

Industrial Policy & CLMV Economy EE.

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(1)

**STRATEGIC INDUSTRIAL POLICY AND
LATECOMER DEVELOPMENT:
THE WHAT, THE WHY, AND THE HOW**

BY

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WHAT is strategic industrial policy?:Definition

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- “Forward-looking packages of policies aimed at steering economic activity in a particular direction”
- Aimed to foster new industrial capacity, diversify production, create inter-sectoral and inter-industry linkages, promote learning, improve productivity and shift economic activity towards higher technology and value added activities, and improve competitiveness in the domestic market

Strategic Industrial Policy (SIP)

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1. Industrial Diversification
2. Industrial Deepening
3. Industrial Upgrading

1. Industrial Diversification

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- Creation of new industrial capacity and sectoral diversification
- Mobilizing and investing capital in new activities
- Increasing the role of manufacturing in production
- Expanding the range of products that is produced and exported
- Light consumer goods → Mid-technology sectors → High-technology sectors
- Robust experience and market diversification differentiate “The rest” from “The remainder”

1. Industrial Diversification

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- “You become what you export”– More advance export package, the country will grow more rapidly
- Diversification to “nearby product” is easier, but benefits is smaller and insufficient for long term growth
- Diversification to “distant product” is better!
- Successful diversification can be both expanding within product categories with similar technology and similar production and diversify into distant product lines.

2. Industrial Deepening

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- Creation of local linkages and complementarities
- Creating more complete, more balanced and more inter-linked industrial structure
- SIP highlights the important role of internal integration; contribute to high and sustained growth
- Industry create “backward linkages” when it uses the inputs of other industries
- But “forward linkages” occur when the outputs serve as inputs to other local industries

2. Industrial Deepening

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- Fostering and supporting dense networks of local suppliers and of providers of other specialized inputs are vital for sustainable economic growth
- SIP must seek to balance the supply and demand sides of economies and introduce measures that help developing countries to capture more of the value added and allow local wages to reflect productivity gains

3. Industrial Upgrading

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- Aimed at fostering more advanced and competitive industrial structure
- Mastering more complex technological technologies through processes of technological advance
- Enhancing the capacity for “value creation” by moving to higher value economic activities—product upgrading, process upgrading or functional upgrading
- Raising local value added to able to move toward international level

SIP is part of an overall development strategy

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- Identify priorities and promote cumulative change in the direction chosen
- SIP is flexible– adjust to shifting circumstances
- SIP is characterized by a strategic interaction with the private sectors both to information about present constraints and future opportunities, and to make implementation effective

Export-oriented industrial strategies (EOI) VS Import-substitution industrial strategies (ISI)

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- ISI failures: found in countries that have non-selective and non-temporal trade protection. Inefficiency, rent-seeking, favouring of capital-intensive production (limiting employment), technological dependence
- EOI failures: low-value added activities, low level of innovative processes, low technological capability, require many imported raw materials, few local linkages

Functional VS Selective Industrial policies

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- Functional industrial policies aimed to improve markets by effecting function across ALL or MANY industries
- Selective industrial policies target particular industries and aimed to produce a different profile of industries compared with market situation
- SIP must be selective to avoid ISI and EOI failures

Conclusion

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- “The optimal content and mode of industrial policy intervention changes with the initial national conditions and with the stage of development or phase of industrialization. It also varies with sectoral characteristics, local capabilities and international conditions.”

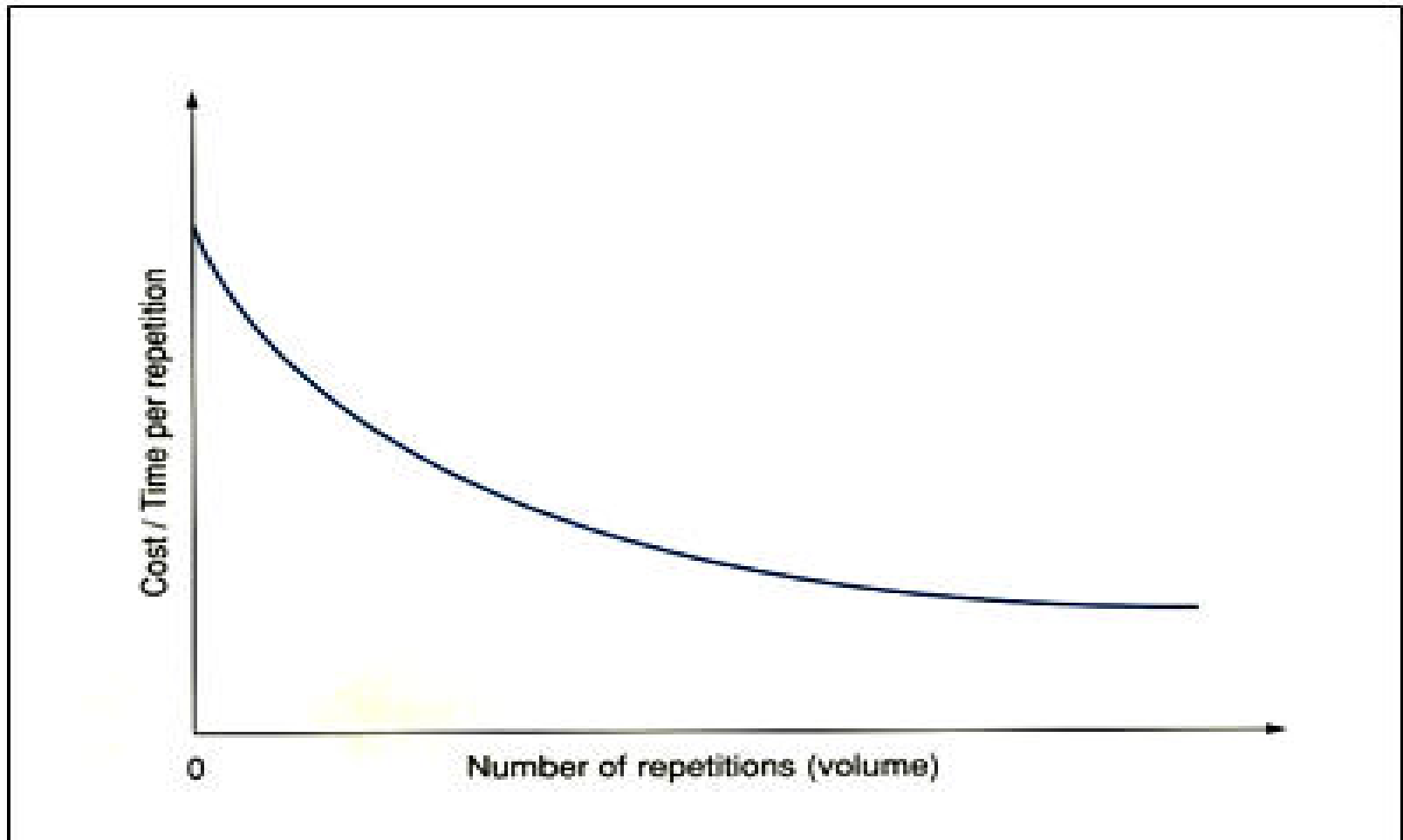
WHY Strategic Industrial Policy?: 1st rationale

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- **Market failure**
 - Non-efficient allocation of resources
 - Imperfect competition
 - Externalities
 - Insufficient information

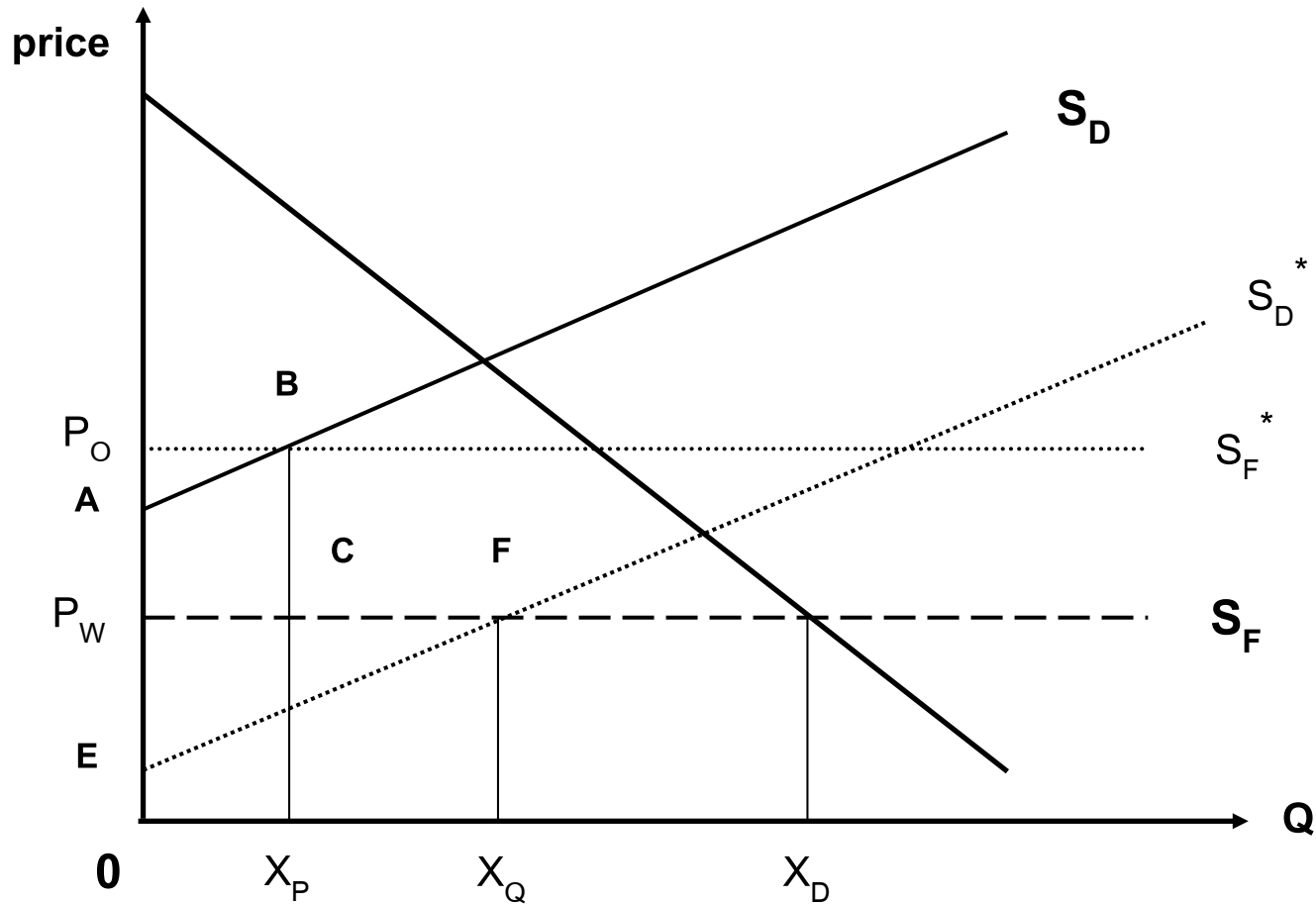
Learning Curves Effect

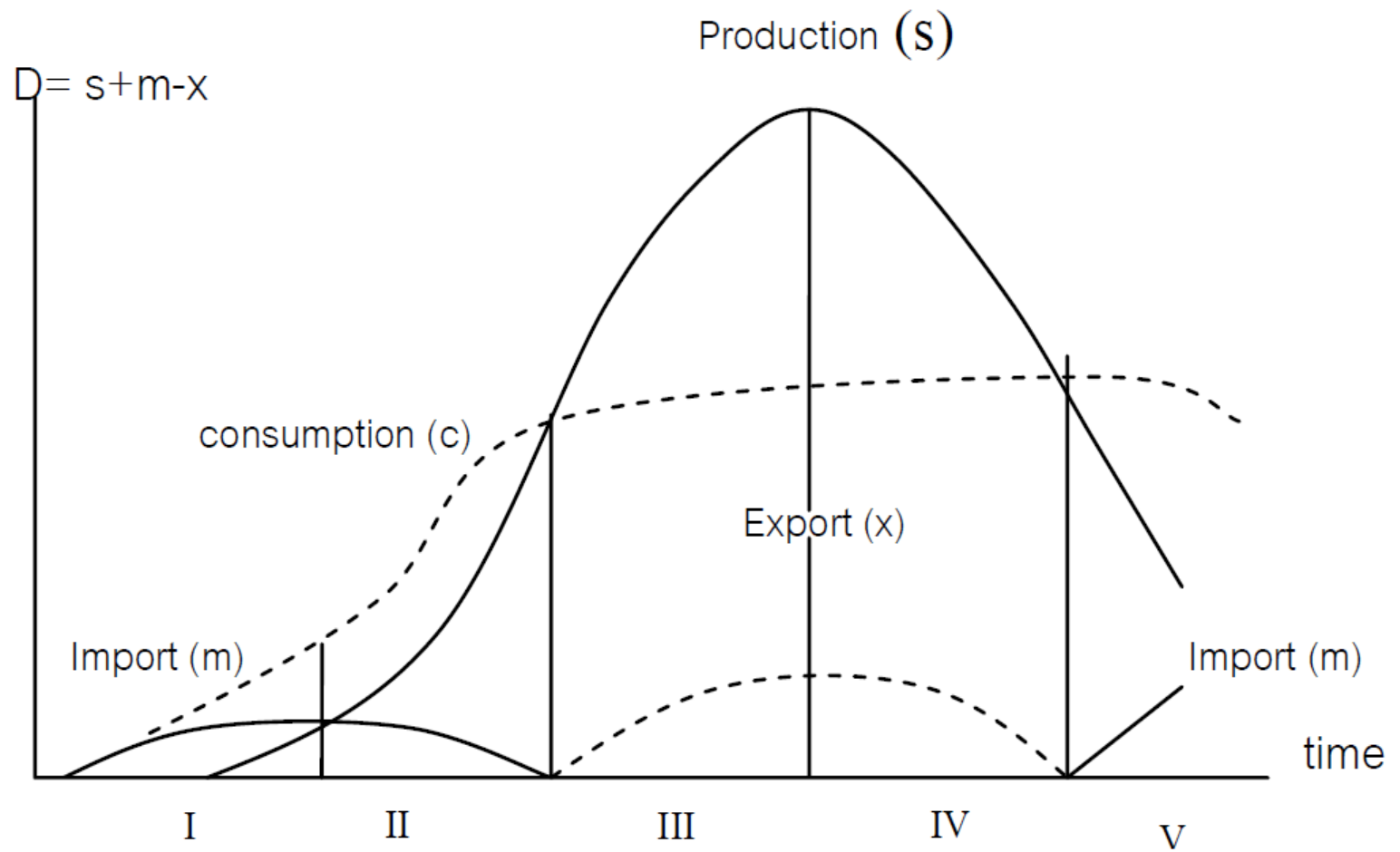
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Infant Industry

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The second rationale

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- Micro-issues(Firm level)
 - Comparative advantages
 - Learning and technology
 - Public support
- Learning process
 - Level of information and skills
 - Organizational and managerial routines

The second rationale

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- Strategic industrial approach

Innovation

- ✦ New Products
- ✦ New processes
- ✦ New business models
- Acquired skills, knowledge and experience through many channels
 - ✦ Repair and maintenance equipment
 - ✦ Trial and error experimentation
 - ✦ Reverse engineering
 - ✦ Human resource formation

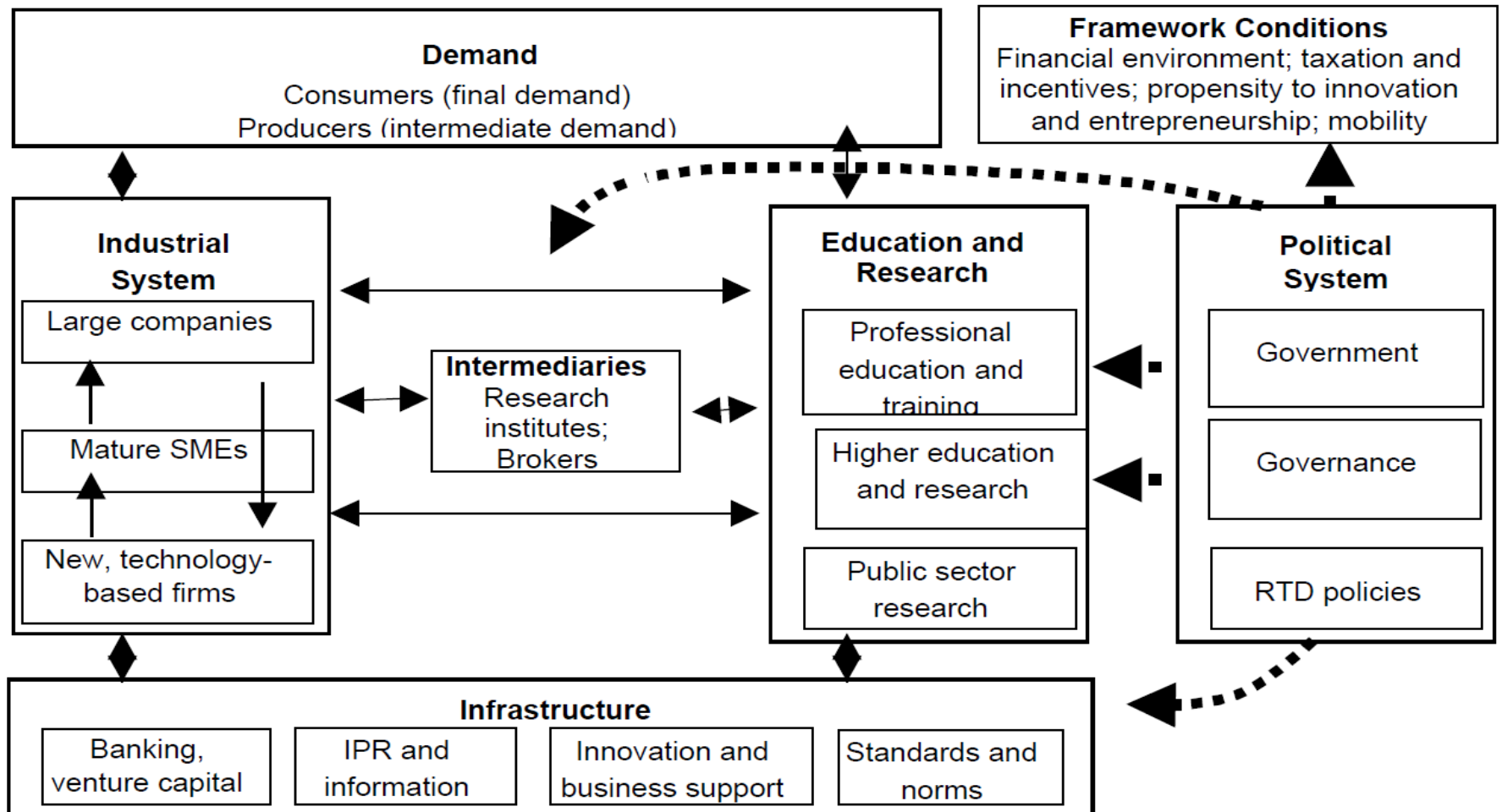
The second rationale

19

- **Strategic industrial approach**
 - Acquired skills, knowledge and experience through many channels
 - ✦ Transfer of knowledge and skills from long-term suppliers of machinery
 - ✦ Intermediate-goods producers
 - ✦ Foreign licensors
 - ✦ Customers
 - ✦ Consultants
 - ✦ Private contract facilities
 - For SI perspective one cannot specify an optimal system of innovation. The innovation process is evolutionary and path dependent over time, thus market failure becomes irrelevant
 - Occur of systemic problems

National Innovation System

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HOW of strategic industrial policy?

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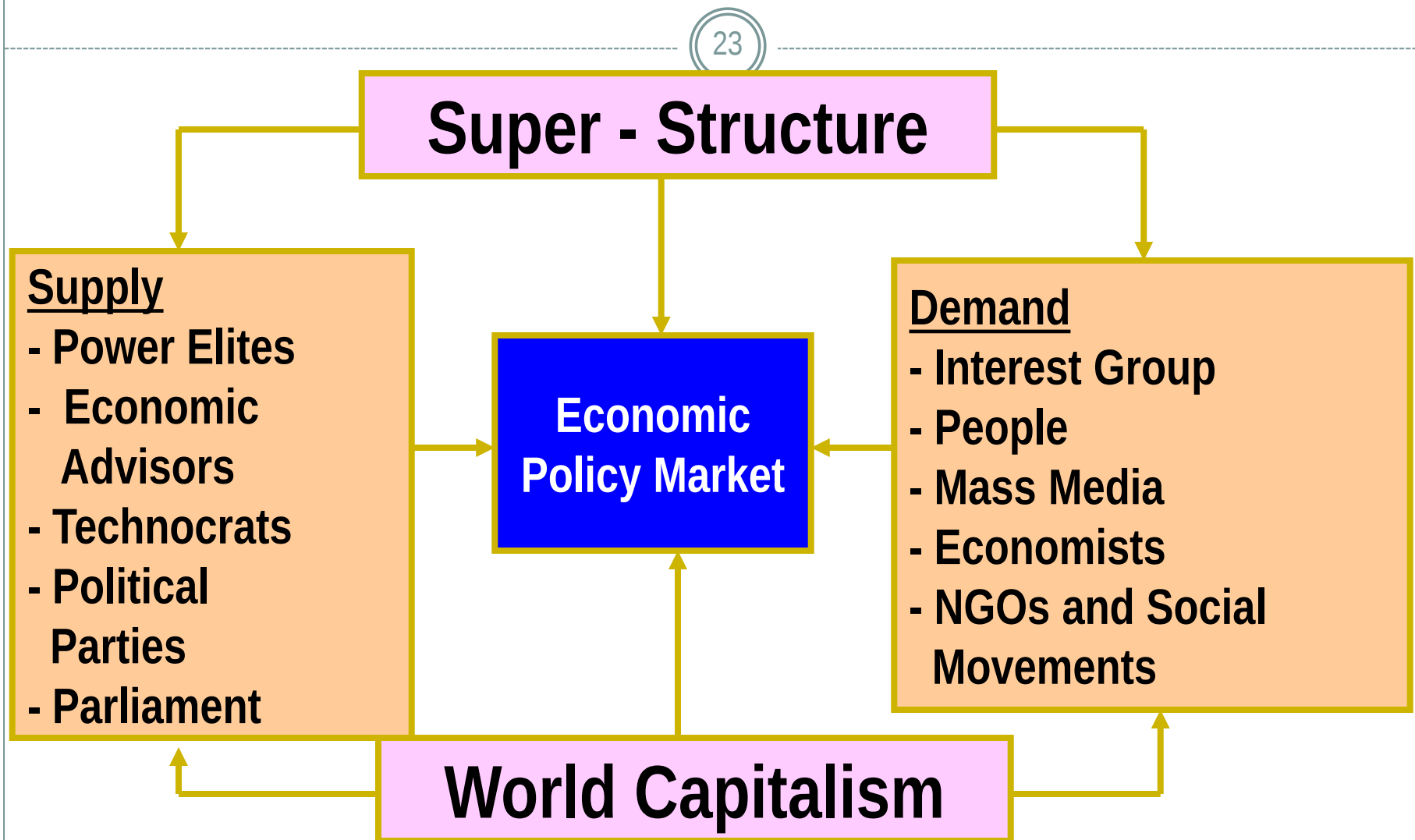
- the policy process to accomplish the What such as...
- How are countries to choose the correct strategy of dynamic transformation?
 - How are countries to decide on the relevant specific and complex public input?
 - How are countries to balance central guidance with decentralized policy negotiation and implementation?

How to do industrial policy can be divided into:

1. Institutional design
2. Institutional capacity
3. Politics

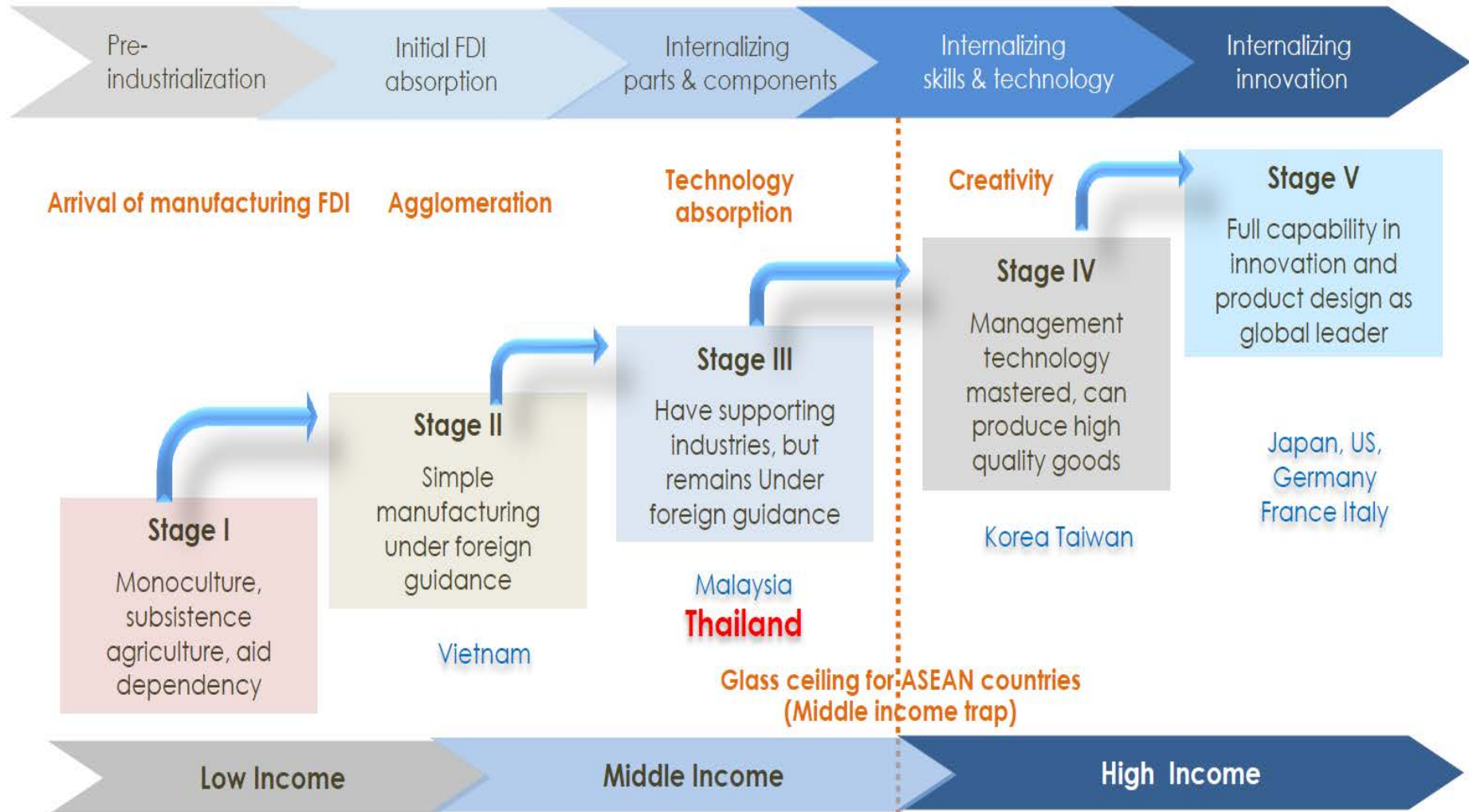
Process of Economic Policy Formulation

23



World Bank acknowledges that several Asian countries are in a 'middle income trap' where they can compete neither on low wages nor on technology. In order to climb onwards to higher income level, the policy and institutional changes needed are more complex and more challenging technically, politically and socially.





Source: Ohno (2009)

9 Design principles concerning what to do and how to do strategic industrial policy

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1. SIP must be seen as part of an over all productive development strategy or a national investment strategy that increases the surplus that can be invested
2. SIP is made up of policies that support one or all of the following processes: sectoral diversification, industrial deepening and industrial upgrading.
3. SIP emphasis on technology, collaboration, and competition
4. SIP is not caught up in and does not accept the classical juxtaposition of export-led and import substitution industrialization strategies.

9 Design principles concerning what to do and how to do strategic industrial policy

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5. Strategic integration of the national economy integration of the national economy, rather than de-linking or across-the-board opening.
6. SIP are intrinsically selective and anticipatory
7. Strategic industrial policy-making is compatible with institutional pluralism and policy variation.
8. SIP is transaction-intensive, experimental and highly uncertain, and therefore requires more institutional capacity than macroeconomic policy
9. The actual functioning of the bureaucracy is strongly influence by the nature of politics

(2)

Can We Go Beyond an Unproductive Confrontation?

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The Industrial Policy Debate:

Conceptual Issues and Neglected Facts

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- “Industrial policy,” the majority of us do not mean any policy that affects industry, but a particular type of policy that affects industries.
- Selective industrial policy or targeting— a policy that deliberately favors particular industries over others, against market signals, usually to enhance efficiency and promote productivity growth.
- The modern debate on industrial policy started in the late 1970s, with the rise of Japan. Japan was the first country used the term “industrial policy” (*sangyo seisaku*) to mean selective industrial policy.
- By the late 1980s, it came to be widely accepted that strong industrial policy was also practiced in Korea; Taiwan, China; and (in a very different way) Singapore; which had until then been thought to be free trade, free market economies.
- In the early days of the debate on industrial policy in East Asia, some denied its very existence.

East Asian Industrial Policy I

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- coordination of complementary investments (Big Push)
- coordination of competing investments through entry regulation, “investment cartels”, and (in declining industries) negotiated capacity cuts
- policies to ensure scale economies (e.g., licensing conditional upon production scale, emphasis on the infant industries starting to export from early on, state-mediated mergers and acquisitions)
- regulation on technology imports (e.g., screening for overly obsolete technologies, cap on technology licensing royalties)

East Asian Industrial Policy II

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- regulation on foreign direct investment (e.g., entry and ownership restrictions, performance requirements on local contents technology transfer, export)
- mandatory worker training (for firms above a certain size)
- the state acting as a venture capitalist
- export promotion (e.g., export subsidies, export loan guarantees, marketing help from the state trading agency)
- government rationing of foreign exchanges, with top priority going to capital goods imports (especially for export industries)

TABLE 2. Historical Rates of Economic Growth by Major Regions during and after the Age of Imperialism, 1820–1950

(annual per capita GDP growth rate, %)

Region	1820–70	1870–1913	1913–50	1950–73
Western Europe	0.95	1.32	0.76	4.08
Western offshoots ^a	1.42	1.81	1.55	2.44
Japan	0.19	1.48	0.89	8.05
Asia excluding Japan	–0.11	0.38	–0.02	2.92
Latin America	0.10	1.81	1.42	2.52
Eastern Europe and the former Soviet Union	0.64	1.15	1.50	3.49
Africa	0.12	0.64	1.02	2.07
World	0.53	1.30	0.91	2.93

Source: Maddison 2001, 126, table 3-1a.

Lessons from the Debate - Overview

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- Does targeting work? ('picking winners')
- Can the state "beat the market"?
- Political economy questions
- Bureaucratic capabilities problem
- Performance measurement
- The role of export
- Changing global environment.
- Further issues (productive capability-building, adjustment costs) – not discussed in this paper, but see the references in the paper

Targeting

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- In a world with scarce resources, targeting is inevitable.
- In such a world, every policy choice you make, however “general” it may look, has discriminatory effects that amount to targeting.
 - no such thing as R&D subsidies that supports all industries equally or “general” engineers or infrastructure that benefit every industry.
- Moreover, it is not true that less targeted policies are necessarily better (cf. social policy)
- The debate should not be on whether we should target, but how to target well.

Can State “Beat the Market”?

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- The state has frequently beaten the market.
 - e.g., Japanese auto industry, Korea’s POSCO, Brazil’s EMBRAER
- More importantly, many (although not all) of the “superior” decisions made by the state were made not because the government officials were omniscient or cleverer than businessmen but because they could look at things from a systemic and long-term, rather than sectional and short-term, point of view.
- Therefore, instead of debating whether the state can beat the market, we should be debating how to improve the quality of state decisions.

Political Economy Questions I

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- Successful industrial policy requires right “political” conditions
 - – the commitment of the leadership to economic development, the coherence of the state machinery, and the ability of the state to discipline the recipients of its supports.
- When considering the political realities of developing countries, it seems difficult to imagine how industrial policy, even if it were “correct”, can be implemented well in a developing country.
- But we should not let the best be the enemy of the good.
- In the real world, successful countries are the ones that have managed to find “good enough” solutions to their political economy problems and went on to implement policies, rather than sitting around bemoaning the imperfect nature of their political system.

Bureaucratic Capabilities II

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- There is also “learning-by-doing” in policy.
 - – Without trying out “difficult” policies, capabilities cannot be improved.
- The fact that something is “difficult” cannot be a reason not to recommend it.
 - – After all, developing countries are routinely told to adopt “best practice” or “global standard” institutions used by the richest countries, when many of them clearly do not have the capabilities to effectively run such institutions.

Performance Measurement

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- Performance targets clearly specified and the reporting requirements announced at the outset.
- The targets should be set in consultation with the business community.
- Targets need to be revised along the way, but too much flexibility should be avoided, as government flexibility can be abused by lobbying groups
- Where possible, export performance should be given a high status as a performance measure, as they are far less open to manipulation.
- Policy-makers need to pay more attention to the trends in performance indicators, rather than their absolute levels at any give point of time.

Export-related Policies I

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- Economic development is impossible without good export performance.
- But, saying that export is the key to economic development is not to say that developing countries should have free trade.
- Export success requires significant industrial policy even for comparative advantage-conforming industries, as export markets have high fixed costs of entry, which smaller firms and farmers may not be able to bear.

Export-related Policies II

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- Direct export subsidies (but banned by the WTO, except for the LDCs).
- State marketing help (JETRO, KOTRA, the Danish agricultural marketing boards in the early 20th Century).
- Risk-sharing through loan guarantees for exporters and insurance for payment defaults.
- Help with meeting quality standards through export product quality control, advice on sanitary and phytosanitary requirements, subsidised extension services.
- Indirect help through legal and financial supports for co-operative arrangements.

Changing Global Environment I

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- Changes in global business environment
 - – Increasing importance of FDI
 - – Increasing industrial concentration
- Changes in global rules of trade and investment
 - – WTO
 - – Bilateral trade and investment agreements

Changing Global Environment II

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- Importance of FDI has increased, but not as dramatically as is often claimed.
- Industrial policy (e.g., performance requirements) not as important for FDI decision as market factors (size, growth), infrastructure, quality of labour
- Business concentration has increased, but it goes up and down.
- “Chopping up” of value chains can open new opportunities.

Changing Global Environment III

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- WTO rules not as restrictive as believed.
 - – Tariffs allowed
 - – Emergency tariffs (sectoral surge, overall BOP problems)
 - – Subsidies for environment, agriculture, R&D, regional policies, and (for LDCs) export allowed de jure or de facto
 - – TRIPS constraining but not for older technologies
 - – TRIMS constraining but performance requirements for local labour, technology transfer, R&D, etc. allowed.
- Bigger constraints are aid/loan conditionalities and bilateral/regional trade/investment agreements
- All these rules are 'man-made' and can be changed if deemed necessary.

“Futile Debates”?

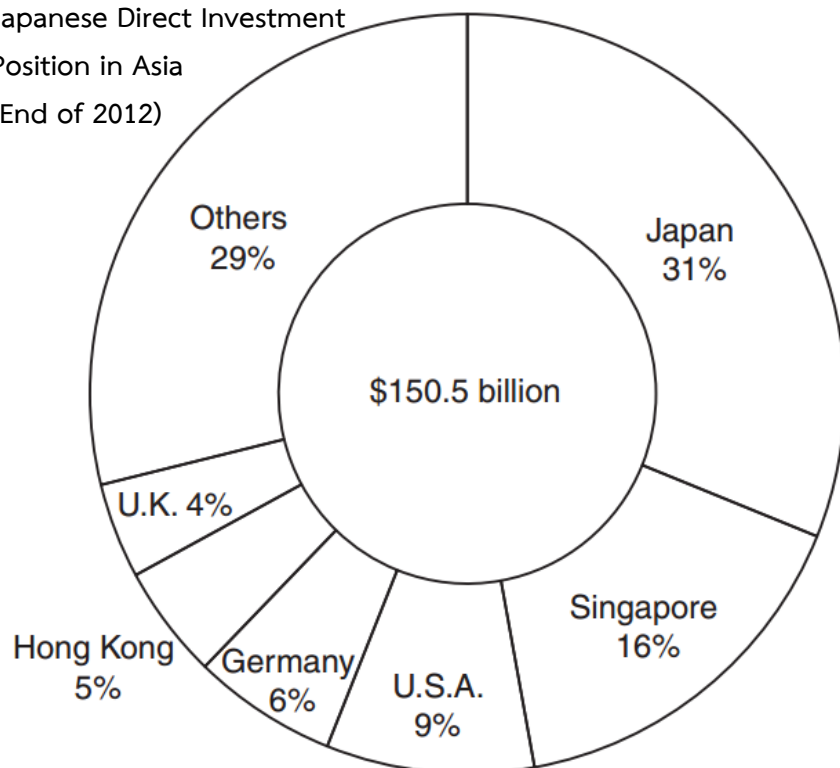
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- Too much focus on “grand” things, like the Big Push, when much of real-life policy has been about “boring” things (e.g., getting the production scale right, export marketing)
- Some theoretical issues that both the proponents and the opponents consider to be critical actually dissolve into thin air, once looked at closely (e.g., targeting).
- Many proponents of industrial policy do not fully appreciate how critical export is for the success of industrial policy, while many opponents do not fully appreciate how export success also requires industrial policy.
- We often let sensible worries (e.g., political economy, bureaucratic capabilities) degenerate into a recommendation for inaction, letting the best become the enemy of the good.
- Real life success stories were often based on “good enough” compromises, rather than perfect solutions.

Foreign Direct Investment & CLMV

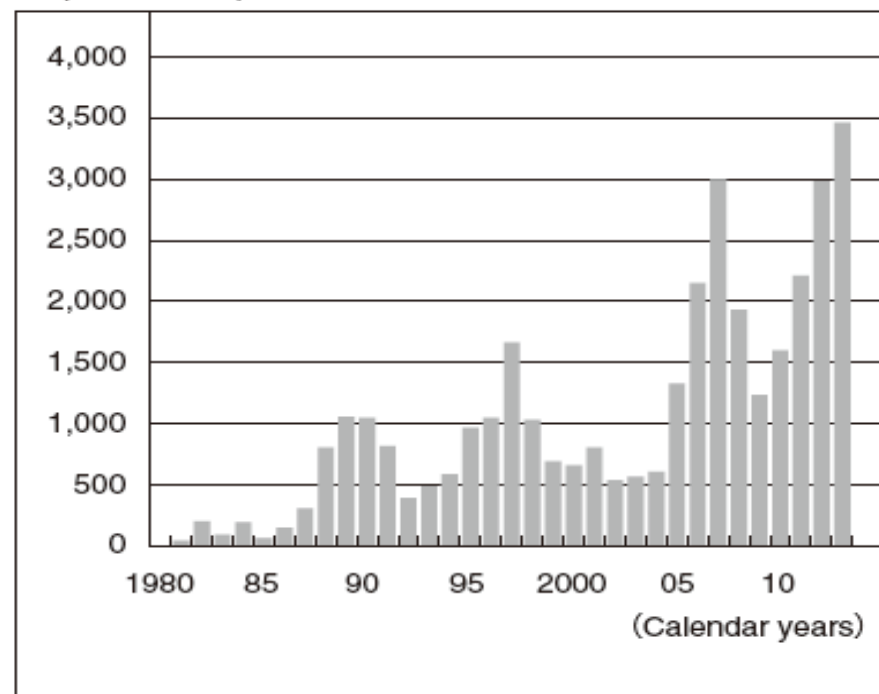
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Japanese Direct Investment
Position in Asia
(End of 2012)

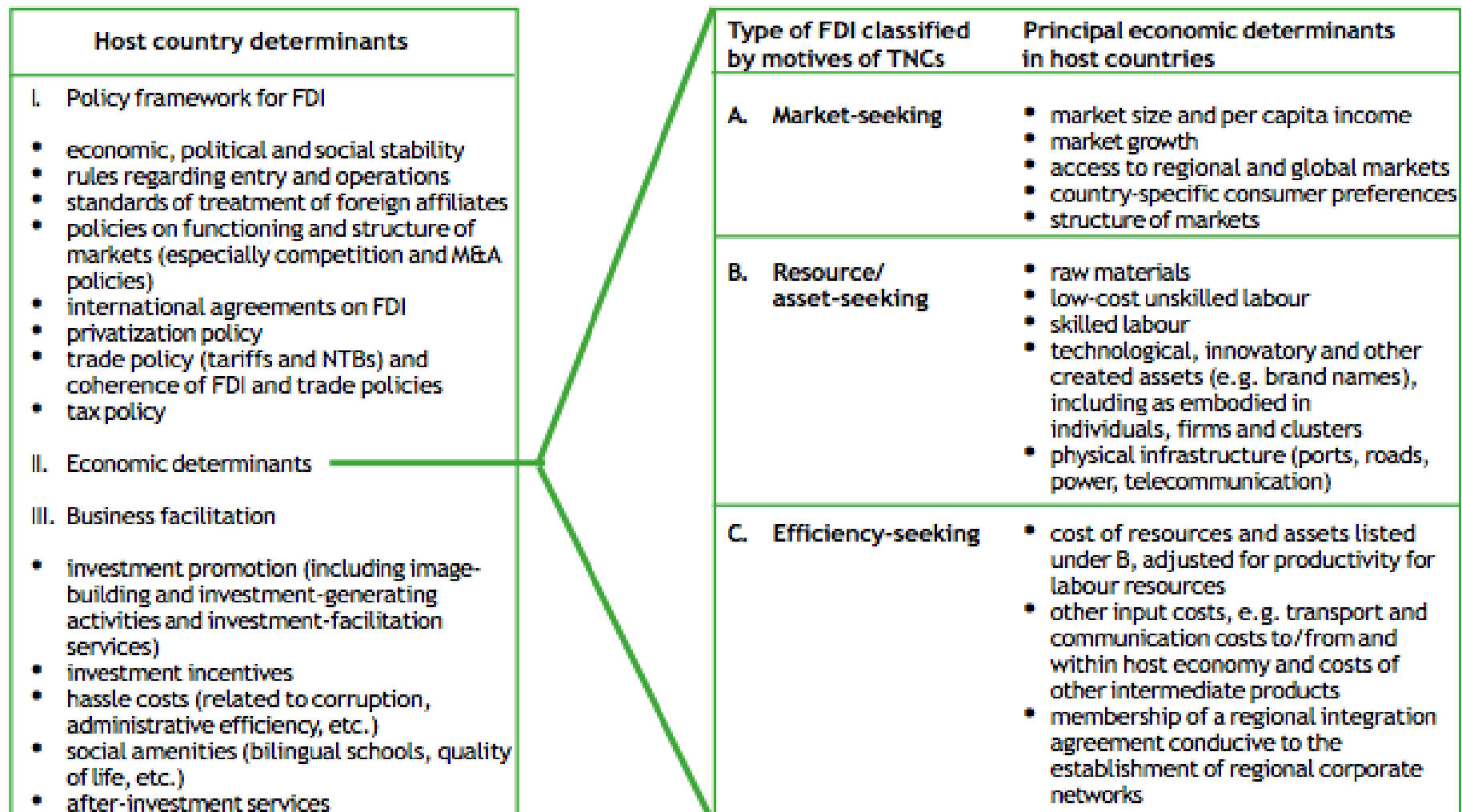


Source: Keiichiro Oizumi (2013)

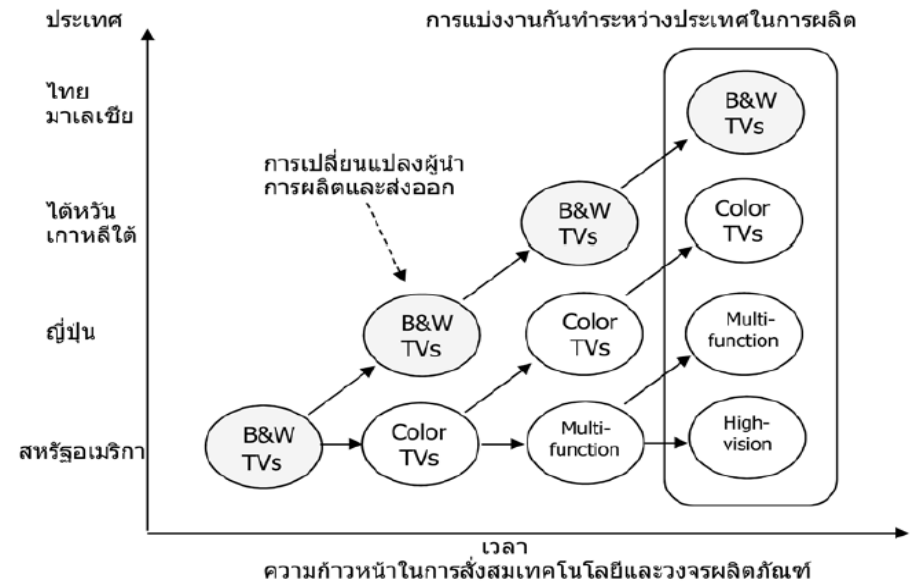
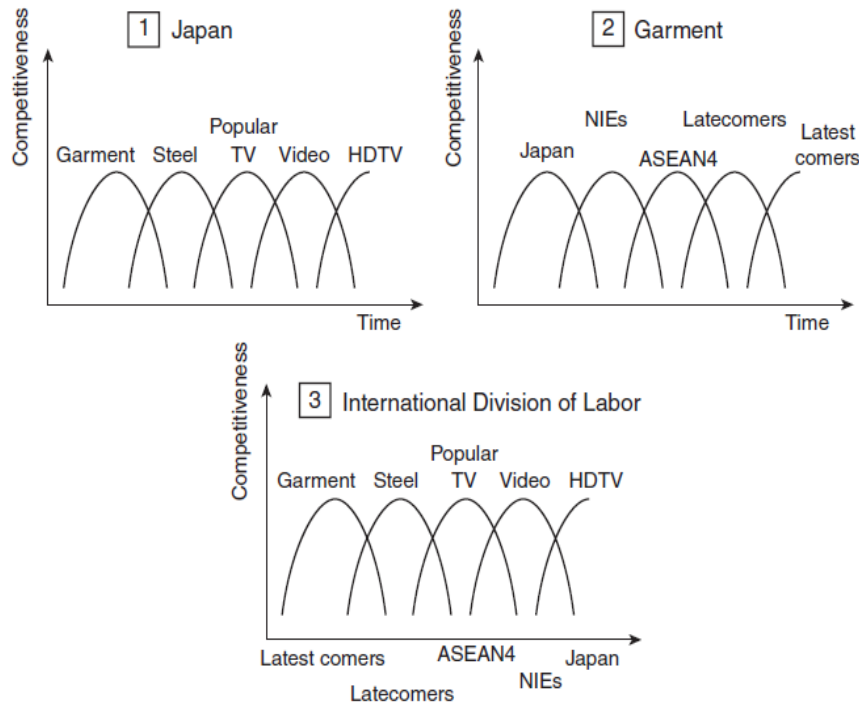
(¥100 million)



Source: Compiled by JRI using Ministry of Finance and Bank of Japan statistics

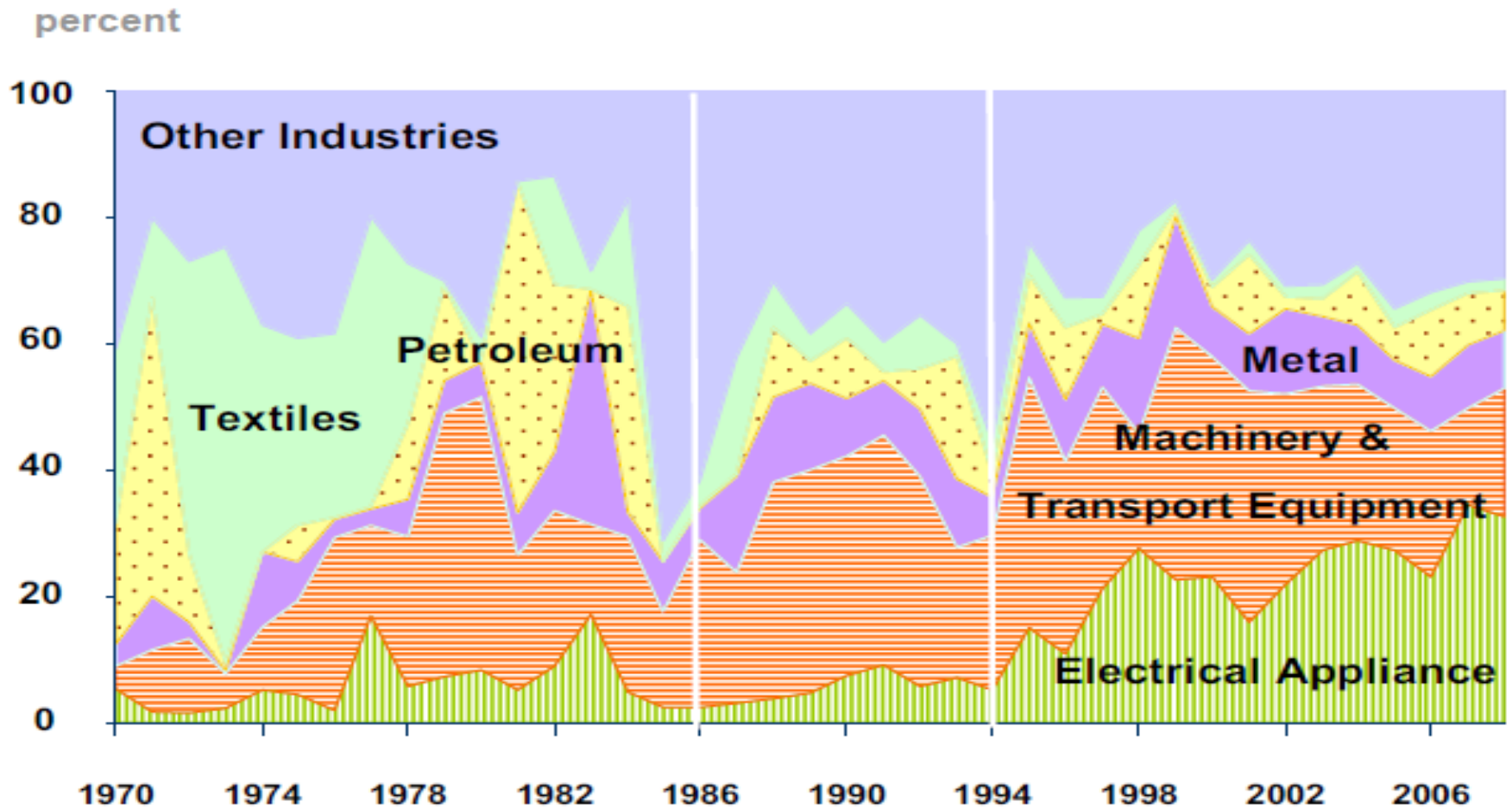


catching-up product life cycle

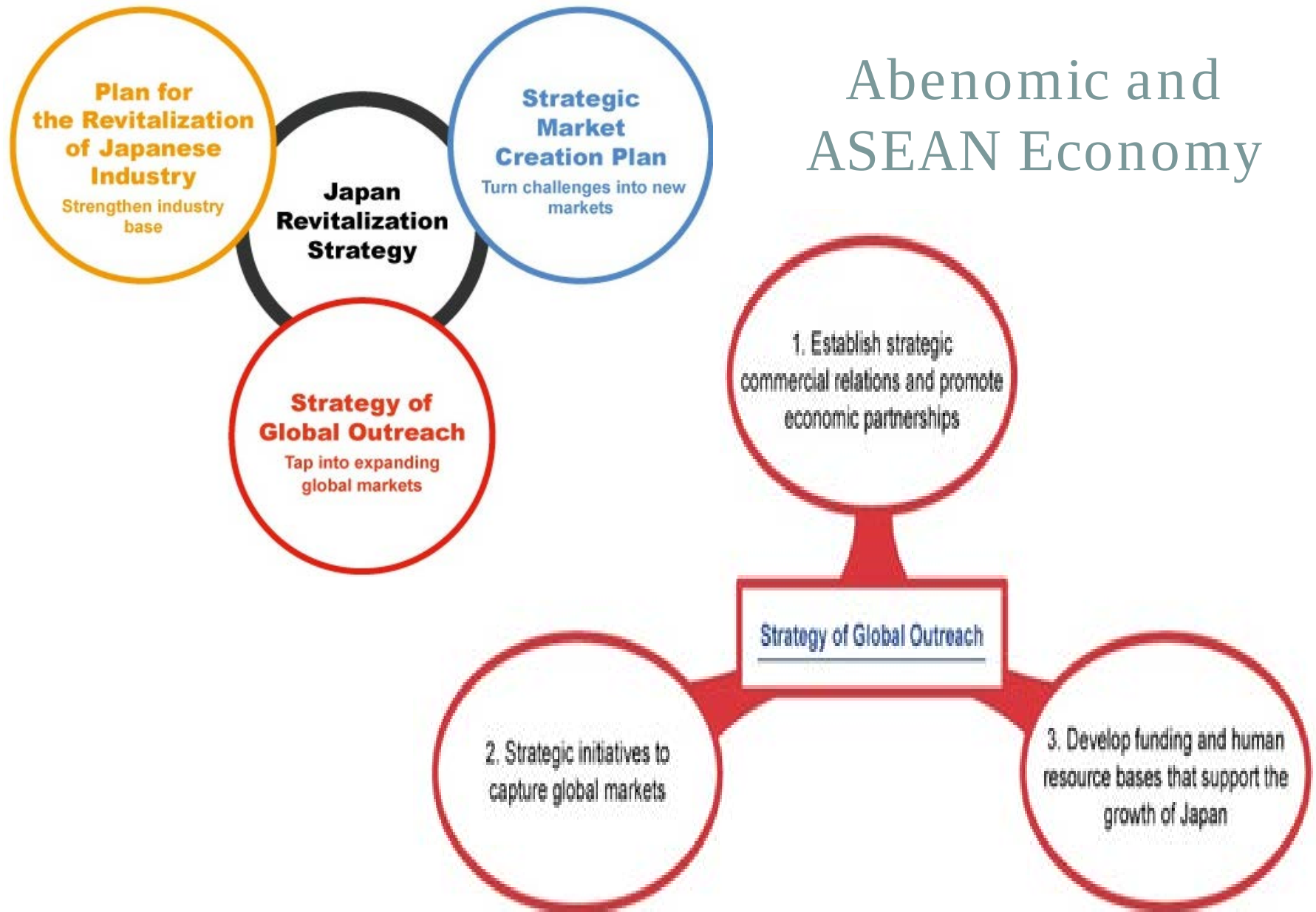


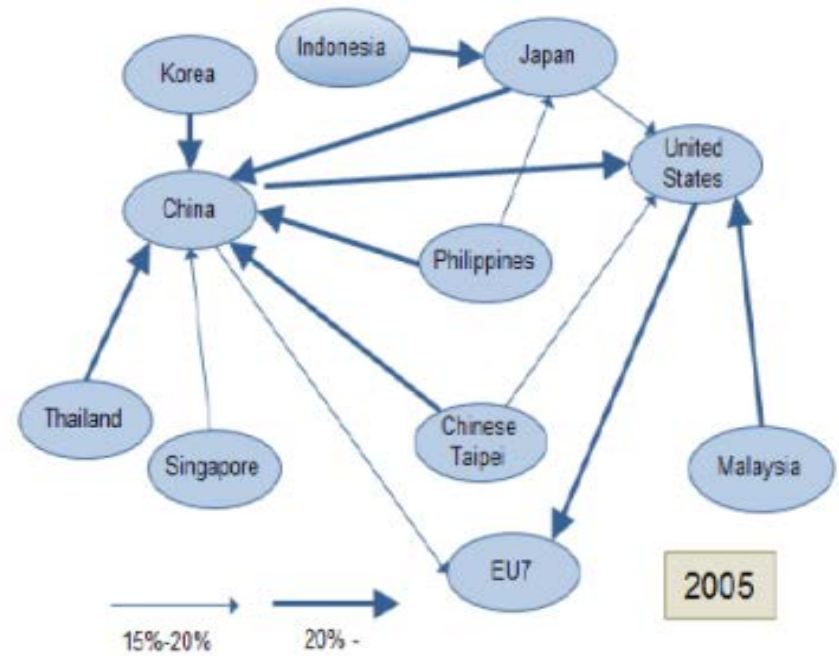
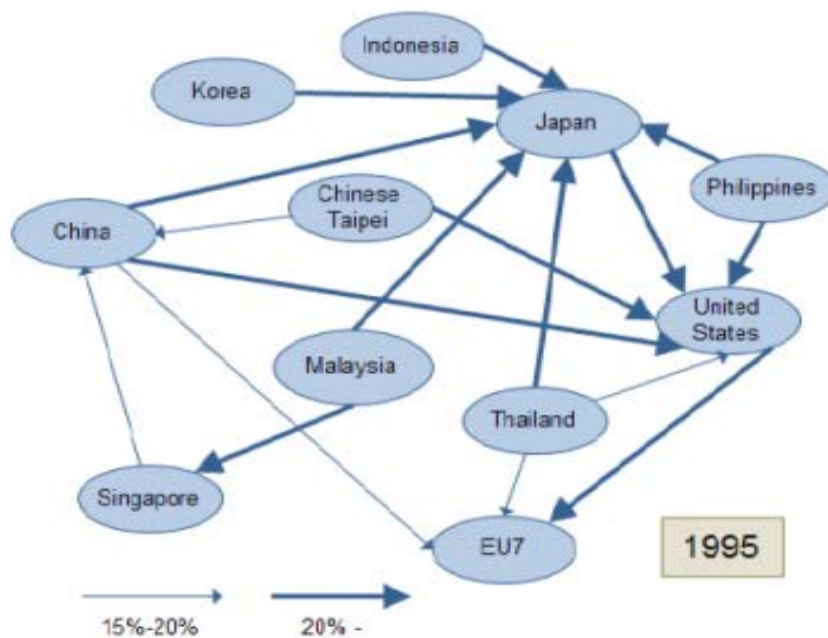
FDI and Thai Economy

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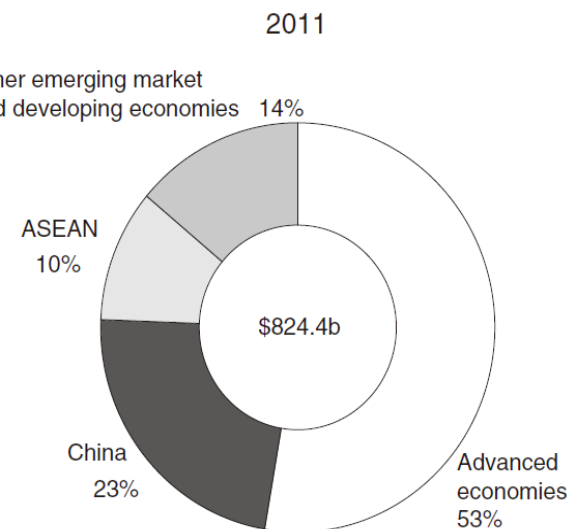
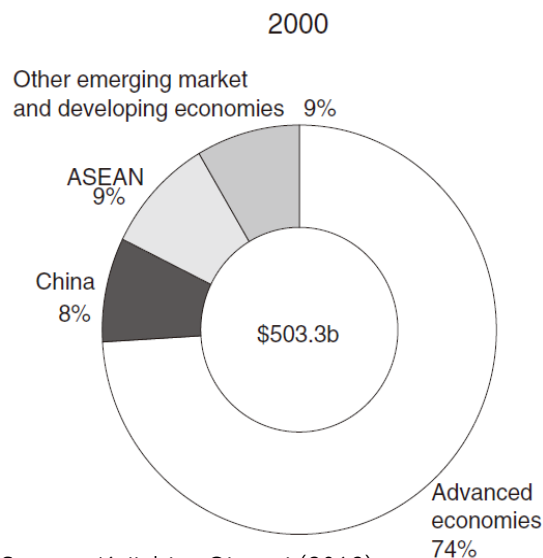
Abenomic and ASEAN Economy



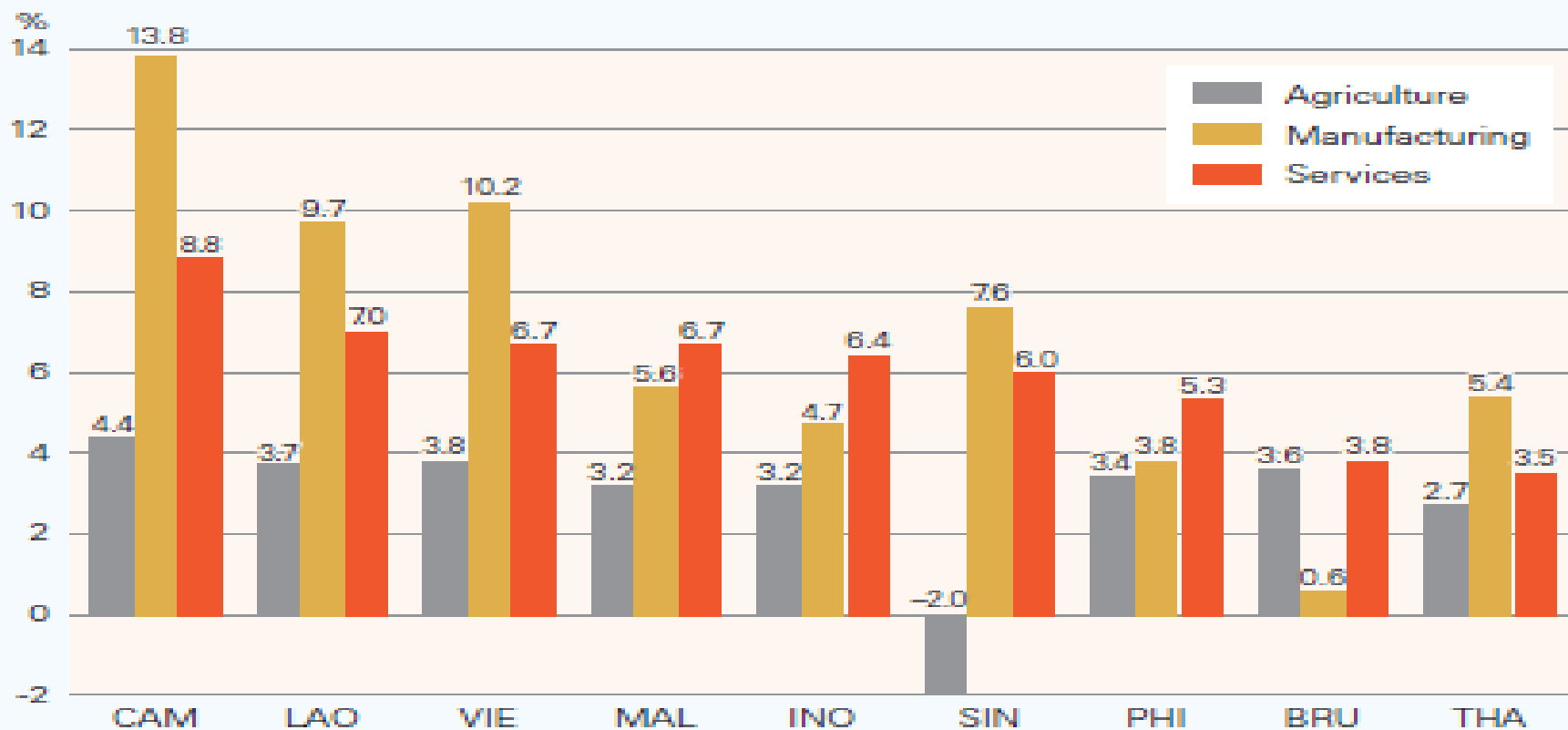


Source : ERIA Policy Brief, No. 2011-01, January 2011. Fragmentation and Changes in the Asian Trade Network

Production Network in ASEAN and China

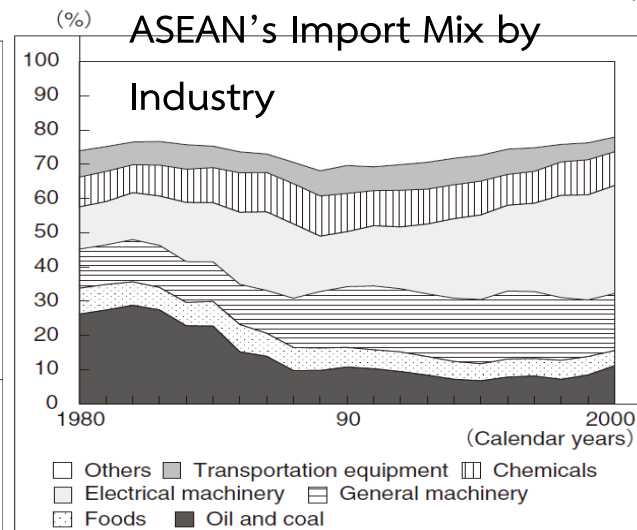
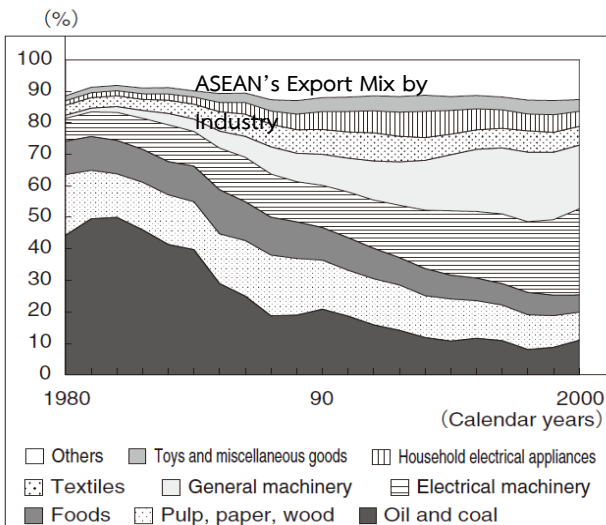
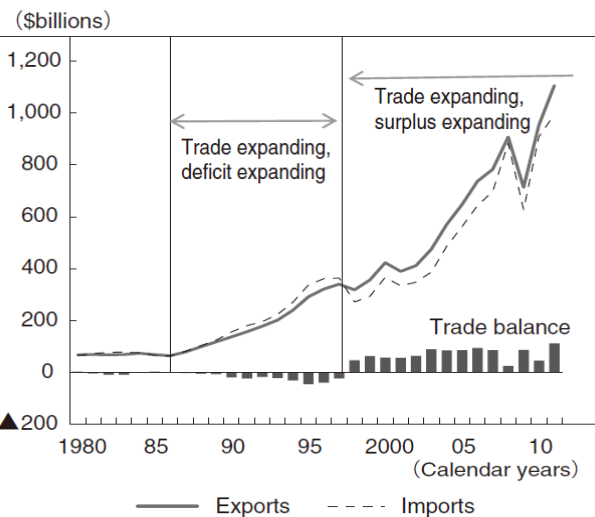
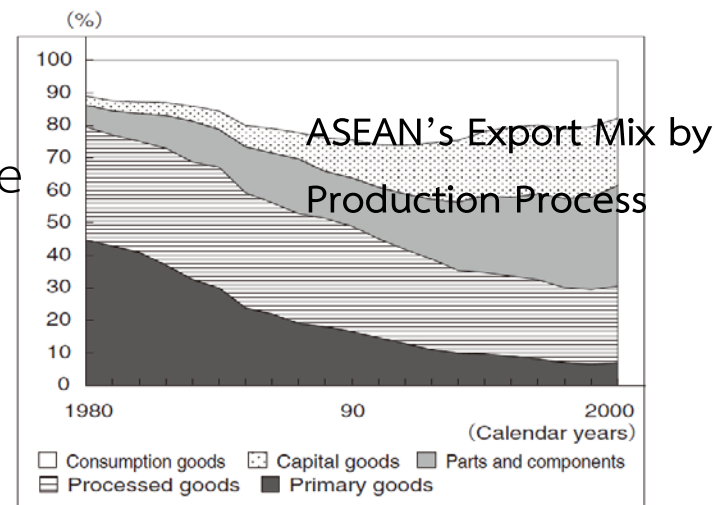


Source: Keiichiro Oizumi (2013)



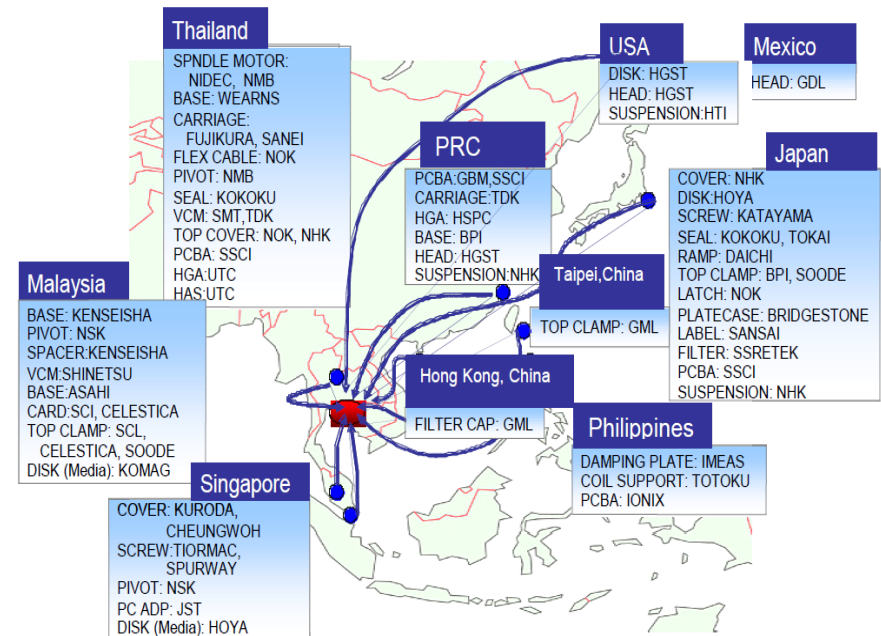
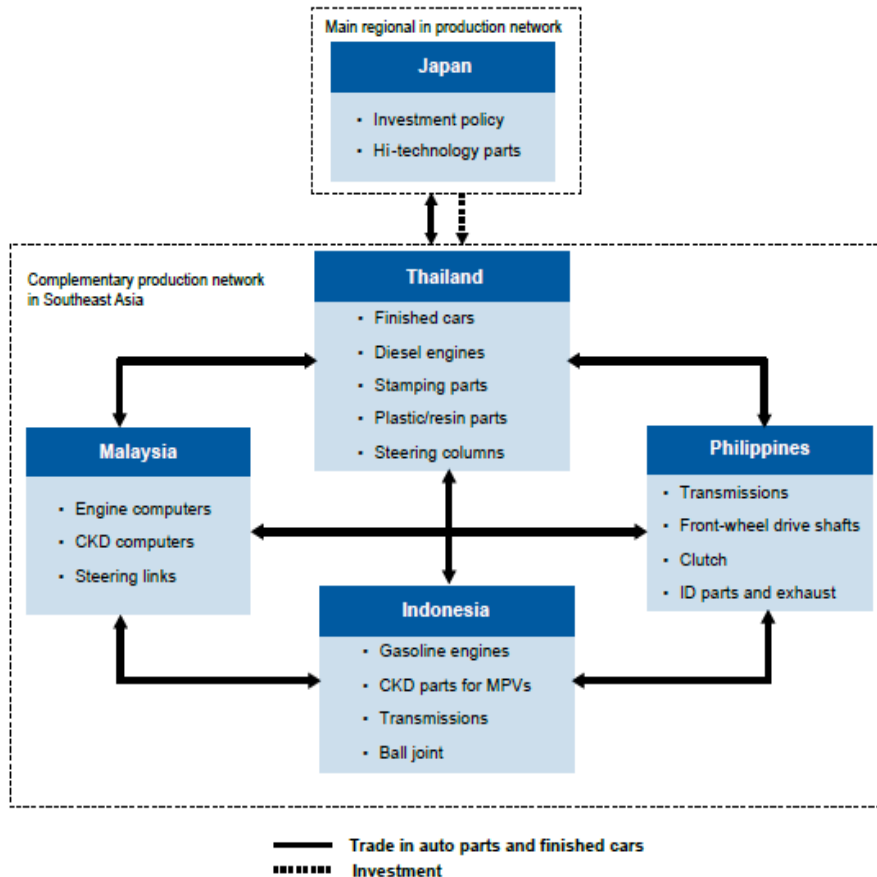
Source: Asian Development Bank Institute (2014) ASEAN 2030: Toward Borderless Economic Community

Japanese FDI to ASEAN now become
Capital goods and Parts and components



Source: Keiichiro Oizumi (2013)

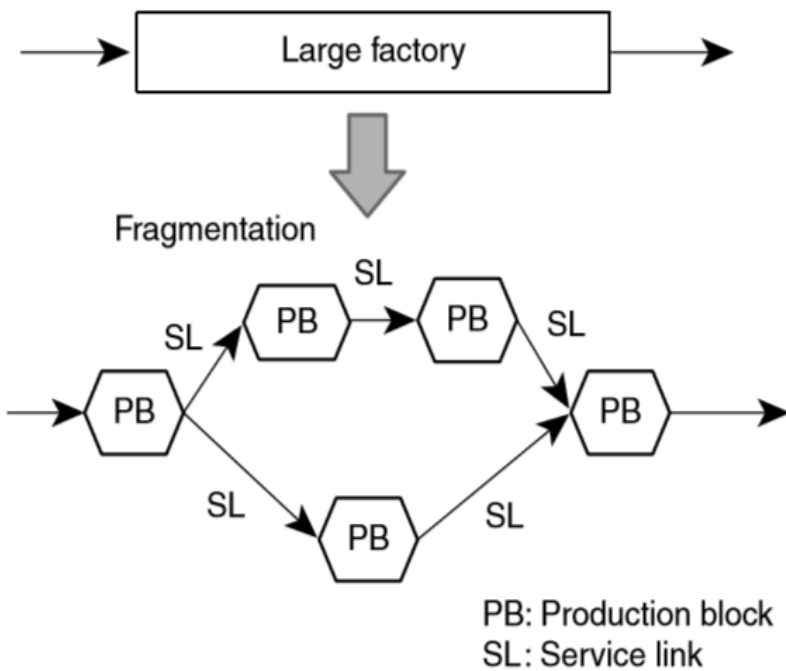
Thailand as a production hub of ASEAN



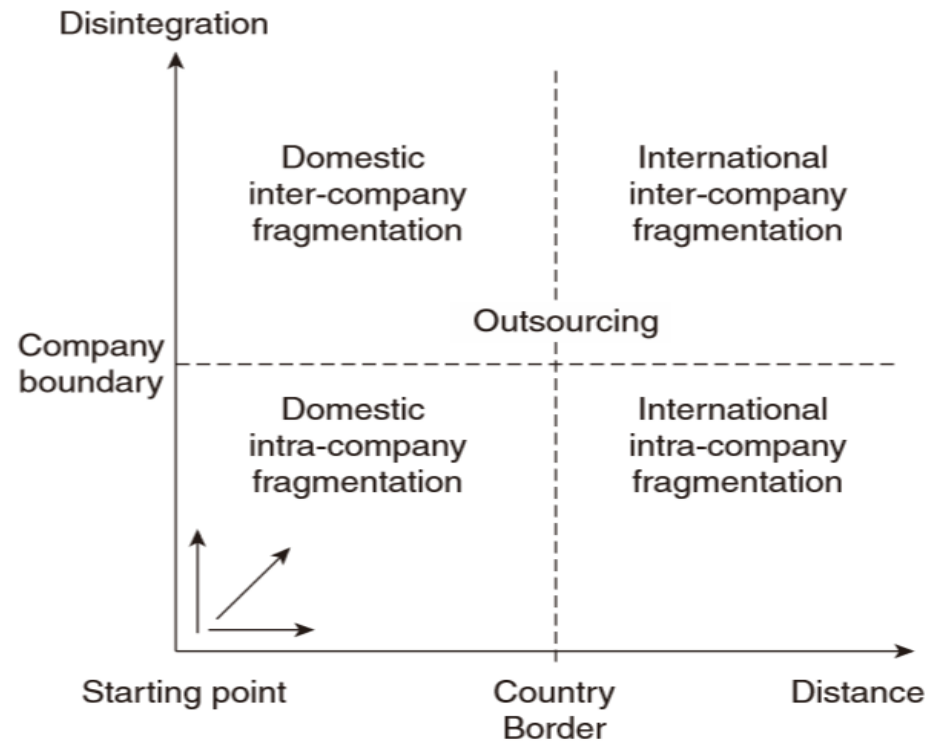
Source: Hiratsuka, Daisuke (2006). Vertical Intra-Regional Production Networks in East Asia: Case of the Hard Disk Drive Industry in East Asia. (Chapter 6.) In East Asia's De Facto Economic Integration, edited by D. Hiratsuka. London: Palgrave Macmillan.

Source: ASEAN Investment Report 2013-2014

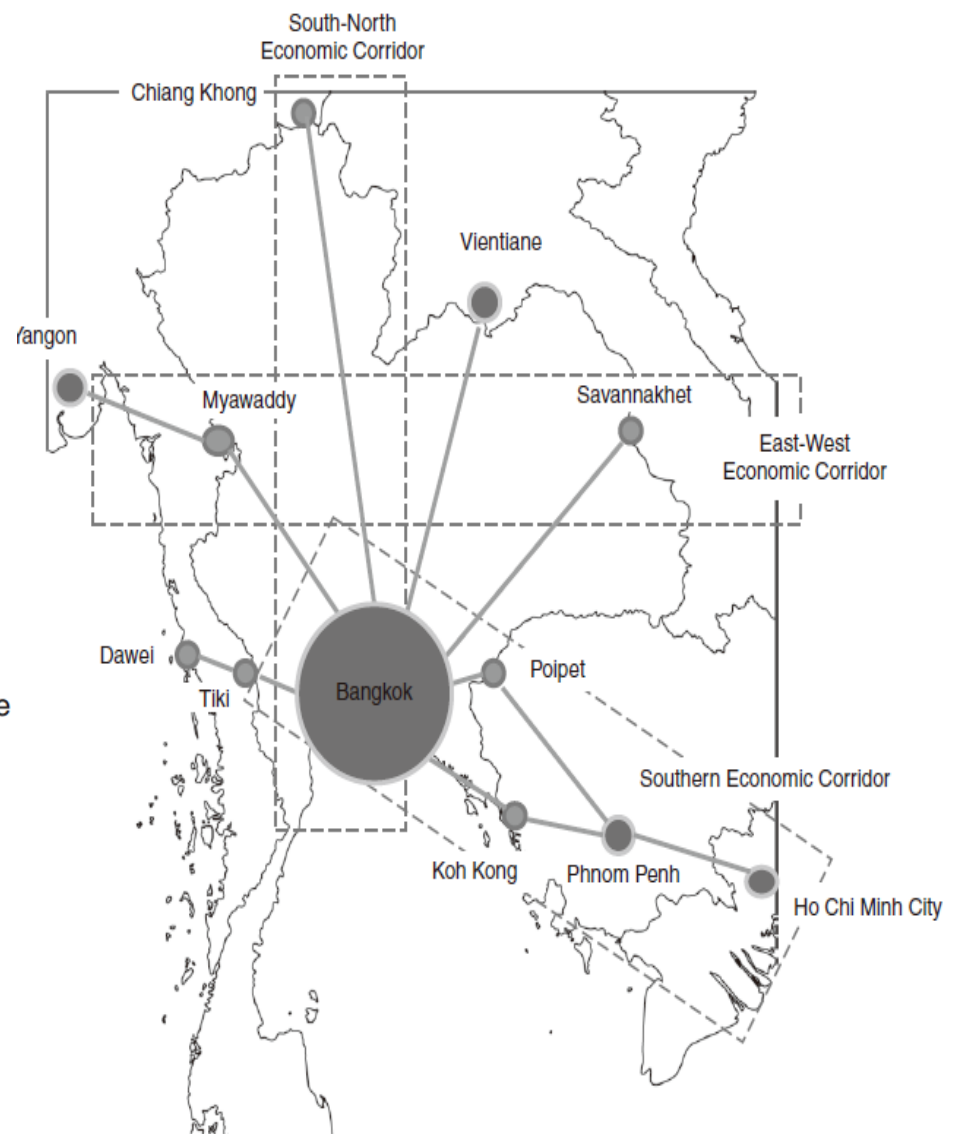
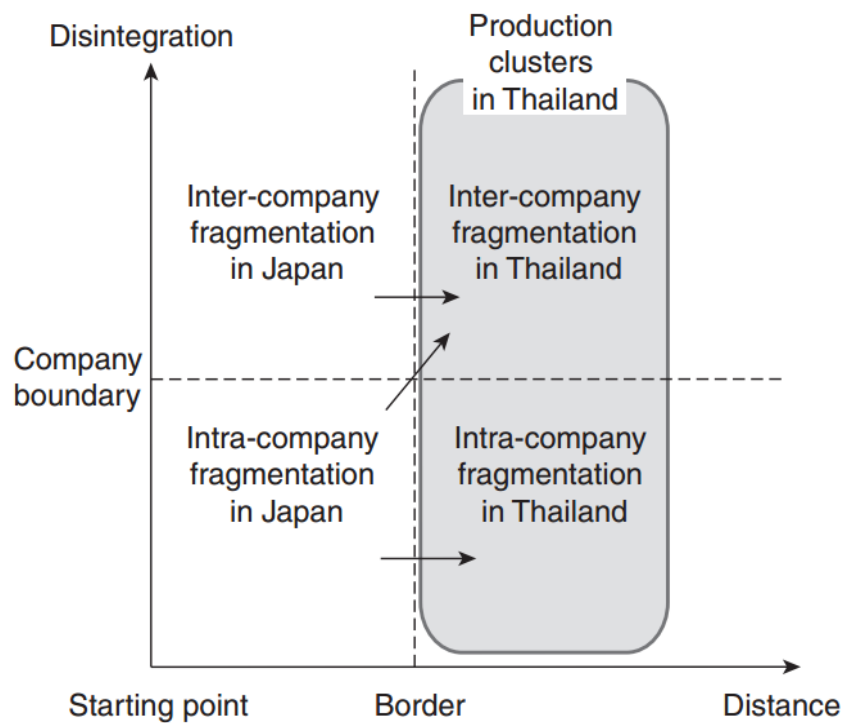
Conventional production processes



Source: Kimura (2006)

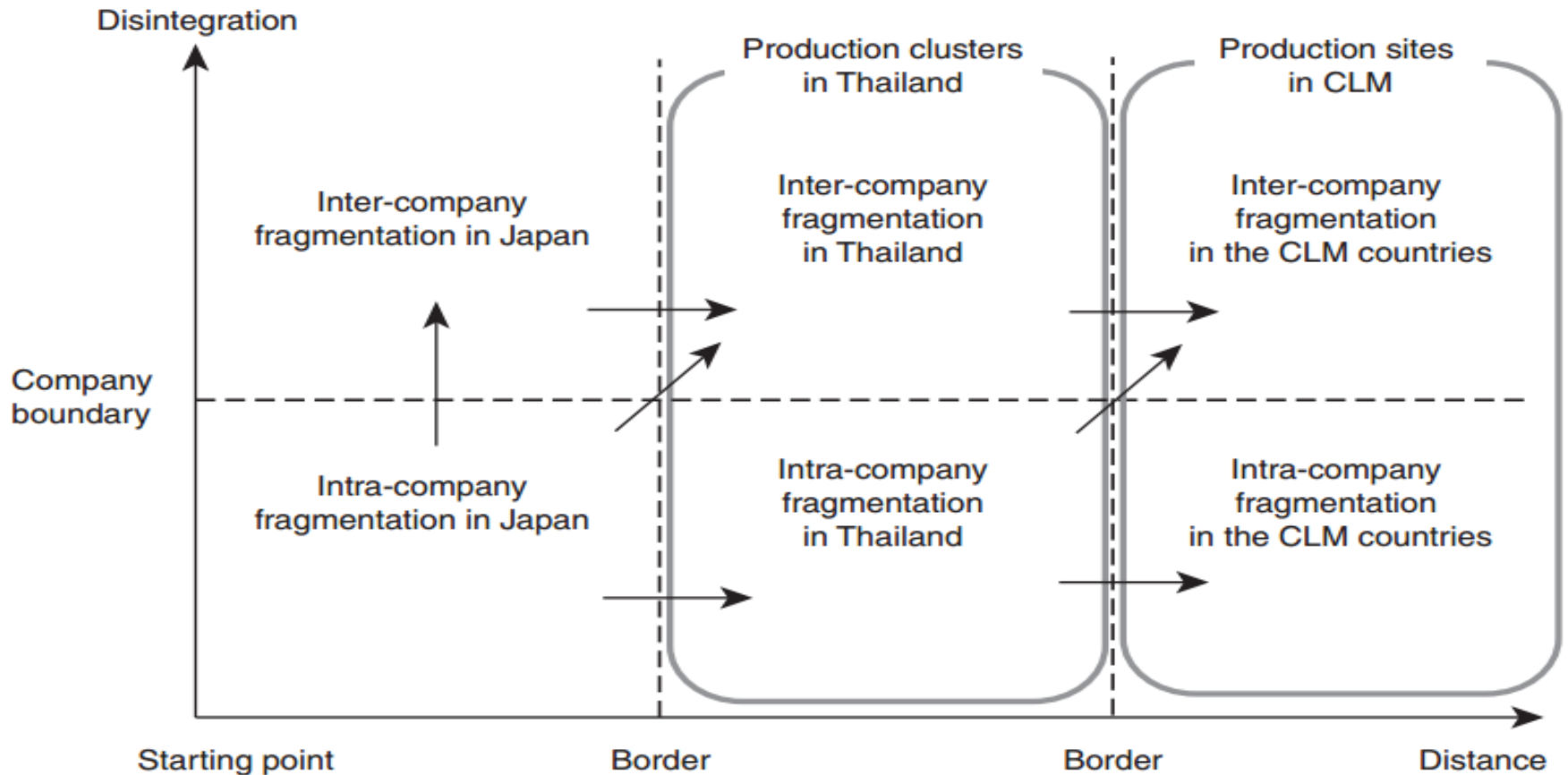


Source: Kimura and Ando [2005]



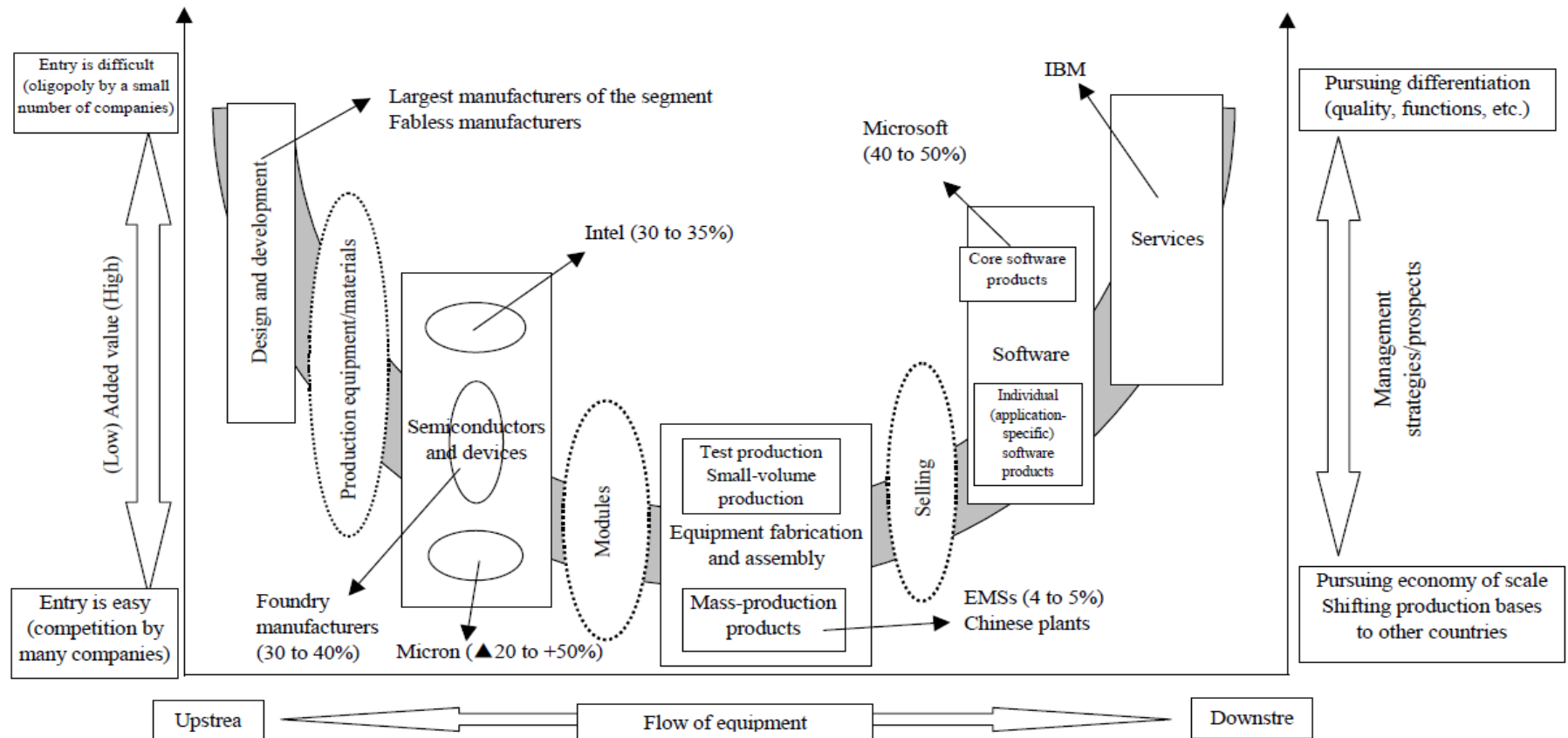
source: Oizumi, Keiichiro (2013).

Thailand plus One



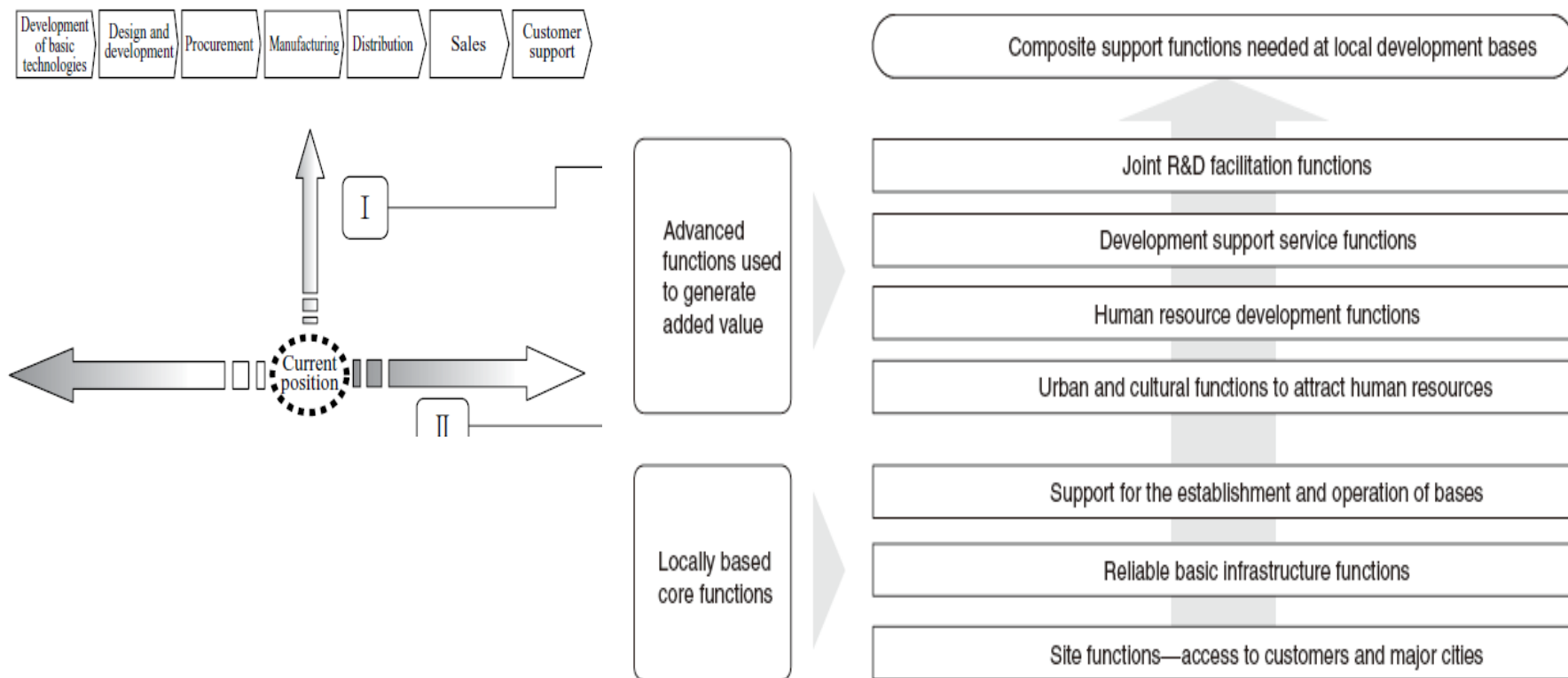
Source: Kimura and Ando (2005)

Modularization and Smiling Curve in Electronics Industries



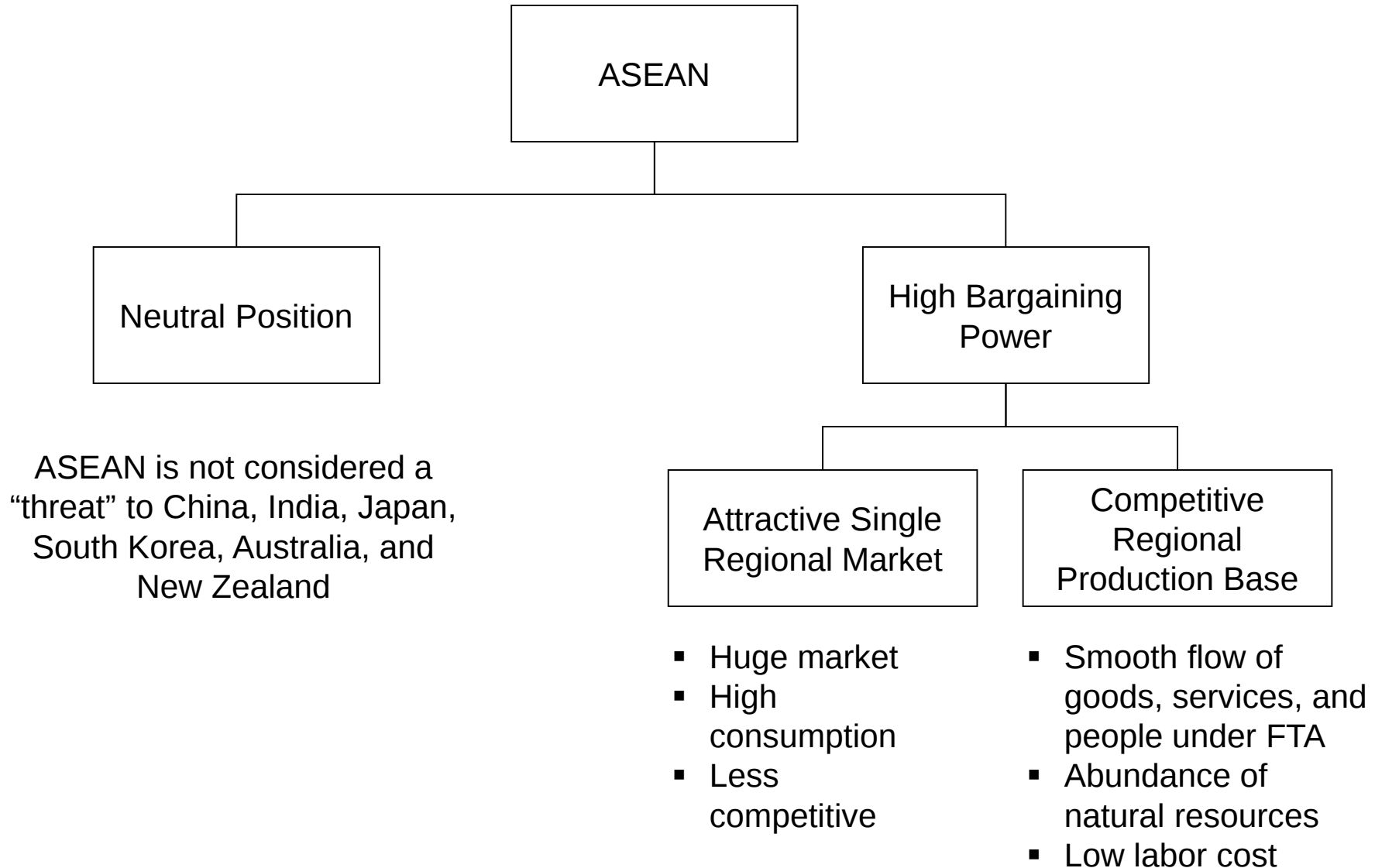
Source: Development Bank of Japan Research Report November (2002).

Thailand move up the value chain or Die

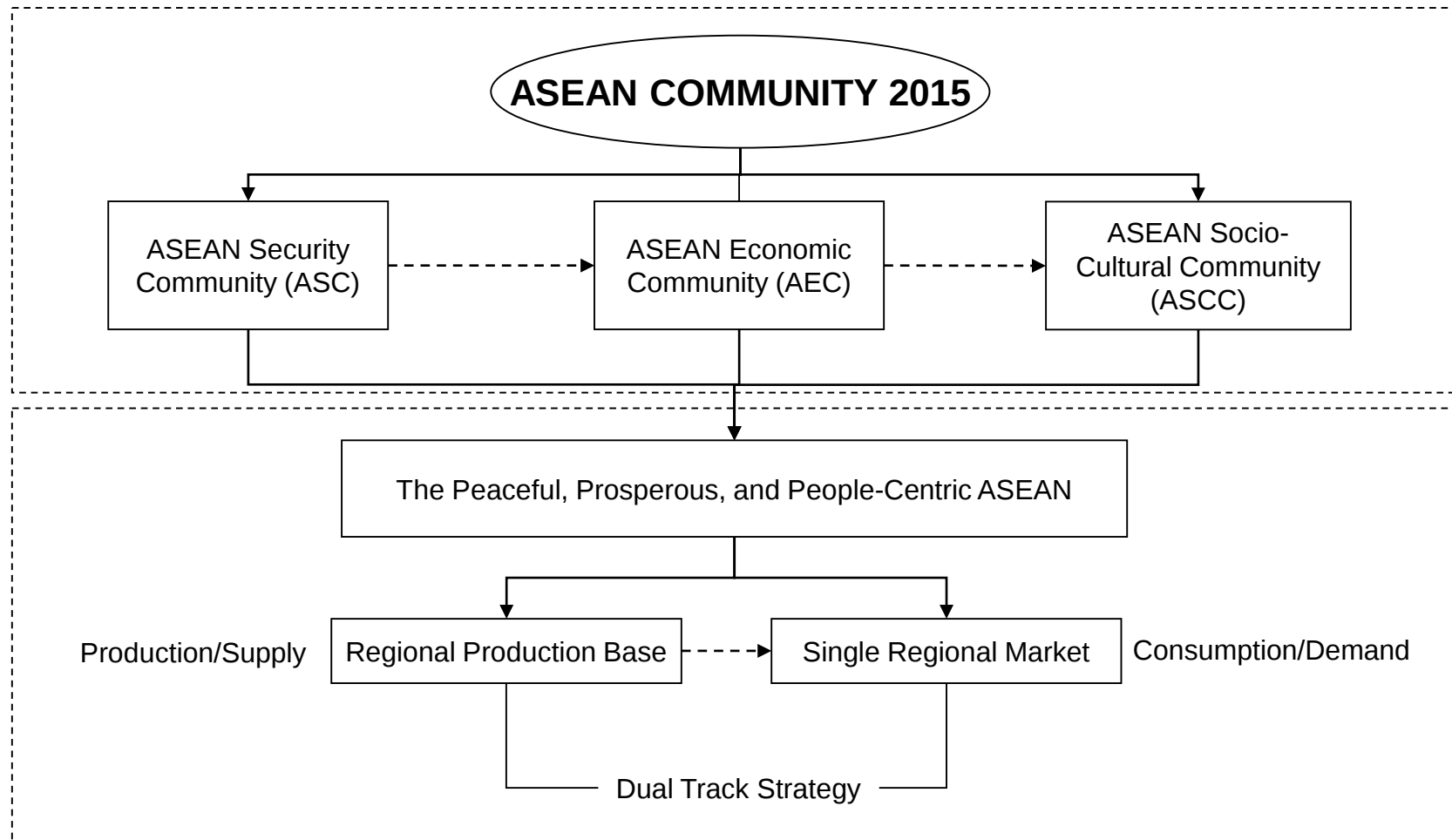


Source: Compiled by JRI

Why is ASEAN in the Driving Seat of the Greater East Asia?



Towards ASEAN Community 2015



ASEAN ECONOMIES

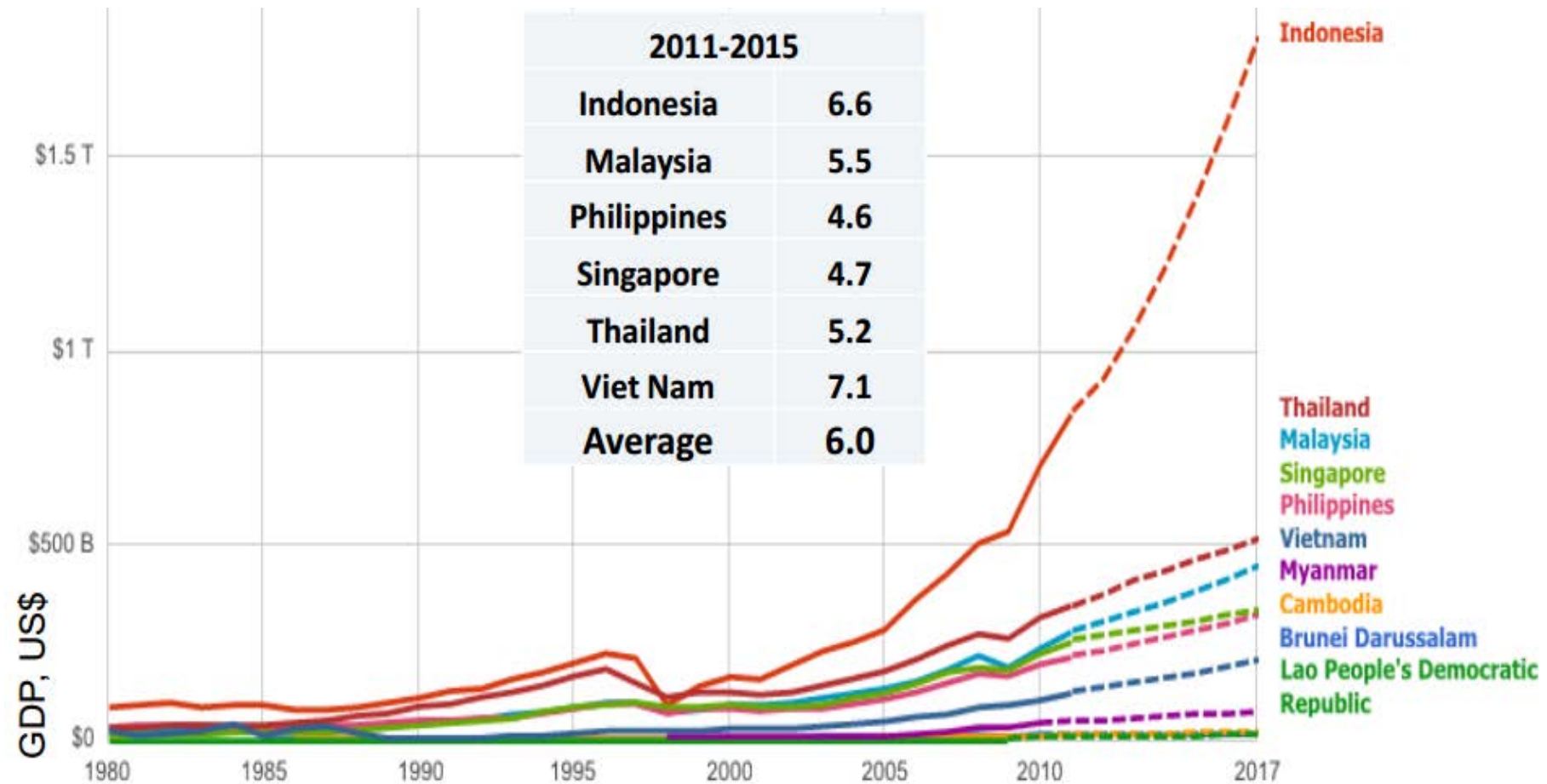
All figures are estimates by the IMF* for 2012

GDP PER CAPITA in \$U.S.

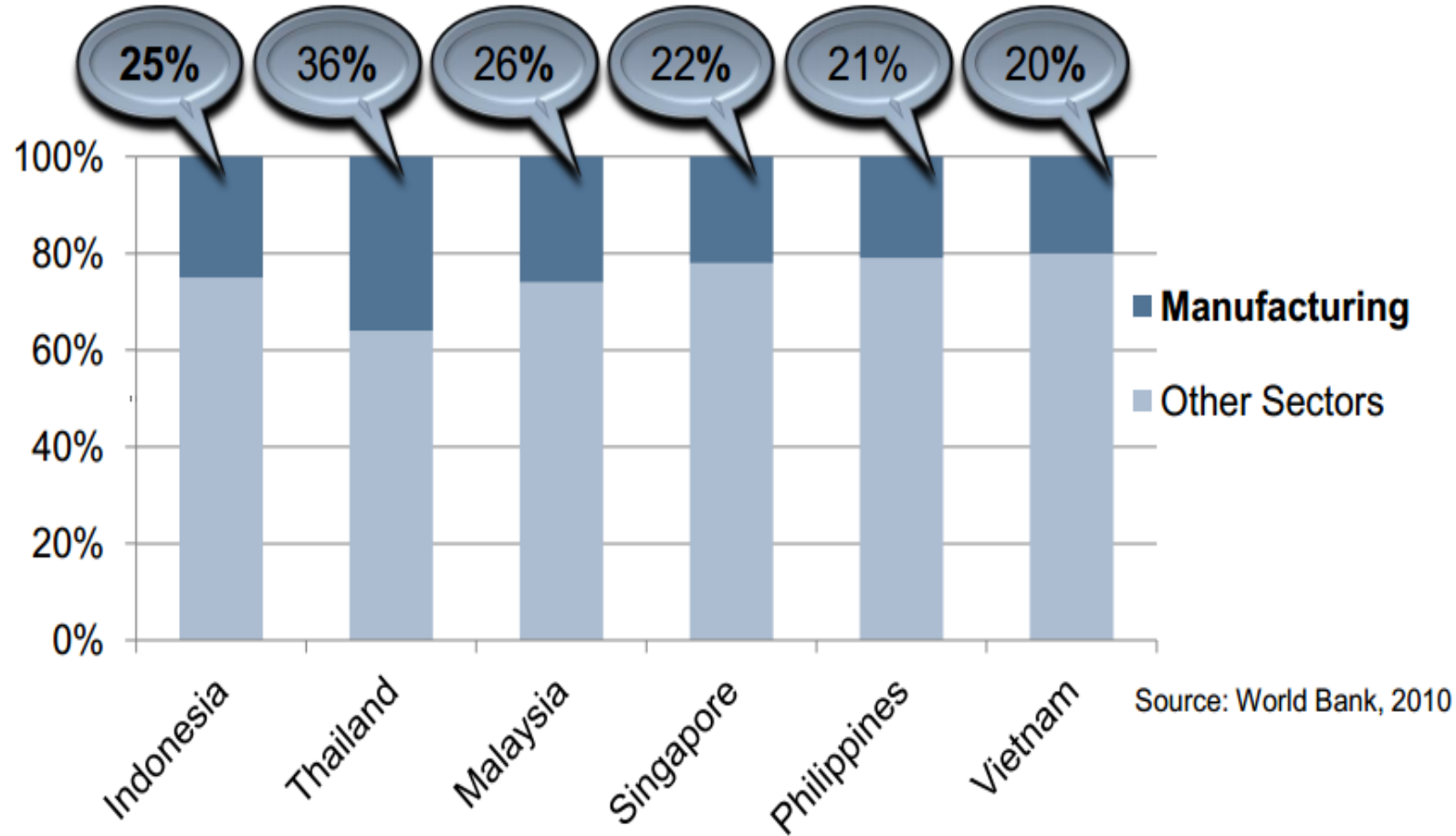


	GDP, current prices, (bln \$U.S.)	GDP, constant prices percent change**	Current account balance as percent of GDP
Indonesia	928.3	6.1	-0.42
Thailand	377.2	5.5	1.02
Malaysia	305.8	4.4	10.82
Singapore	270.0	2.7	21.81
Philippines	227.6	4.2	0.94
Vietnam	135.4	5.6	-1.58
Myanmar	54.4	6.0	-4.27
Brunei	17.1	3.2	52.64
Cambodia	14.2	6.2	-10.58
Laos	8.9	8.4	-19.64

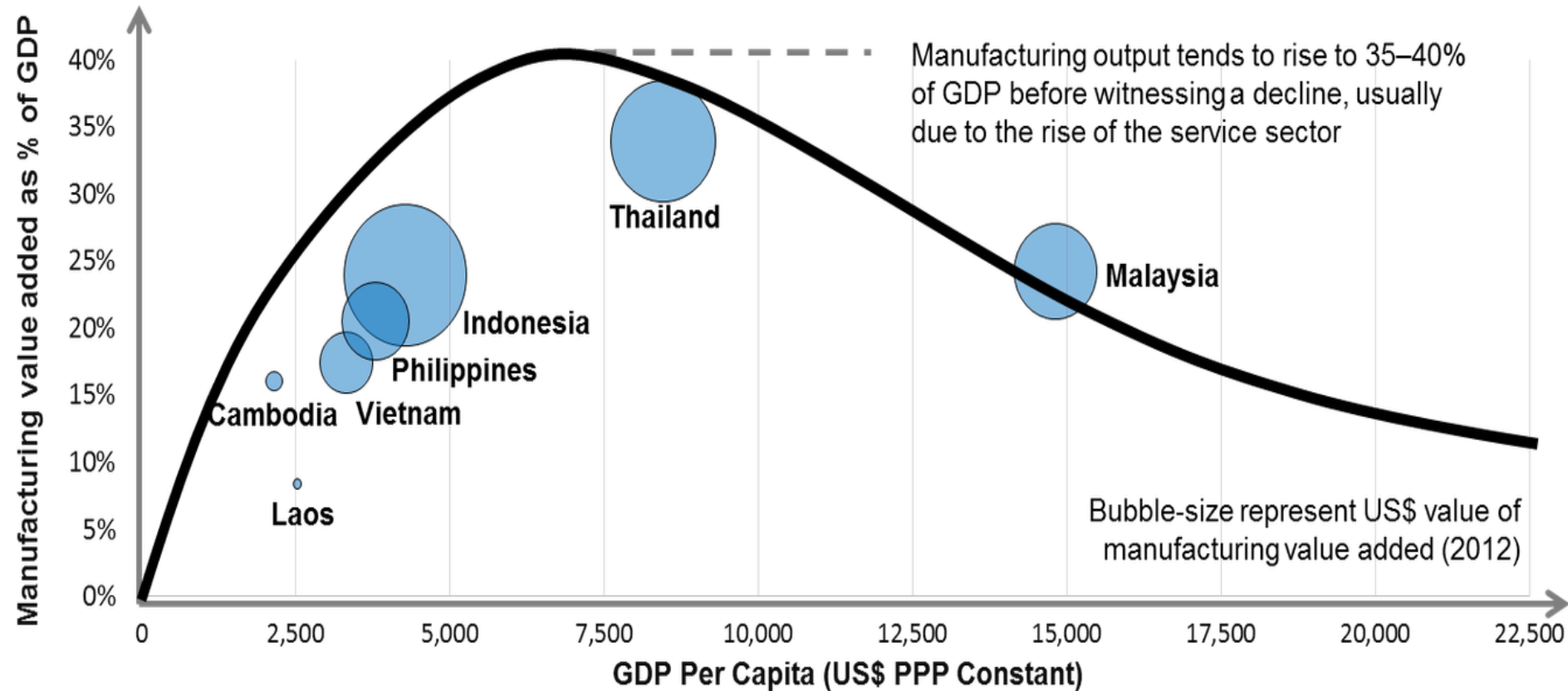
Growth rate of Gross Domestic Product of ASEAN countries, 2011-2015



Proportion of value added of manufacturing sector to GDP (%)



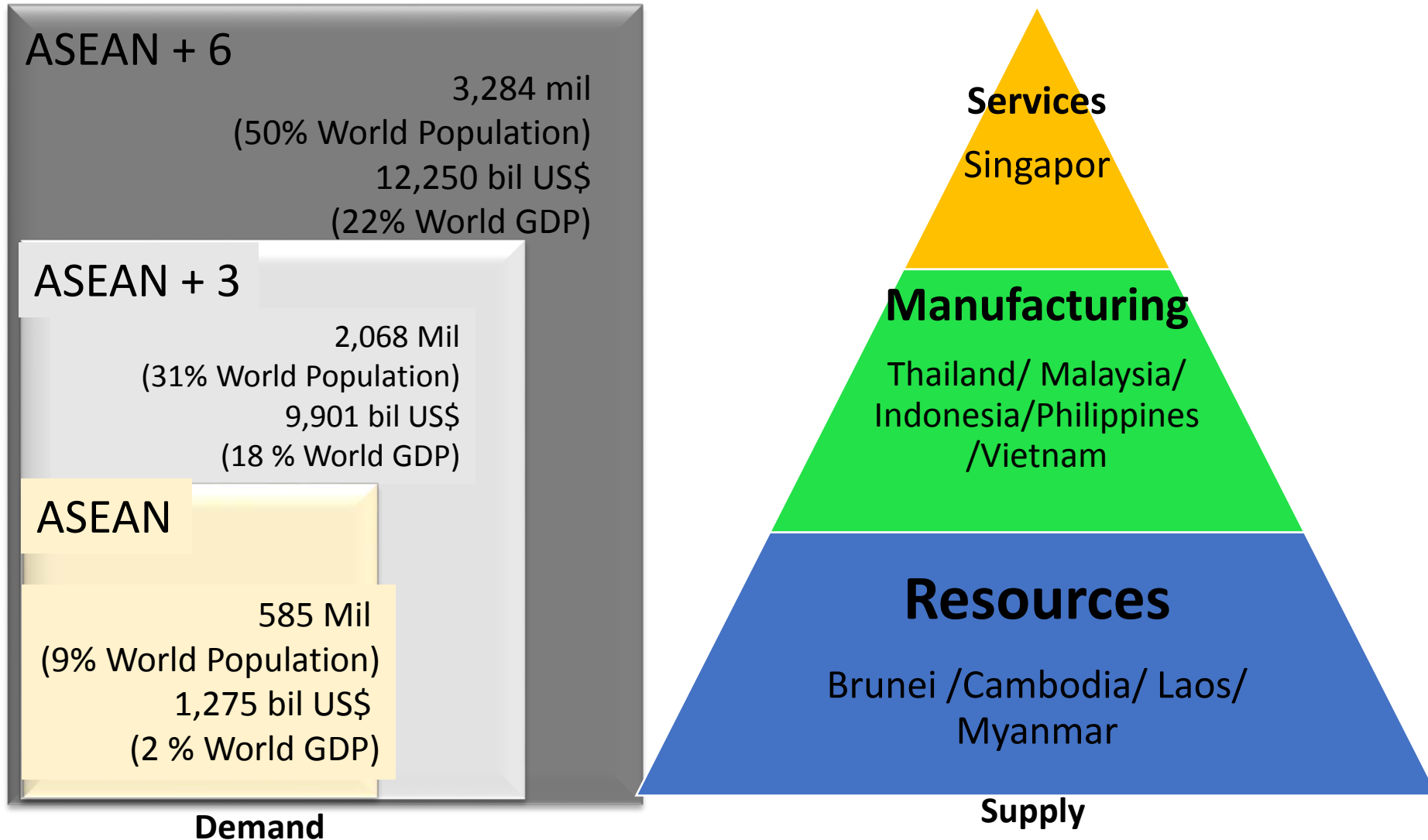
The line showing the evolution of ASEAN countries through the industrial development process



ASEAN Economic Cooperation: AEC

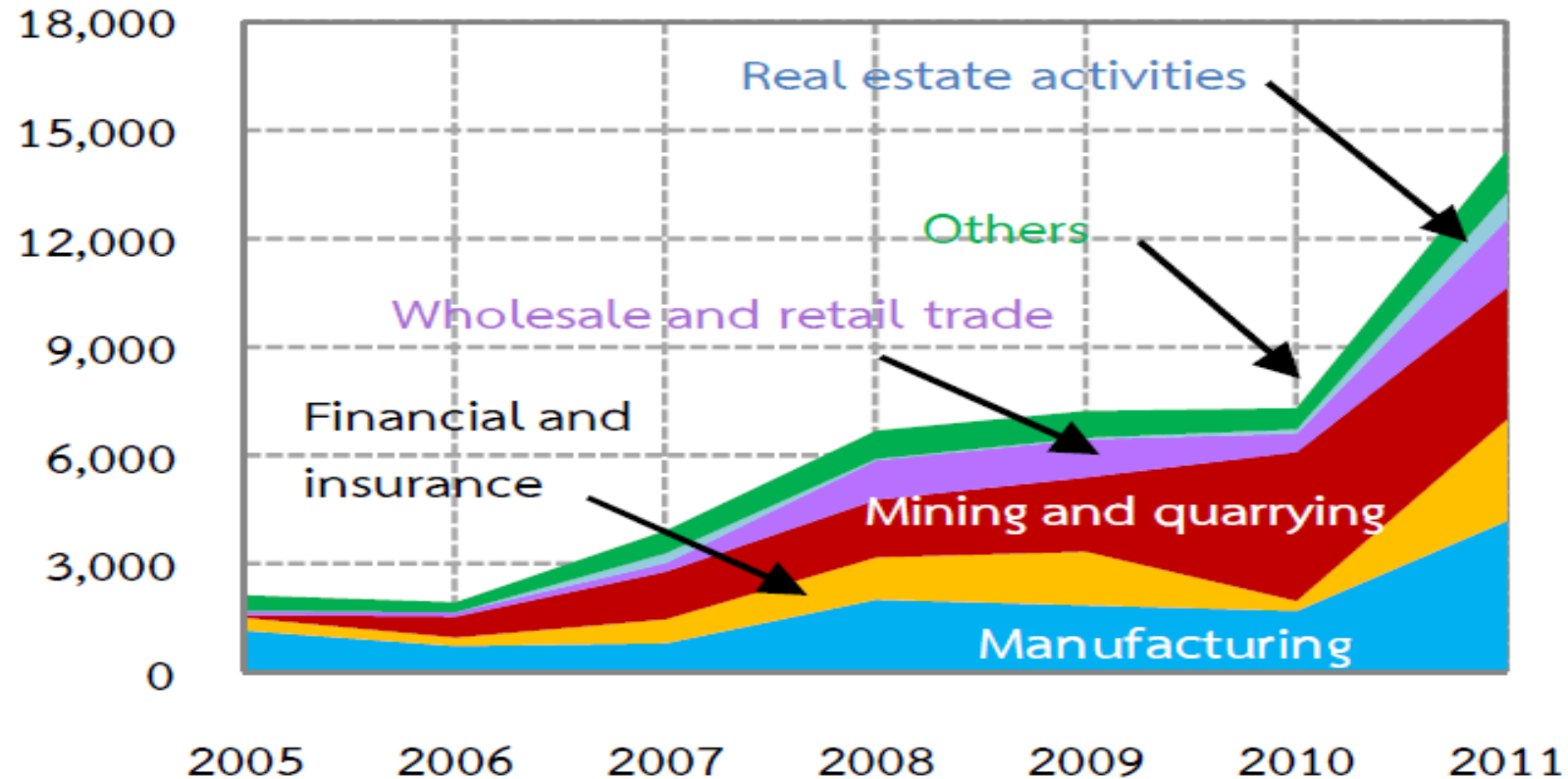
➔ Single Market and Production Base

7



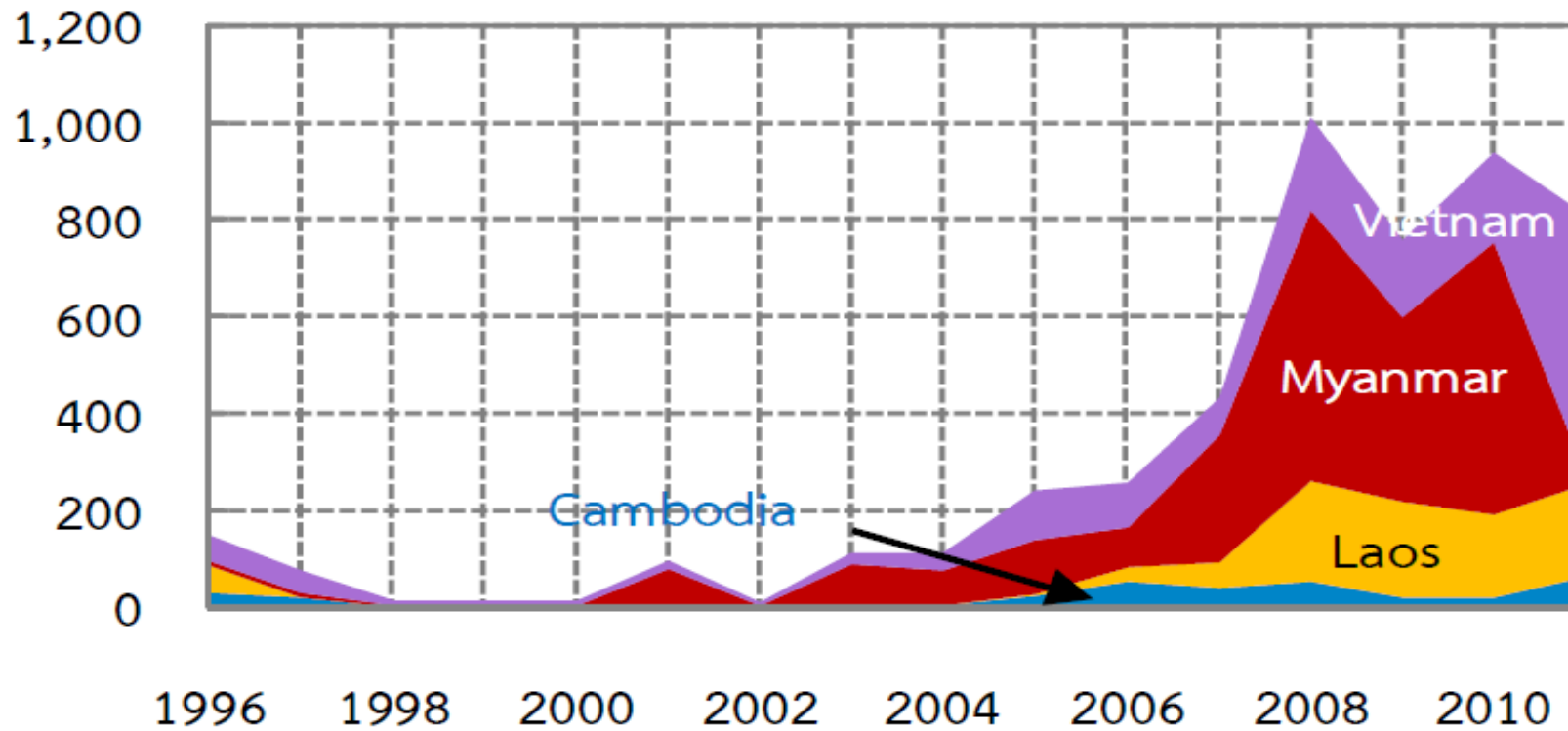
Thai Direct Investment Abroad

Classified by Business (Mils of US Dollars)

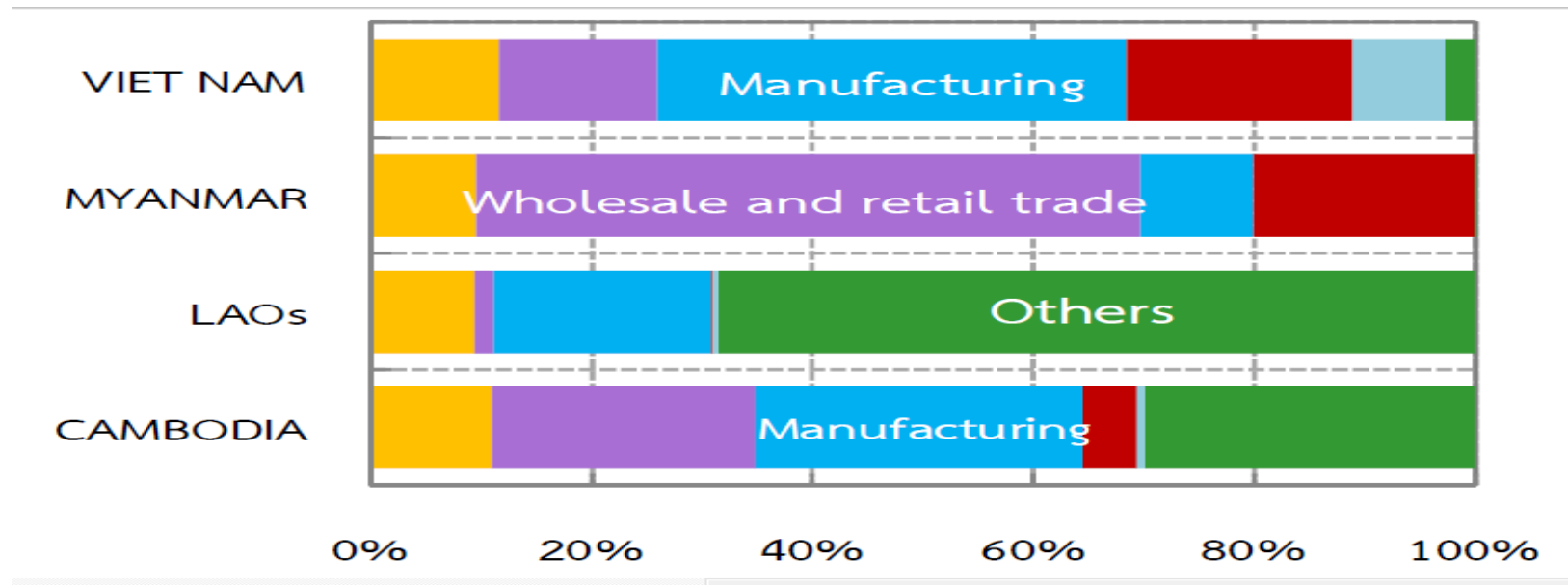


ที่มา: ฝ่ายสถิติและข้อมูลเทศ ฐปท.

Thai Direct Investment in CLMV Countries (Mils of US Dollars)

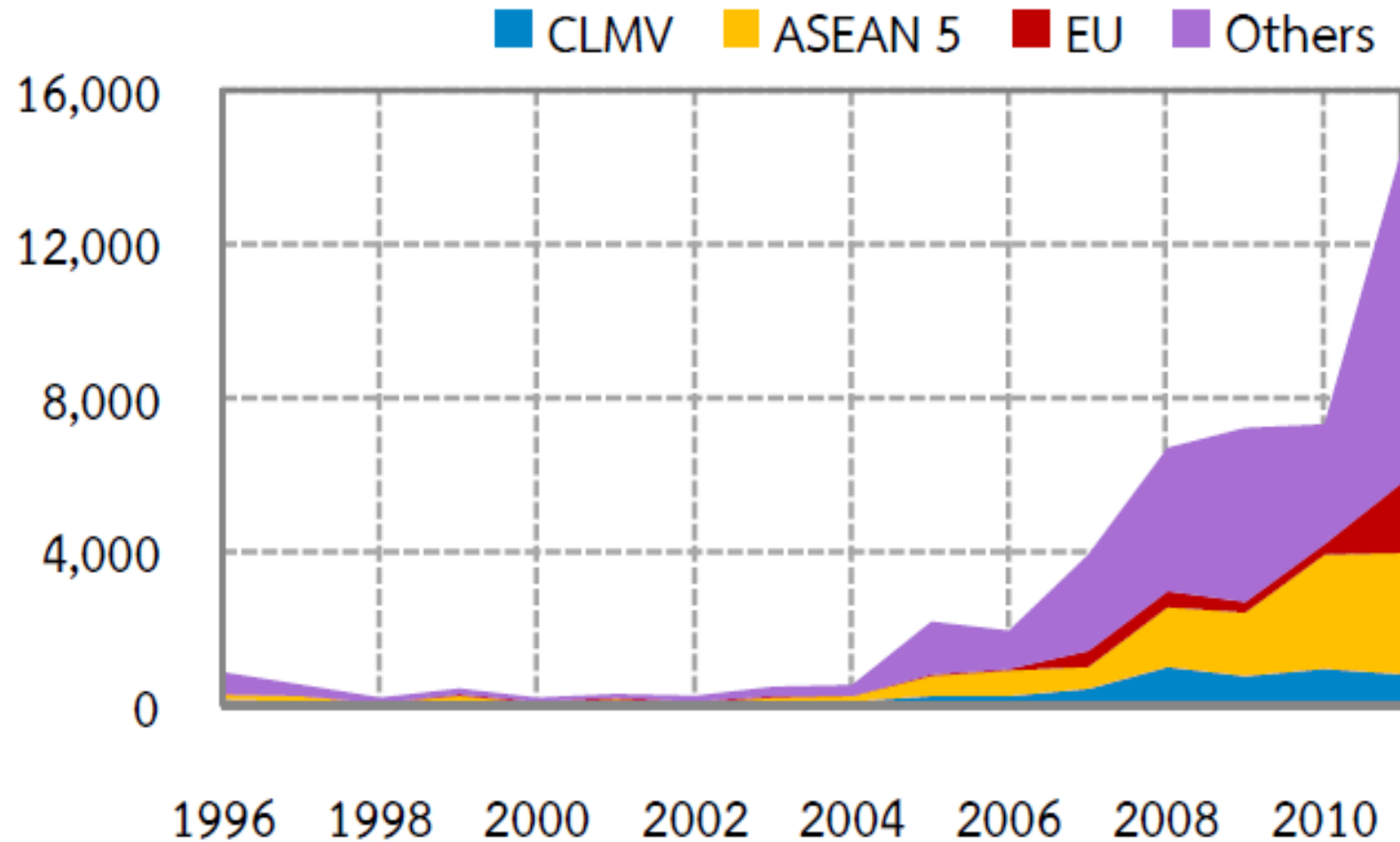


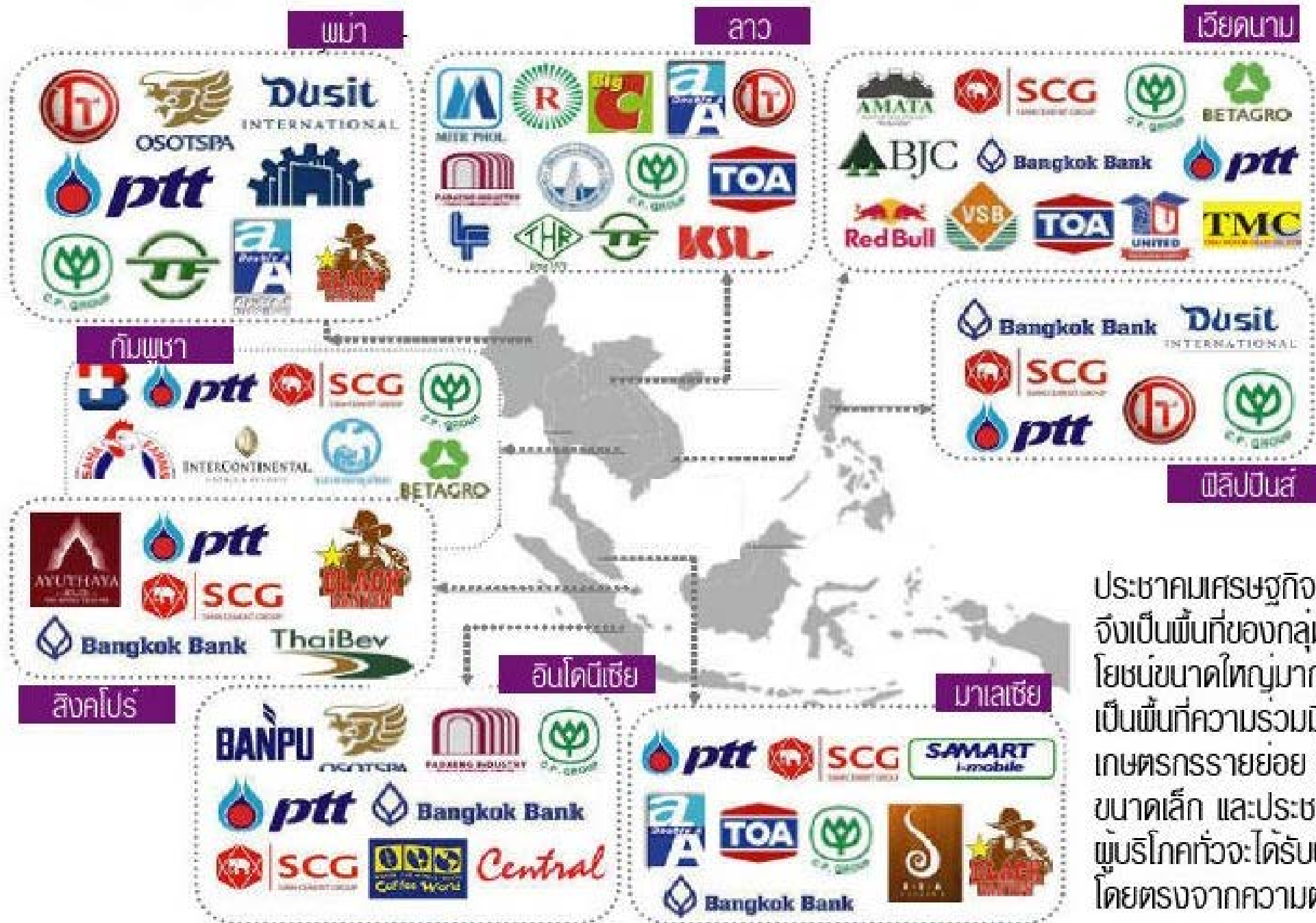
Thai FDI Outflows to CLMV (2005-2011)



- Financial and insurance activities
- Wholesale and retail trade
- Manufacturing
- Mining and quarrying
- Real estate activities
- Others

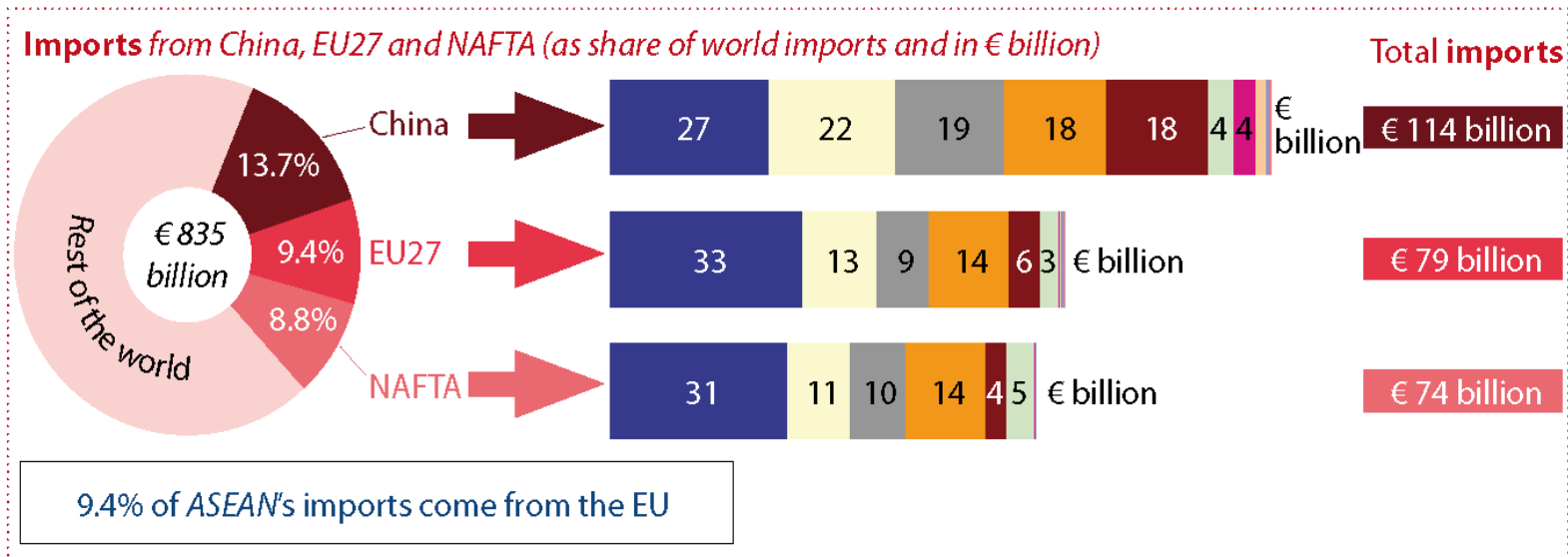
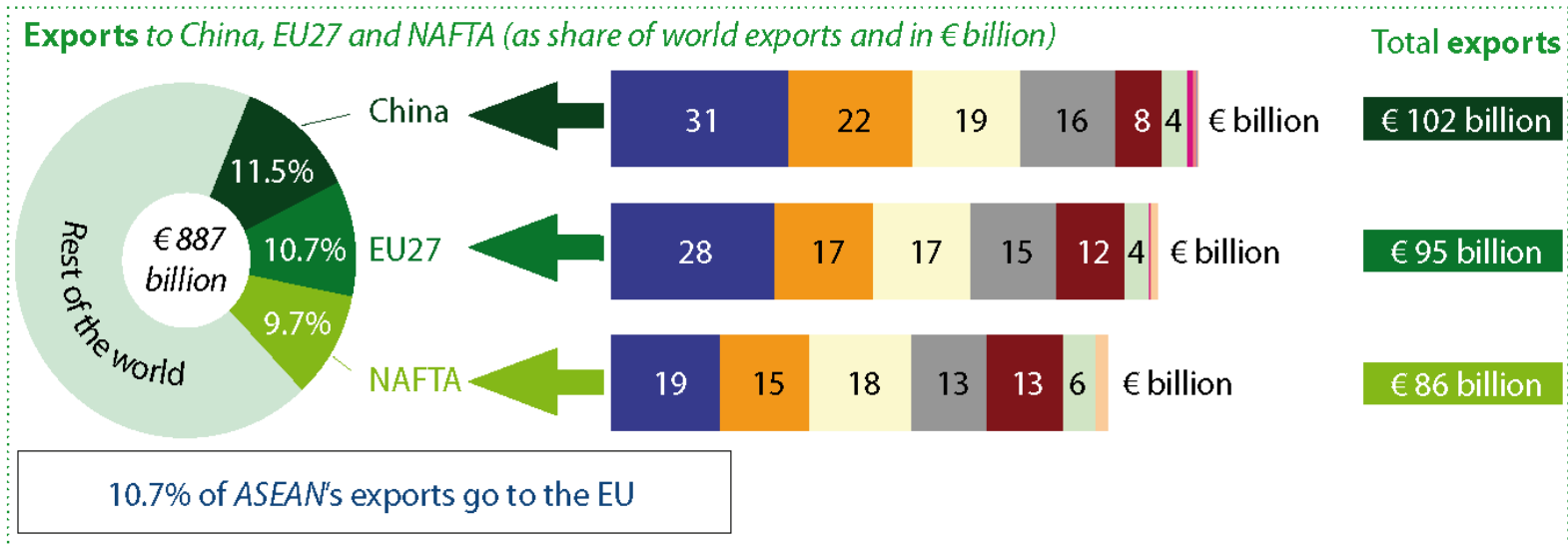
Thai Direct Investment Abroad (Mils of US \$)





ประชาคมเศรษฐกิจอาเซียน
 จึงเป็นพื้นที่ของกลุ่มผลประโยชน์ขนาดใหญ่มากกว่า
 เป็นพื้นที่ความร่วมมือของ
 เกษตรกรรายย่อย วิศวกร
 ขนาดเล็ก และประชาชนที่เป็น
 ผู้บริโภคทั่วๆไปจะได้รับประโยชน์
 โดยตรงจากความตกลงต่างๆ

World trade in goods of the ASEAN countries (2011)





Indonesia

- Transport Equipment & Machinery.
- Petrochemicals.
- Textile & Apparel
- Food



Malaysia

- Electrical & Electronics.
- Petrochemicals.
- Food.
- Basic Metal Products.



Philippines

- Electronics.
- Textile & Apparels.
- Tobacco.
- Food.



Thailand

- Automobile.
- Electronics.
- Petrochemicals.
- Transport Equipment.



Singapore

- Electronics.
- Biomedical.
- Petrochemicals.
- Precision Engineering.



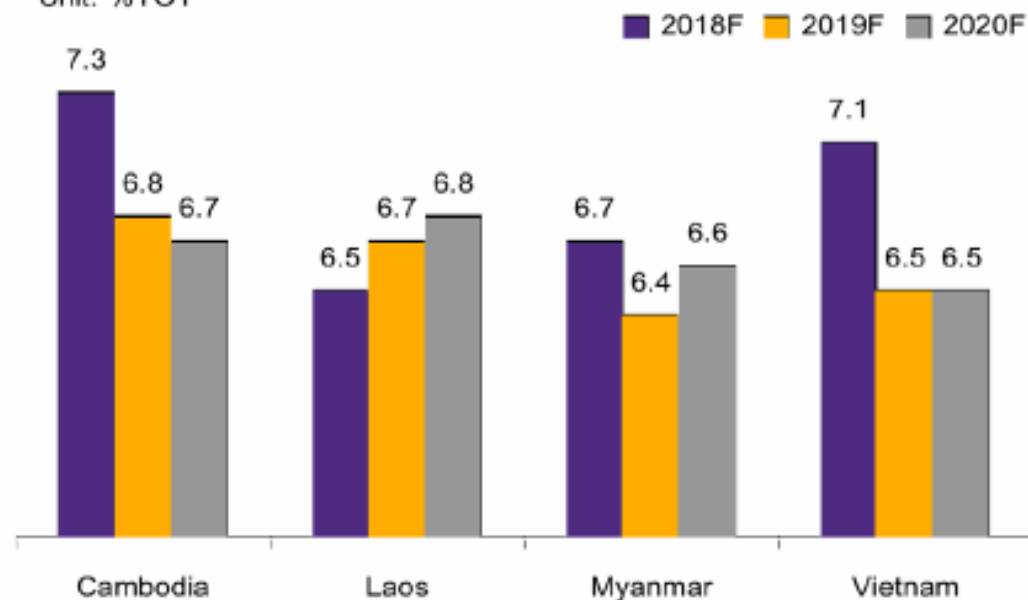
Vietnam

- Textiles & Apparels.
- Food.
- Electrical Products.

CLMV economies will maintain momentum though growth is expected to slightly slow in 2019.

CLMV's economic growth 2018-2020

Unit: %YOY

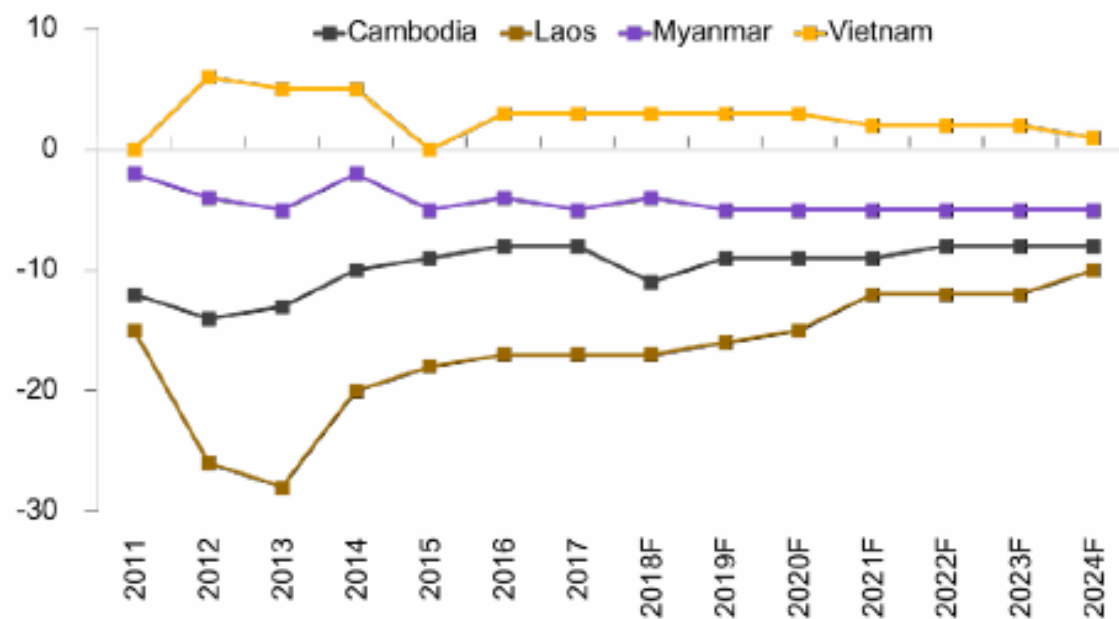


Source: IMF WEO April 2019

IMF expects continued current account deficits in years ahead, except for Vietnam.

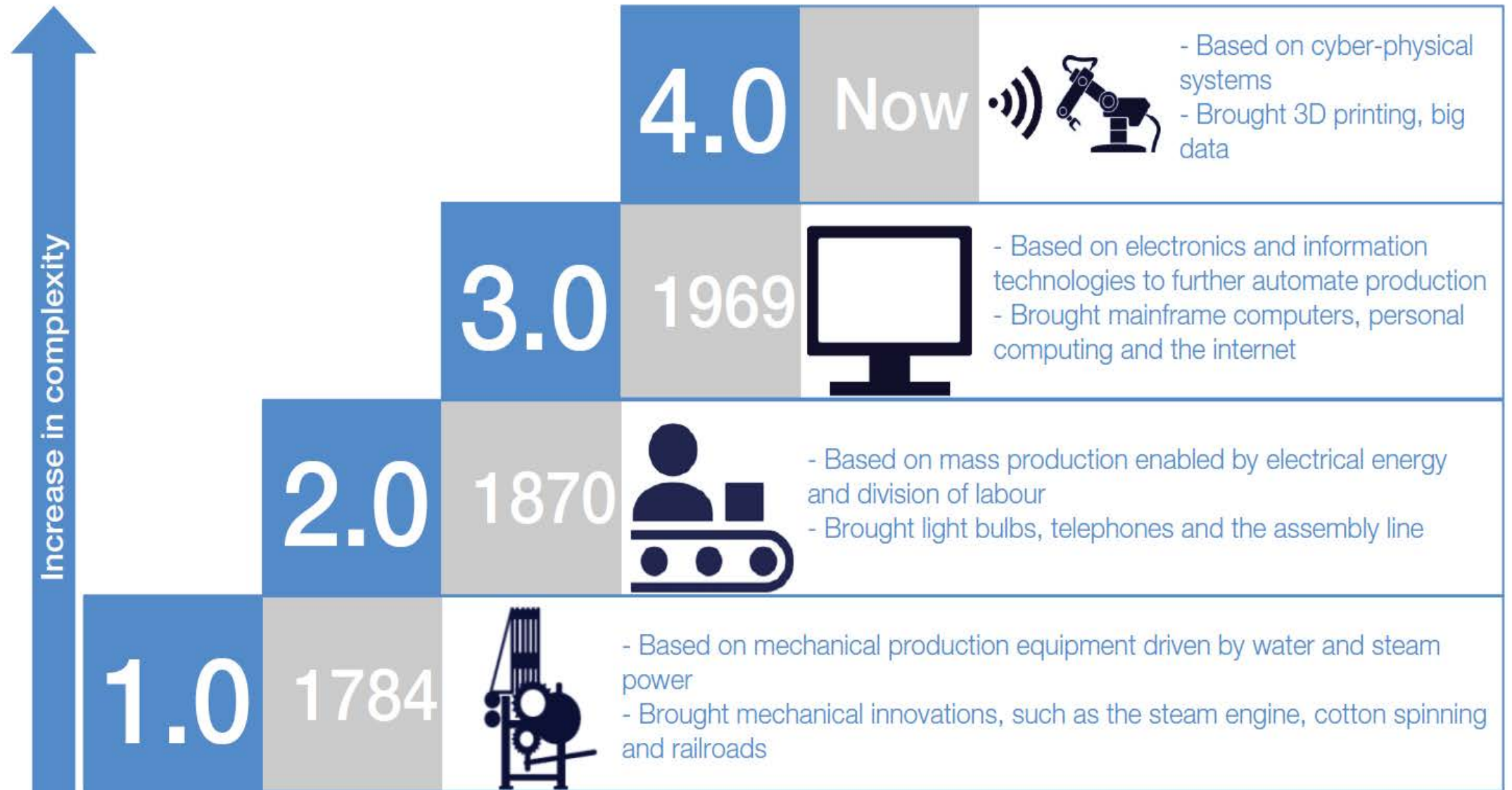
CLMV's current account balance

Unit: % of GDP



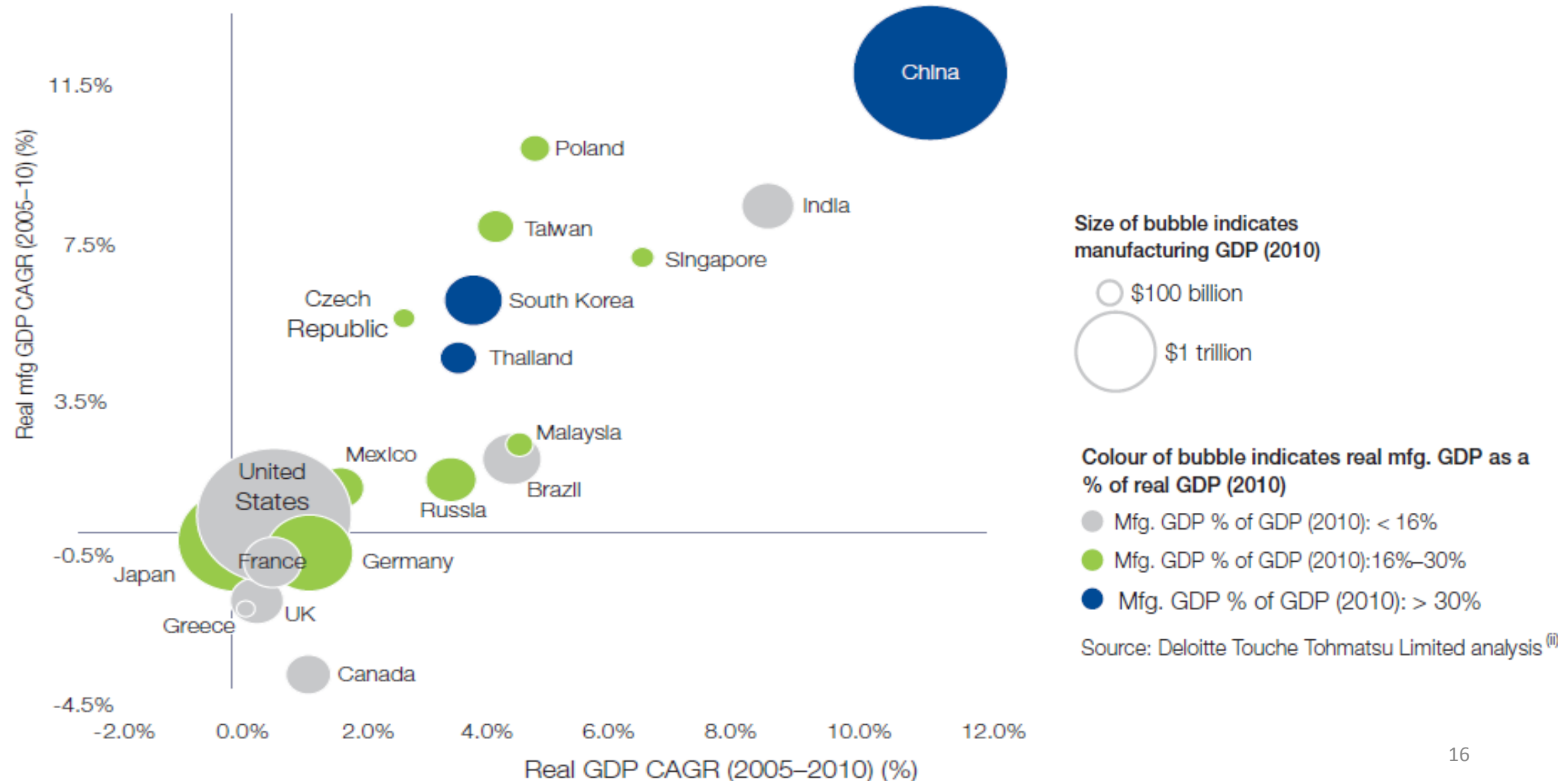
Source: IMF WEO April 2019

The 4th industrial revolution is fast and extensive.



The industrial sector is still an important economic driver of Thailand.

Real GDP versus Manufacturing GDP (CAGR)



5 key technologies that are at the heart of the industry change

What technology do CLMV have?

Five technologies in particular are core to this change

They are in varying stages of technical readiness and come with uncertainty about future direction.



**The Internet
of Things**



**Artificial
intelligence**



**Advanced
robotics**



**Enterprise
wearables**



3D printing

Collectively, these technologies unlock significant value across many dimensions

Factory

↓ 30%

cost reduction across
all operations

Firm

↑ 25%

increase in revenues
from smart, connected,
customized products

Industry

\$370

billion in net industry
value through data-driven
processes and streamlined
value chains

Society

26.3

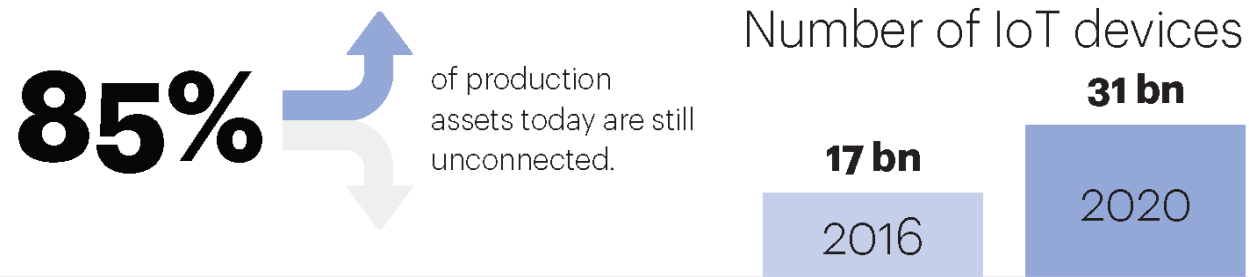
billion metric tons
of CO₂ avoided

Individual



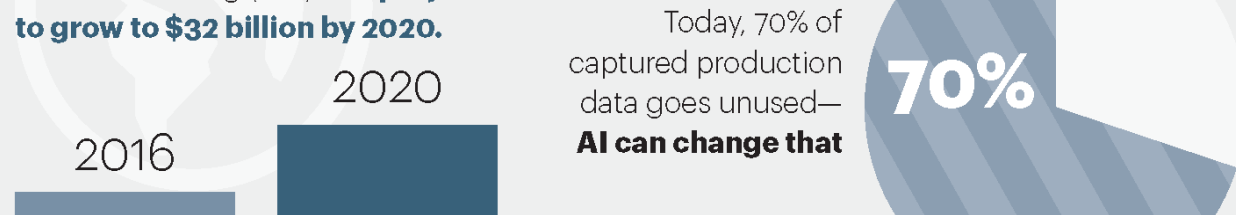
New skills and
relationships with
machines

The Internet of Things: Connecting the unconnected



Artificial Intelligence: AI coming of age

\$8 billion global market, but is nascent in manufacturing (12%) and **projected to grow to \$32 billion by 2020.**



Upgrading these technological changes is not an option, but it is something that needs to be done because every country (competitors and partners) is in the same market.

These technological changes have already reached CLMV.

But .. still have little

Advanced Robotics: Emerging from the cage

10% Handles 10% of production tasks today

Rising to as much as 45% by 2030

\$38 billion market

with **250,000 units sold in 2015**—projected to grow to **400,000 units by 2020**

Enterprise Wearables: Digitizing the workforce

\$700 million market projected to grow

\$5 billion by 2020

Most industries are in early adoption stage

Wearables improve operator productivity by **25 percent**

3D Printing: Shaping the future one layer at a time

\$5 billion market projected to grow to

\$16 billion by 2020

Recent surge in metal capabilities

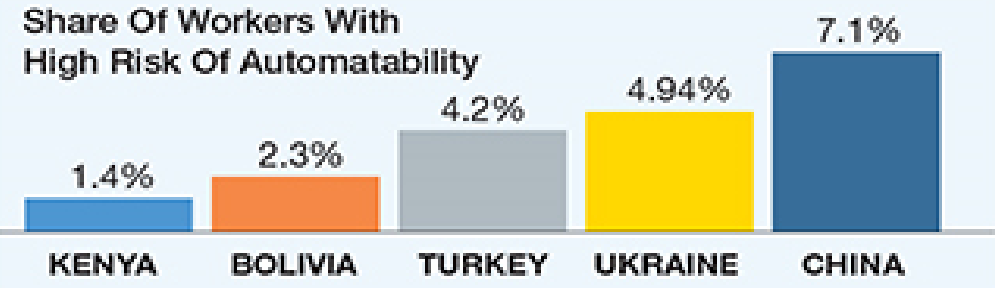
Technology and globalization have changed the effect of industrial development on employment.

1. Low investment, focusing on qualitative changes 2. Create less employment, focusing on skilled workers 3. Create inequality

THE FUTURE OF MANUFACTURING-LED DEVELOPMENT

How can developing countries continue to advance and reduce poverty when technology and globalization are changing the landscape of manufacturing?

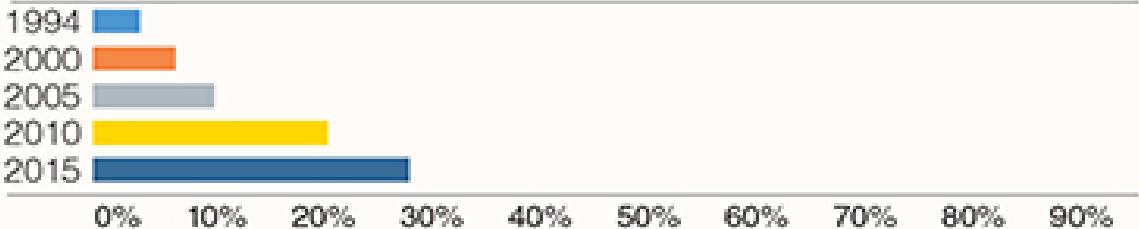
► In most developing countries, automation threatens between 2% and 8% of today's jobs.



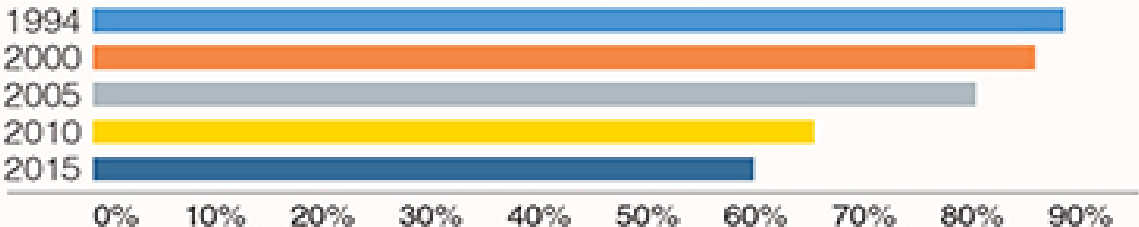
► The bigger risk is the jobs that may never come.

Share Of Global Manufacturing In Value Added

CHINA



TODAY'S HIGH-INCOME COUNTRIES



Manufacturing Has Historically Been Critical For Development

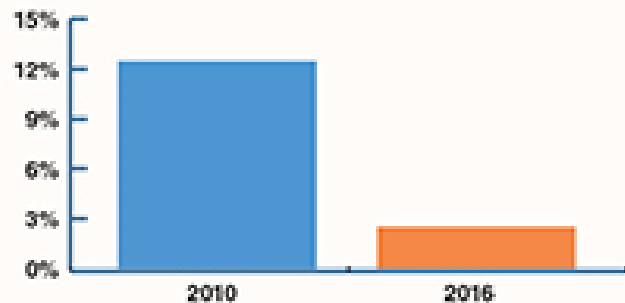
- 1 But today, high-income countries produce 60% of the world's goods and China produces 25%.
- 2 In the past, manufacturing has driven productivity and jobs for unskilled workers in developing countries.
- 3 In the future, manufacturing's ability to employ these workers may decrease.

ค่าแรงมีความสำคัญน้อยลงต่อภาคอุตสาหกรรม ประเทศไทยจะแข่งขันอย่างไร?
Wage is less important to industrial sector. How will CLMVT compete?

HOW MANUFACTURING IS CHANGING

Trade Is Slowing

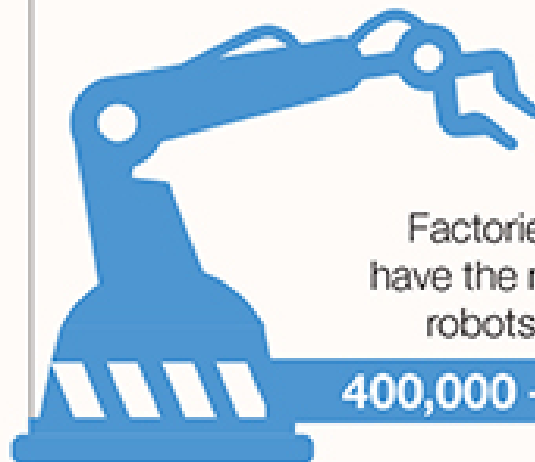
Global trade growth decreased from
12.5% in 2010 to 2.5% in 2016



Technology Is Advancing

Jobs are being automated

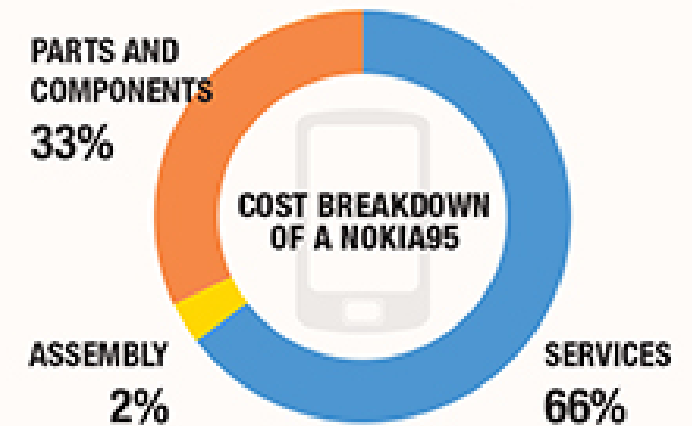
Developed countries use robotics, 3D printing, smart factories and industrial automation to re-shore jobs



Factories in China will have the most industrial robots in the world –

400,000 – by 2018

Links to Services Are Expanding



Manufacturing is more than production. It embodies services such as design, marketing – and increasingly, aftercare services in the Internet of things

For the world as a whole, more than 33% of the value of manufactured exports comes from embodied services.

Technology increases inequality. How can we benefit from this change?

<8%

of the technologies are adopted
in Latin America and Africa combined

~50%

of production tasks can
be automated through
IoT, AI, robotics, and 3D printing

1.5x

Production and consumption represent
1.5 times the planet's natural capacity.

These opportunities can only be reached when five tipping points occur

**Technical
readiness**

Technologies reach
high maturity
levels

Affordability

Unit selling prices
drop to a third
of current cost

Connectivity

40% of production
assets become
connected

Customization

1/4 of products
require customization

Services

replacing products
1/4 of capex replaced
with services

Businesses and governments can unlock this value by:

investing in R&D for technical readiness; creating pathways to production careers, including education and skills;
improving governance and standards; addressing cybersecurity and interoperability; and enhancing underlying infrastructure.”

Factors driving the future of the industry are both internal and external.

