
- Gereffi, et al. (2005) : ① Modular , ② Relational, ③ Captive

\* EMS: Electronic manufacturing services is a term used for companies that design, test, manufacture, distribute, and provide return/repair services for electronic components and assemblies for original equipment manufacturers

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## Four Types of Linkage Chains and Structure of Adjustment

Adjustment Types of linkage chains	Main Unit	Exchange	Relationship	Condition of Knowledge and Information*	Pricing of Goods
Firm	Utility	In-house exchange	Ownership	Accumulation and Sharing of tacit knowledge	Transfer pricing
Value Chains	Utility (Firm)	Relational exchange	Cooperation Coordination Coalition	Sharing of information Transfer of explicit knowledge	Fixed pricing
Network	Firm Value chains	Relational exchange	Reputation Trust	Id.	Fixed pricing
Production System	Value chains Networks	All the above and Discrete exchange	All the above and Contract based	All the above and Information asymmetry	Fixed and Flexible

\* Knowledge is stock and information is flow.  
Source: Own illustration. Based on Goldberg(1976,1977), Macneil(1978), Spaeckman et al.(1998), Nonaka(1994), Kogut & Zander(1992), Nelson & Winter(1982)

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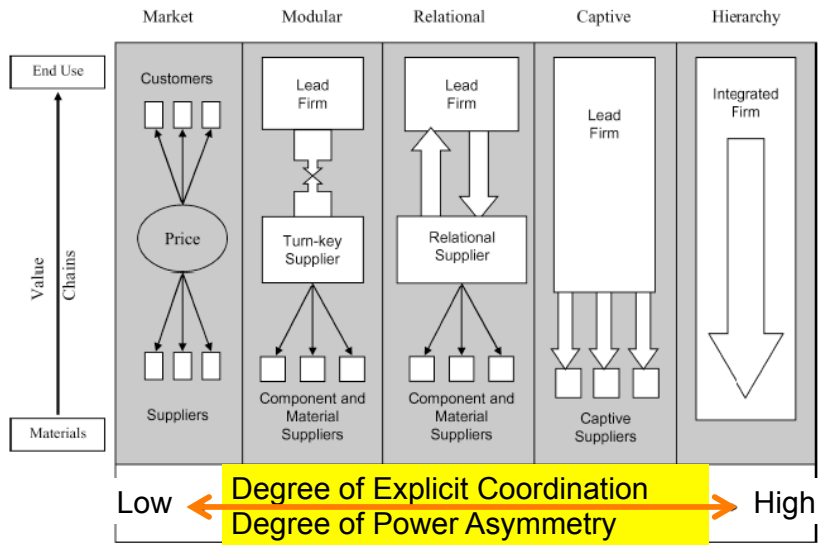
### Fair Trade Activity

#### Buyer-Driven Commodity Chains

	Producer-Driven Commodity Chains	Buyer-Driven Commodity Chains
Drivers of global commodity chains	Industrial capital	Commercial capital
Core competencies	Research & development, production	Design, marketing
Barriers to entry	Economies of scale	Economies of scope
Economic sectors	Consumer durables, intermediate goods, capital goods	Consumer nondurables
Typical industries	Automobiles, computers, aircraft	Apparel, footwear, toys
Ownership of manufacturing firms	Transnational firms	Local firms, predominantly in developing countries
Main network links	Investment-based	Trade-based
Predominant network structure	Vertical	Horizontal

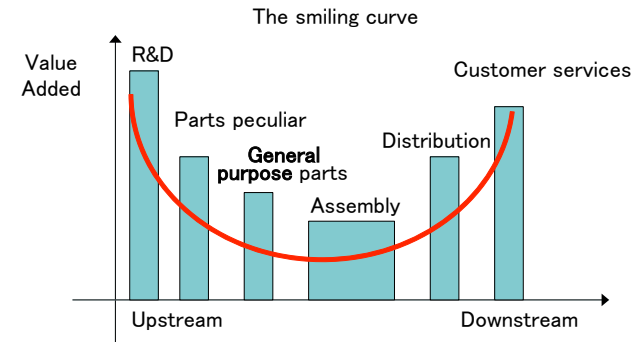
Source: Gereffi (2001)

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Source: Gereffi, et al. (2005)

- Value Creation and Value Capture
- Tangible Asset and Intangible Asset



Types of Accumulation: Intangible Asset (yellow), Tangible Asset (green), Intangible Asset (yellow)

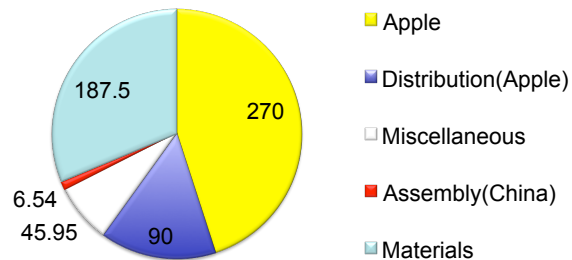
Back ground: Modularization and Open Architecture

Source: Own illustration.

### 3. Driving Forces of Trade

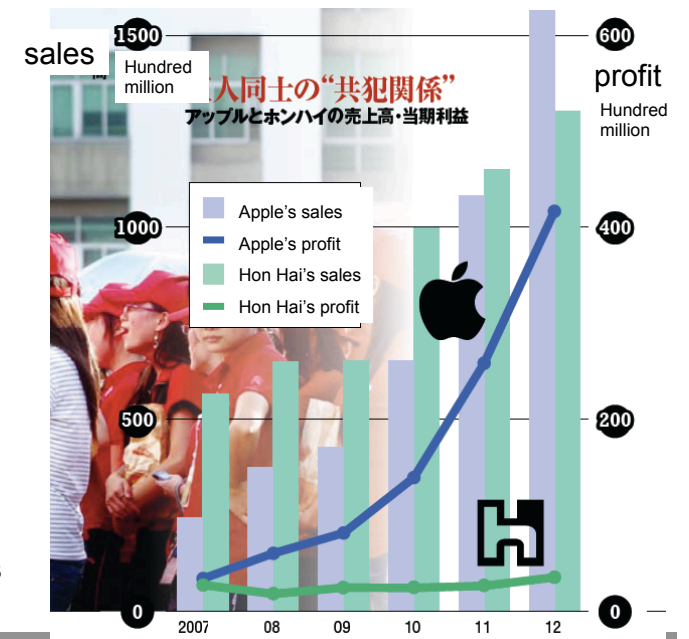
- Lead firm and Business Model

Apple's iPhone4 (retail price = USD 600)



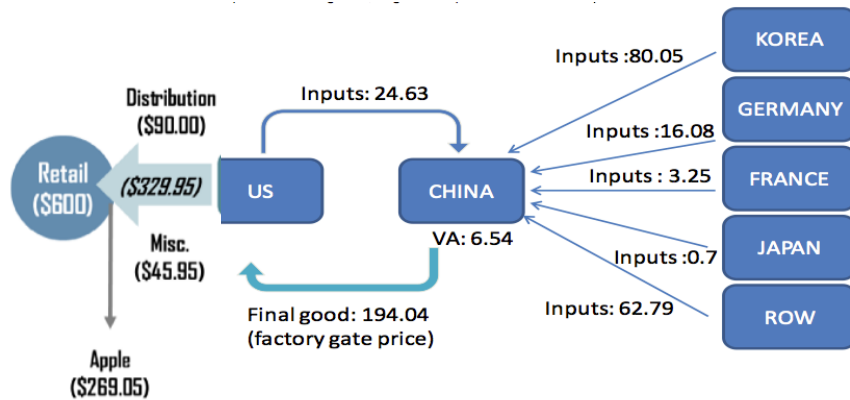
Value creation and capturing

Source: OECD (2011) "Global Value Chains: Preliminary Evidence and Policy Issues"



2013/08/23  
Nikkei Business

## Value Creation and Capture, iPhone 4



US trade balance with	CHINA	KOREA	GERMANY	FRANCE	JAPAN	ROW	WORLD
Gross	-169.41	0	0	0	0	0	-169.41
Value added	-6.54	-80.05	-16.08	-3.25	-0.7	-62.79	-169.41

Source: OECD (2011) "Global Value Chains: Preliminary Evidence and Policy Issues"

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### ➤ Quantity Adjustment and Capability Divide

- scale economy of facility unit, not firm level
- flexibility of arrangement among facilities(providers)
- capability divide among facilities(providers)

### ➤ Possibilities of Downgrading

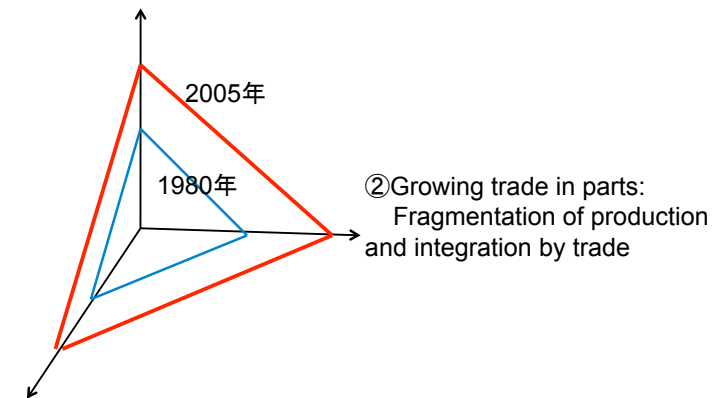
- intense competition among firms for participating GVCs
- intense competition among nations for inviting foreign firms
- deterioration of standards (ex. labor standard)
- struggling for bottom
- reduction of value added
- dismantling of GVCs for seeking more cheaper foreign labor

### ➤ Possibilities of Upgrading

- capture more value
- capture capabilities through GVCs
- accessing new market

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### ③Vertical differentiation of traded goods: Vertical intra industry trade in East Asian



②Growing trade in parts: Fragmentation of production and integration by trade

### ①De-verticalization and consolidation of GVCs:

The result of lead firm activity and the development of business model( like Apple )

## 4.Structural Changes of East Asian Trade\*

### ➤ Analysis based on Classification by Broad Economic Categories

2 - Industrial supplies not elsewhere specified

"22-Processed" shown by Orange line

4 - Capital goods (except transport equipment), and parts and accessories thereof

"41-Capital goods (except transport equipment)" shown by Black line

"42-Parts and accessories" shown by Purple line

5- Transport equipment and parts and accessories thereof

"53-Parts and accessories" shown by Green line

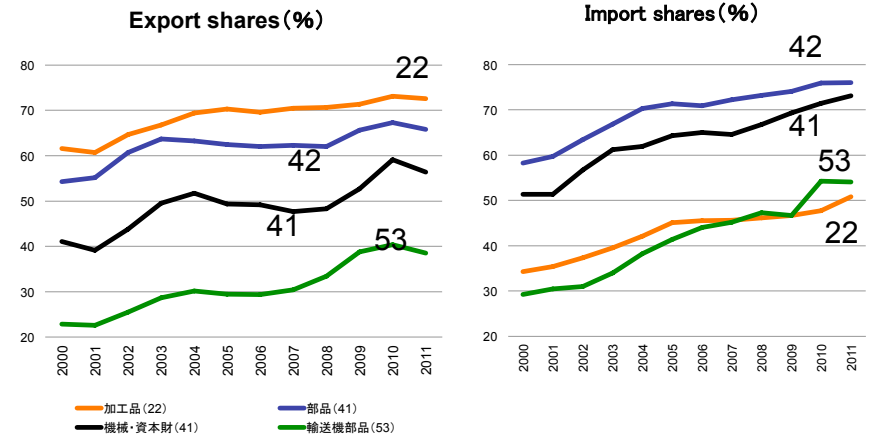
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➤ East Asian Trade

Korea, Taiwan, Hong Kong, Singapore,  
Indonesia, Malaysia, Philippines, Thailand,  
Viet Nam, Cambodia, China,  
Excluding trade between China and Hong Kong

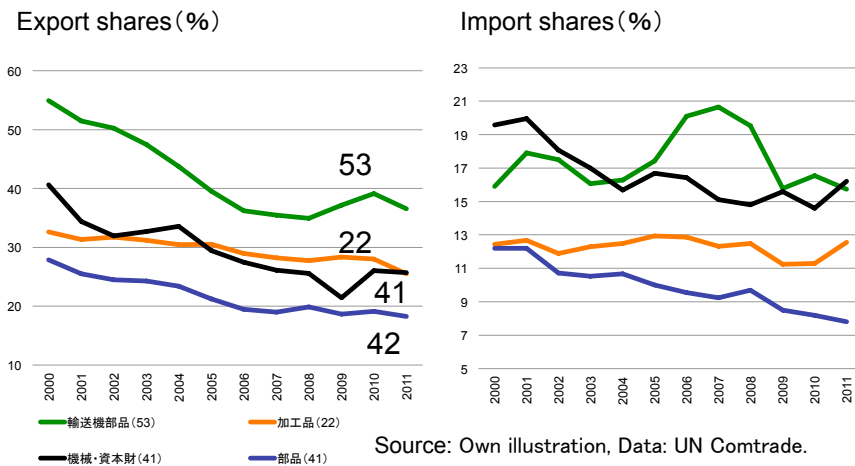
4. Structural Changes of East Asian Trade\*

➤ Japan's Trade shares with East Asia



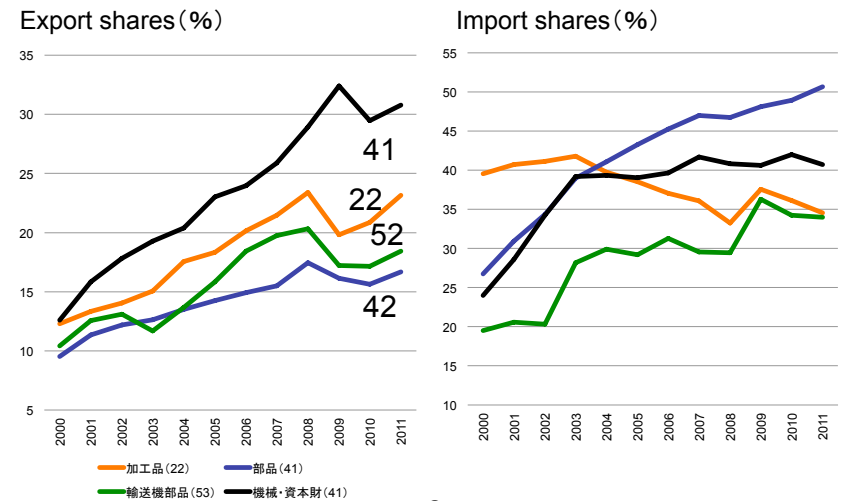
Source: Own illustration, Data: UN Comtrade.

➤ East Asia trade shares with Japan



Source: Own illustration, Data: UN Comtrade.

➤ China trade shares with East Asia



Source: Own illustration, Data: UN Comtrade.

## 5. CONCLUSIONS

- Global Value Chains:
  - consolidation of many firms manufacturing particular products
- Fragmentation of production in East Asia
- Integration by trade in East Asia Region
- Upgrading and downgrading
- Shift in demand: From developed market to emerging market
- Shift in production: consolidation of GVCs
  
- Middle income trap

THANK YOU FOR YOUR ATTENTION!