An Approaching Middle Income Trap How Vietnam Can Escape It





Kenichi Ohno (GRIPS) February 2024

The Middle Income Trap

What Is a Middle Income Trap?

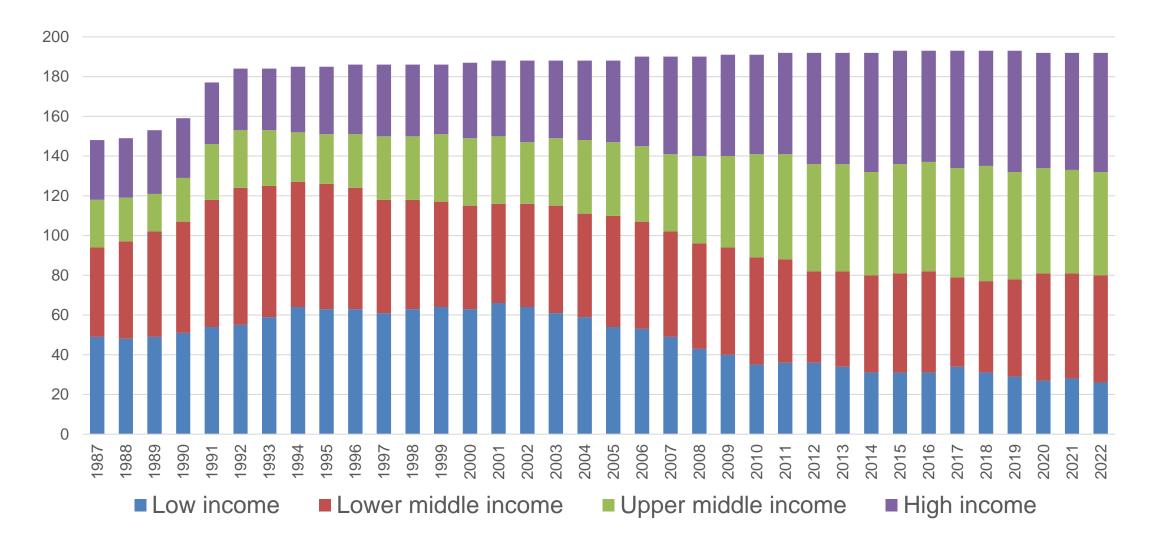
- A country that cannot rise from middle income to high income for a long time.
- World Bank income classification (2023/2024, GNI per capita)

Low income	- \$1,135
Lower-middle income	\$1,135 - \$4,465
Upper-middle income	\$4,466 - \$13,845
High income	\$14,846 -

Vietnam's GNI per capita (WB2022): \$4,010

Lower-middle income but higher-middle income in a few years

Number of Countries Classified by WB Income Criteria



Source: World Bank income classification data.

Statistical Definition of MIT

- Data analysis for 124 countries during 1950-2010 suggests that a country staying in lower-middle income for 28 years or more, or a country staying in upper-middle income for 14 years or more, is in a trap (Felipe, Abdon & Kumar 2012).
- But we need a definition which is more analytical and useful for discussing causes and remedies.

More Analytical Discussions

- "A middle income trap is a situation where industrialization driven by low-cost advantages (cheap labor & capital) has come to an end. Wage that rises faster than productivity and declining investment efficiency lead to such a deadlock" (Akira Suehiro 2014).
- "After reaching middle income, a country may stagnate for a long time because it is unable to adopt a new development strategy and new growth pattern, and thus cannot find a new source of growth" (C.H. Kwan 2013).
- "Middle income countries in Asia are facing two difficult problems simultaneously: how to raise productivity in key industries and avoiding income inequality." (Yonosuke Hara 2014)

The Phase Shift Problem

From Labor-intensive Manufacturing to High-tech Industries

Light manufacturing

- In the early stage, labor-intensive low-technology sectors such as garment, footwear, food processing, electronic assembly (PCs, phones) dominate.
- Domestic value creation is low. A large amount of unskilled (female) labor is needed. Few engineers and technicians are required.

Liberalization, privatization and integration are generally sufficient

Japan made this transition around the 1920s, and Korea and Taiwan in the 1970s. However, many developing countries are unable to cross this line.

Technology-based industries

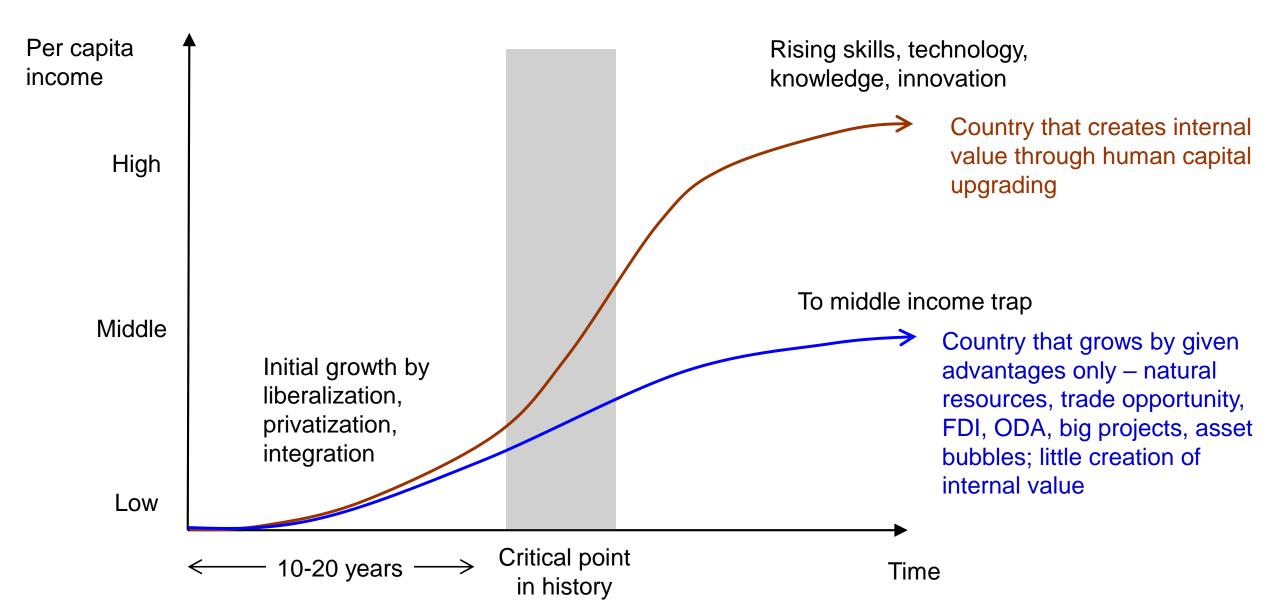
- Establishment of high-tech, value-creating sectors such as metal, machinery, chemicals, ICT and high-tech services requires technology learning and the education and retention of highly skilled engineers.
- Policy must assist technology, investment, finance, global positioning, etc.

Effective policy intervention to upgrade private capacity is essential

The Middle Income Trap (my definition)

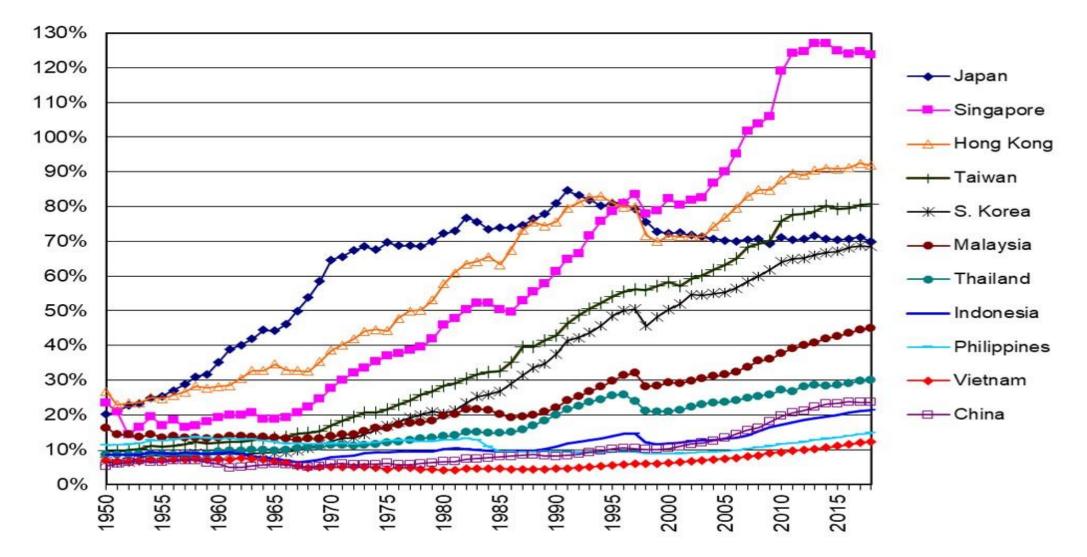
- The middle income trap is a situation where an economy is stuck at income dictated by given resources and initial advantages, and cannot rise beyond that level: **growth is given, not created**.
- Growth based on FDI, ODA, abundant labor, trade agreements, big projects, natural resources, or locational advantages will eventually end. The true source of development is value creation by domestic citizens and enterprises.
- Countries may reach middle income by liberalization, privatization and global integration, but reaching higher income requires strong policy effort to upgrade private dynamism, not laissez-faire.

Why Do Nations Diverge?



Speed of Catching Up: East Asia

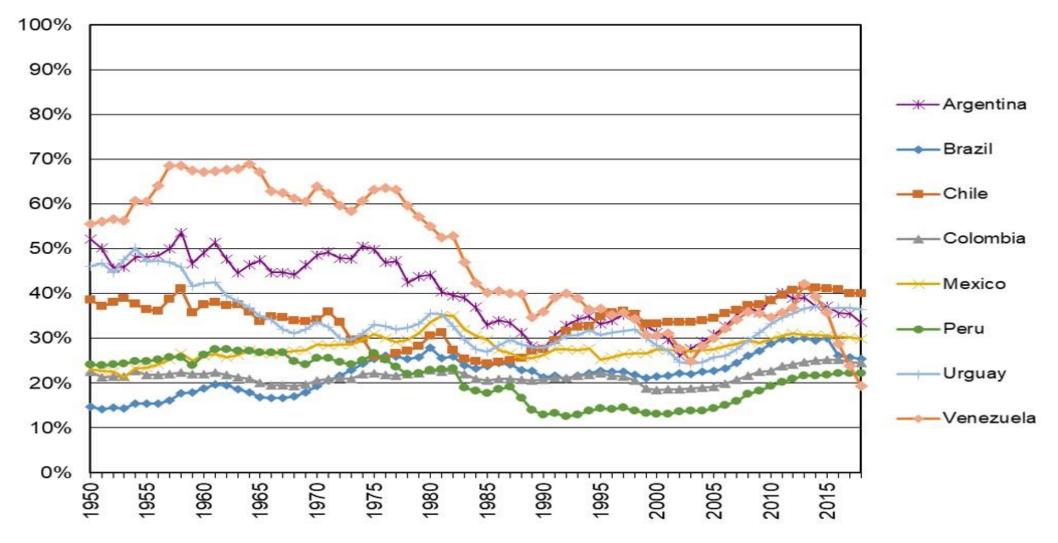
Per capita real income relative to US (Measured by the 1990 international Geary-Khamis dollars)



Sources: Maddison Project Database 2020; for Taiwan, the Central Bank of the Republic of China.

Latin America

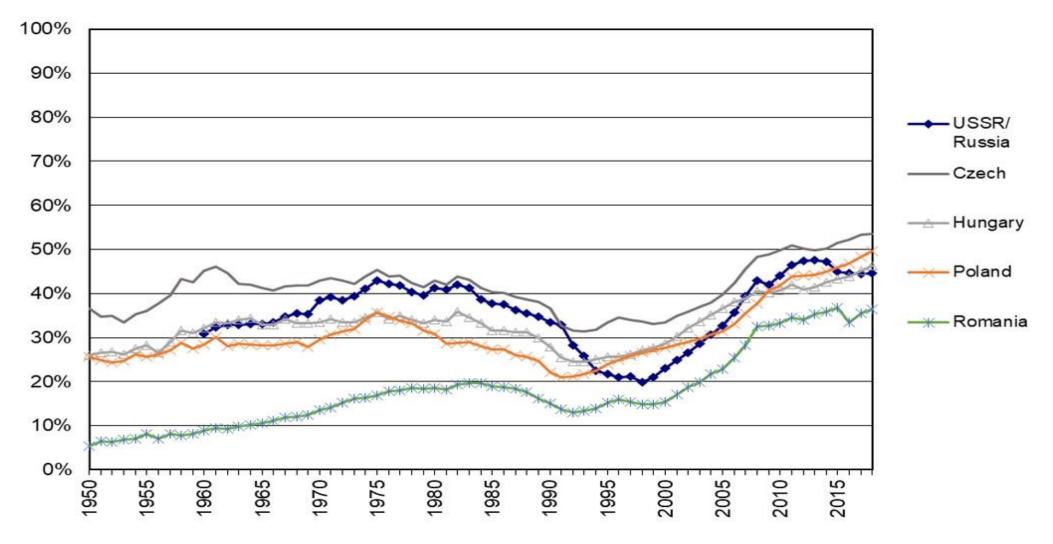
Per capita real income relative to US (Measured by the 1990 international Geary-Khamis dollars)



Source: Maddison Project Database 2020.

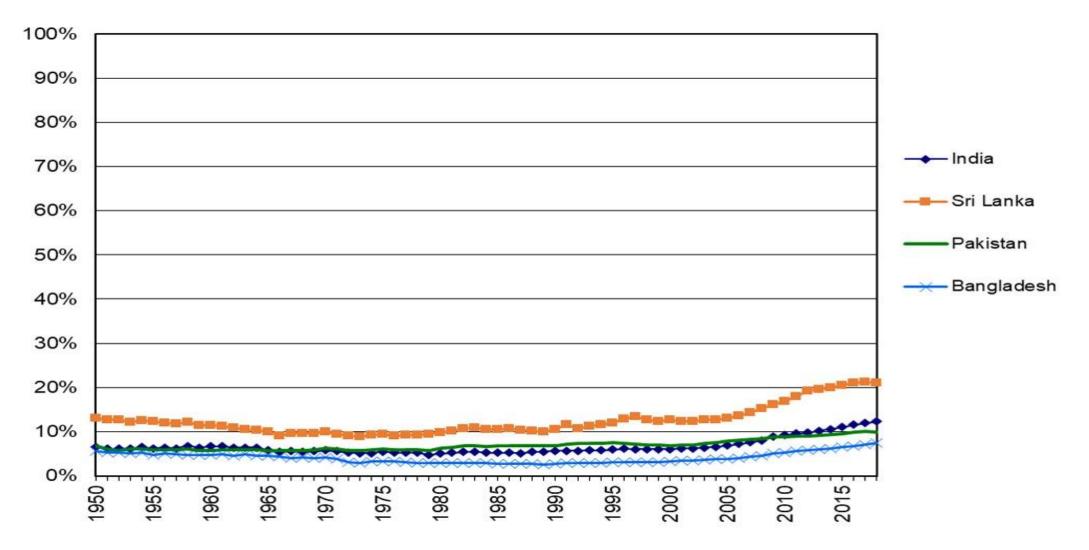
Russia and Eastern Europe

Per capita real income relative to US (Measured by the 1990 international Geary-Khamis dollars)



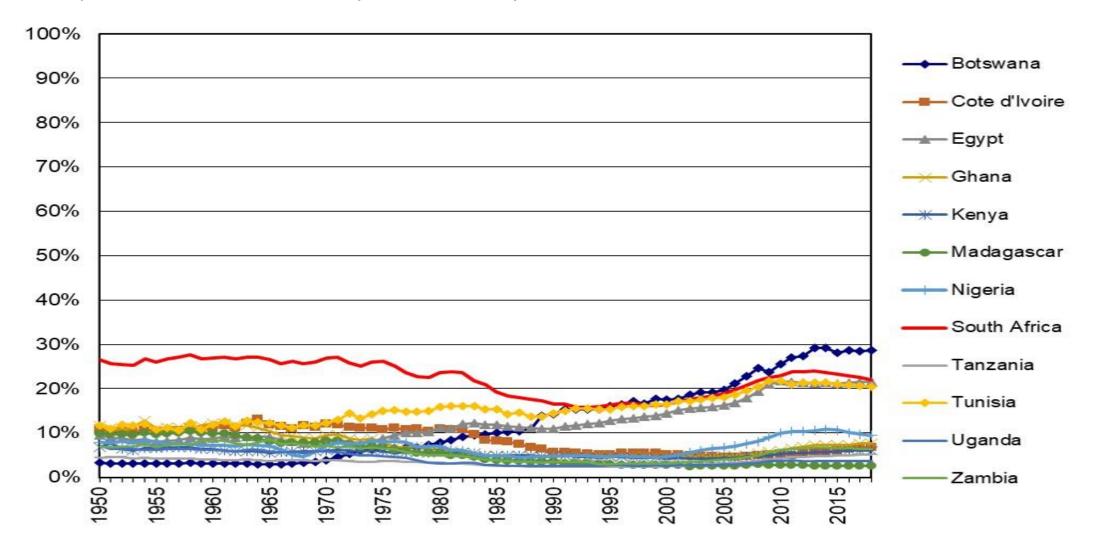
South Asia

Per capita real income relative to US (Measured by the 1990 international Geary-Khamis dollars)



Africa

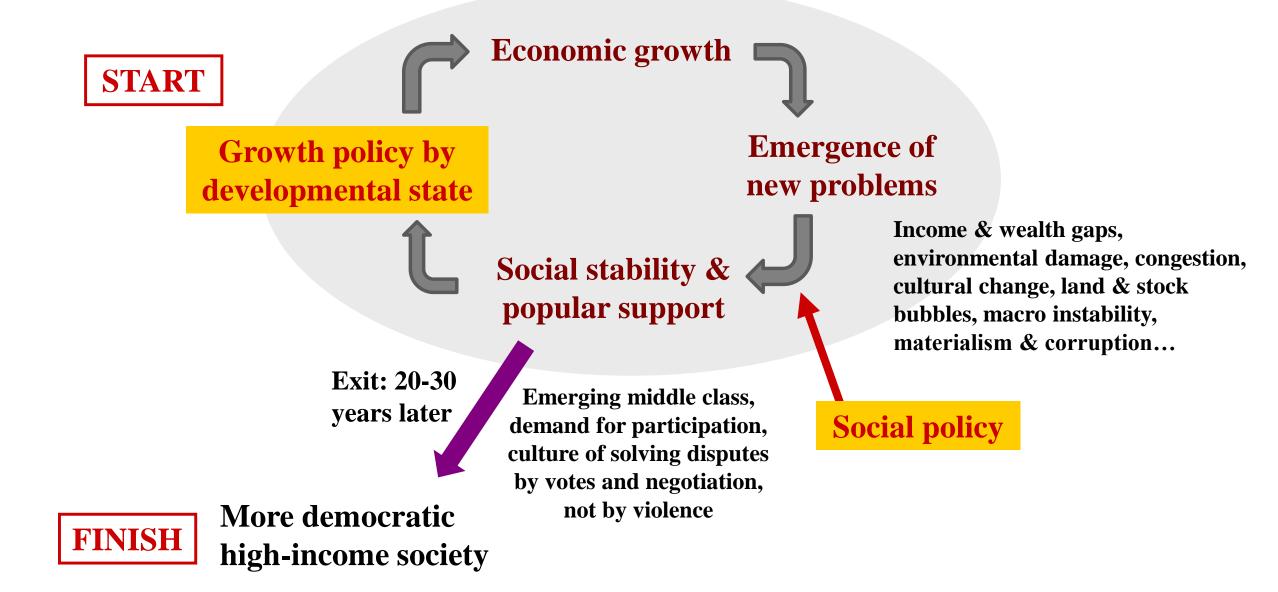
Per capita real income relative to US (Measured by the 1990 international Geary-Khamis dollars)



Causes of the Middle Income Trap

- The lack of competitiveness is the main cause a nation is unable to improve technology, produce high-value products, participate in the global value chain, etc.
- Social problems are another reason for MIT growth can be stalled if society becomes unhappy and unstable due to inequality, corruption, environmental destruction, congestion, etc.
- Political and military issues, if serious, can divert the nation from economic development – internal or external war, ethnic conflicts, terrorism, political fights, etc.

Growth and Social Policy: East Asia's Success Pattern





Two Types of Middle Income Trap

Tran Van Tho, "Viet Nam's conditions for sustained growth to high income country: How to escape from the middle income trap" (2023)

Lower-middle income trap – government is the main obstacle for private sector growth. Laws, policies and institutions must be improved and excessive interventions must be ended to generate private dynamism.
 Upper-middle income trap – even though policies are supportive and business climate is favorable, the private sector is too weak to achieve productivity, technology and innovation, and cannot compete globally.

Prof. Tho says that Vietnam is in the lower-middle income trap (first case).

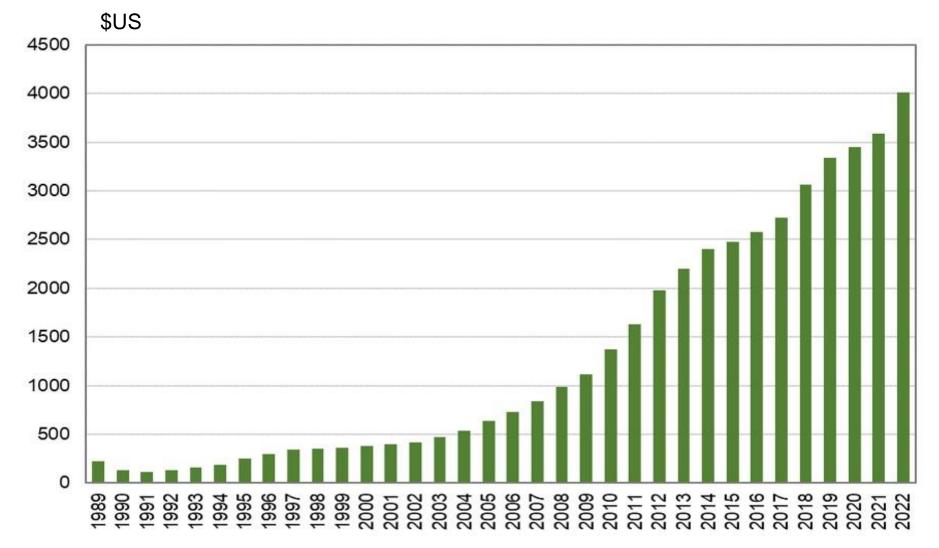
Vietnam's Achievements and Problems

Vietnam's Achievements

- Rapid income growth from a low level (since the 1990s)
- Social achievements in poverty, education, mortality rates, etc.
- Successful FDI attraction and trade policy (WTO, ASEAN, FTAs, TPP, RCEP...)
- Structural transformation from agriculture to industry and service
- The rise of some competitive firms—Vin Group/Vinfast, Viettel, FPT, etc. (but Vietnam needs more)

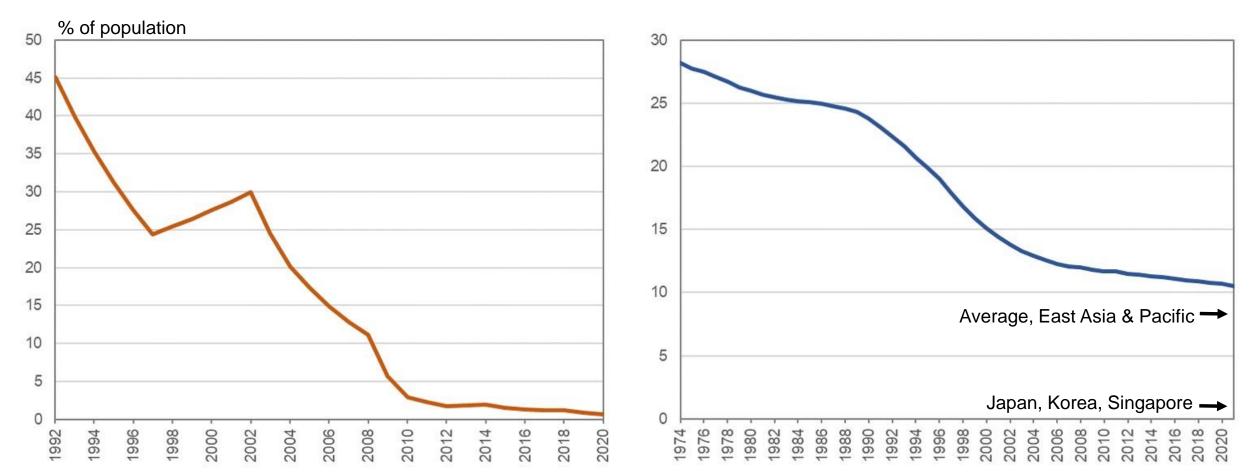
Vietnam: Per Capita Income

World Bank GNI per capita, Atlas method



Source: World Bank Open Data, accessed on 23-02-2024.

Social Indicators Improve



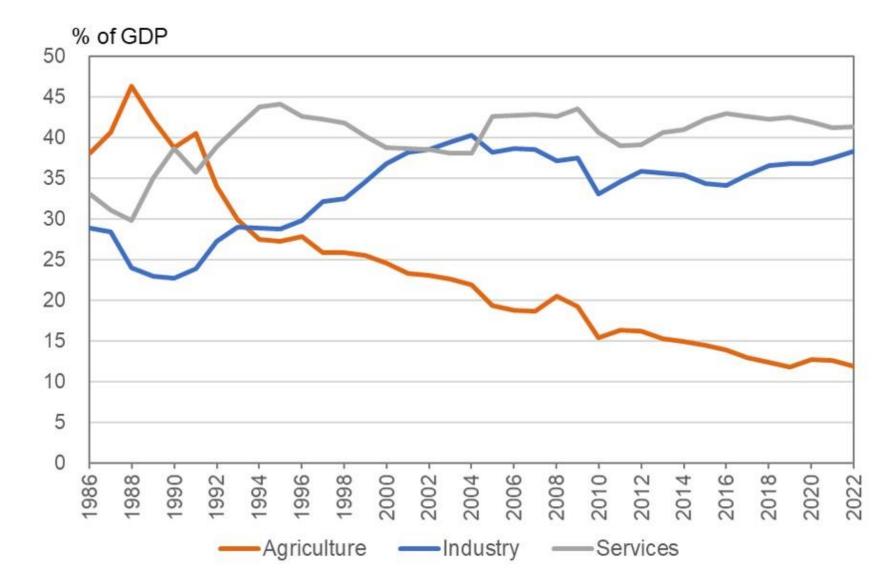
Poverty Headcount Ratio at \$2.15 a Day (2017 PPP)

Source: World Bank, World Development Indicators updated on Dec. 18, 2023.

Mortality Rate, Neonatal (per 1,000 Live Births)

Structural Transformation Has Progressed

Agriculture declines continuously while industry and services each take up about 40% of GDP.



Source: World Bank, World Development Indicators updated on Dec. 18, 2023; there is a data gap and inconsistency at 2010.

Vietnam's Problems

- Growth is slowing down at middle income (too soon) instead of accelerating
- Heavy reliance on FDI for export, technology, and structural transformation
- Weak participation of Vietnamese firms in the global value chain
- Slow construction of modern transport systems (esp. urban train network)
- Slow action on environment and natural protection

Growth Performance during the High Growth Period

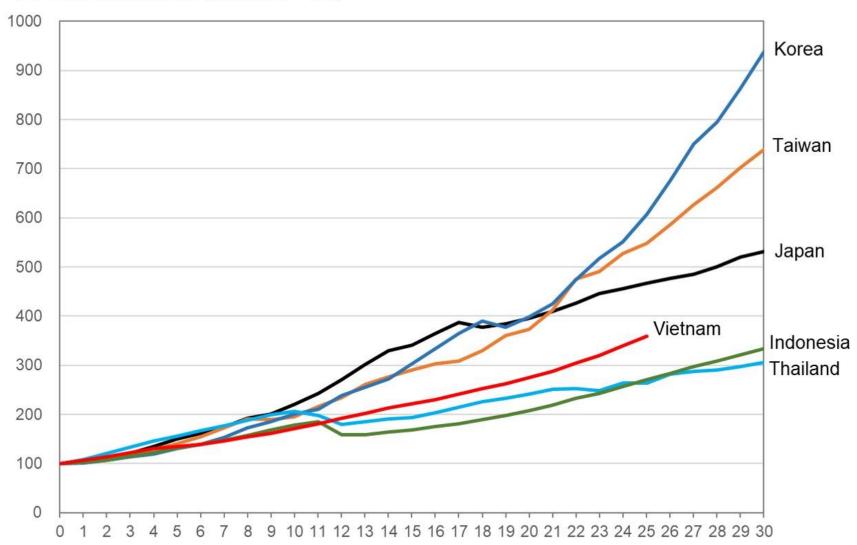
Per capita real income (start year =100)

Vietnam's performance is higher than Thailand or Indonesia but...

Start year

Japan 1956 (10% growth begins) Korea 1961 (Park regime begins) Taiwan 1965 (Mfg. export rises) Thailand 1986 (FDI inflow begins) Indonesia 1986 (FDI inflow begins) Vietnam 1993 (private sector revives; FDI & ODA begin)





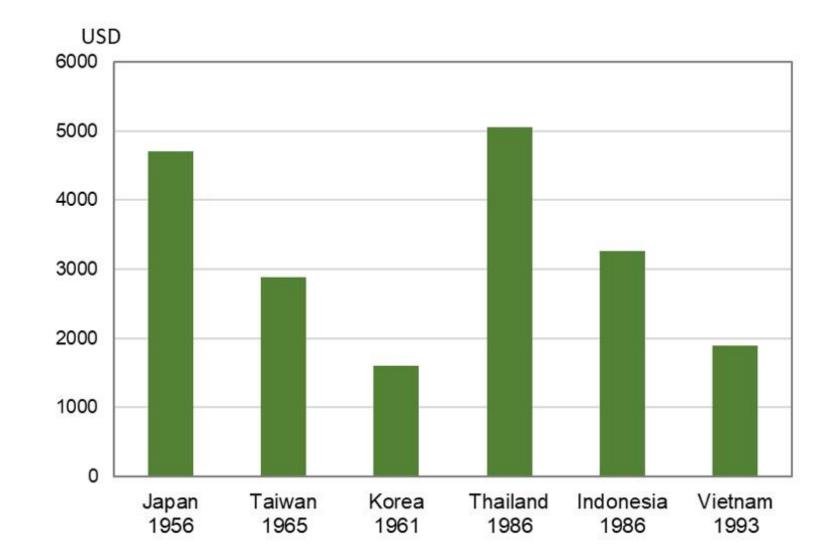
Years after high growth begins

Per Capita Real Income in the Start Year (Measured by the 1990 international Geary-Khamis dollars)

Vietnam's initial income was lower than Thailand or Indonesia.

Start year

Japan 1956 (10% growth begins) Korea 1961 (Park regime begins) Taiwan 1965 (Mfg. export rises) Thailand 1986 (FDI inflow begins) Indonesia 1986 (FDI inflow begins) Vietnam 1993 (private sector revives; FDI & ODA begin)



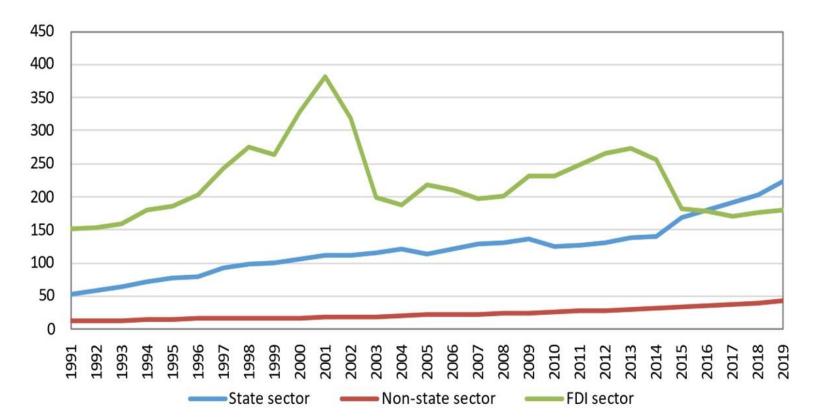
Labor Productivity Performance 1991-2019

- Economy-wide labor productivity growth was 4.65% which was moderate and not very high. There was no productivity breakthrough unlike Japan, Korea or China.
 Vietnam's productivity position did not improve much within ASEAN.
- By ownership, the labor productivity of the FDI sector rose very little (0.6%/year) compared with the state sector (5.3%/year) or the non-state sector (4.4%/year).

Level of Labor Productivity by Ownership

(VND million per worker at constant 2010 price)

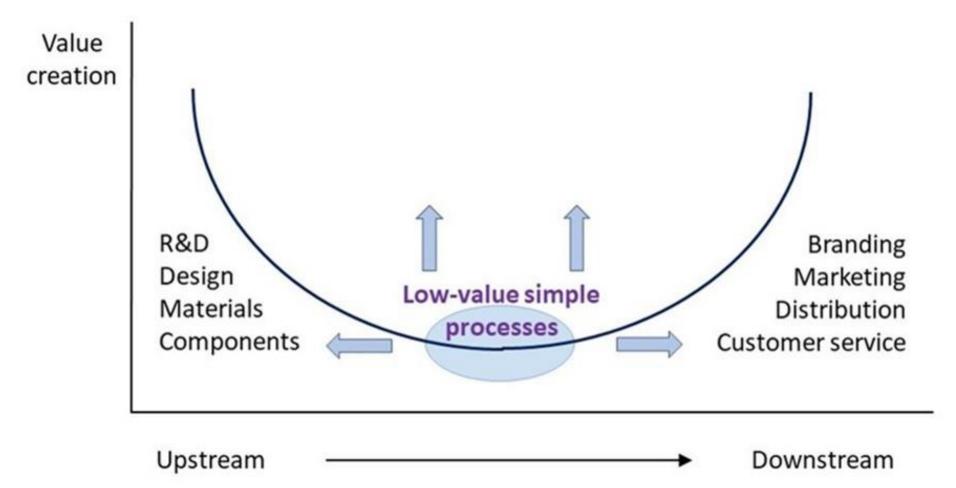
Source: Viet Nam Productivity Report (2021) using GSO data with adjustment for the 2010 data gap.



Why FDI Does Not Target Value Creation in Vietnam

- In the early 2000s, the labor productivity of the FDI sector fell significantly. This was due to the arrival of many FDI firms doing simple labor-intensive light manufacturing (garment, shoes, electronic assembly, etc.) rather than mechanical engineering, mining or ICT.
- Many FDI firms consider Vietnam as a place to do simple processes rather than high-tech design or production. They are happy with lowskill cheap labor and not willing to invest in high-level human resources.
- This strategy of FDI firms reflects Vietnam's failure to produce competent scientists, engineers, technicians, etc. in large number needed for technology upgrading.

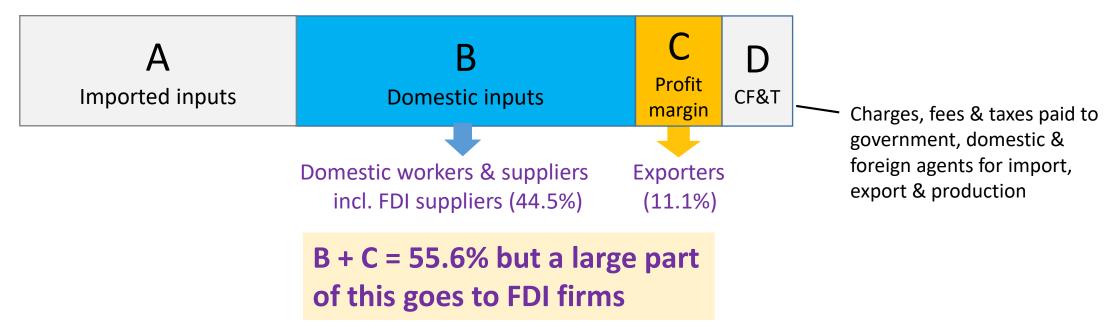
The Smile Curve and the Lack of Functional Upgrading



Latecomers usually start with simple cutting, sewing, assembly, etc. with little value creation. From there, activities must be upgraded to raise productivity and capture upstream and downstream processes. This will increase domestic value creation and effective participation in the GVC.

Limited Participation in the Global Value Chain

Vietnam: Export Value Structure (2015)



- Khoi & Chaudhary (2019) calculated Vietnam's participation in GVCs. Backward participation (upstream components, B) rose but forward participation (downstream marketing, C) remained stagnant.
- Supporting industries (upstream components) are dominated by FDI firms.

Solution

Policy as the Key Factor

Economic performance = Private dynamism + Policy quality + External factors

- **Private dynamism** is the most fundamental determinant of the nation's economic performance.
- External factors do matter but their effects usually wear out in the long run (global recession, financial crisis, terrorism, war, natural disaster, COVID, etc.)
- **Policy** has the important role of enhancing private dynamism and coping with external shocks.

The lack of policy quality is the main cause of any long-term growth problem including the middle income trap.

Industrial Policy Quality

• I have visited the following countries in Asia and Africa to compare the formulation and contents of industrial policy.

Asia—Vietnam, Singapore, Taiwan, Korea, Malaysia, Thailand, Indonesia, India, Cambodia, Sri Lanka, Myanmar
Africa—Ethiopia, Rwanda, Mauritius, Mozambique, Zambia, Tanzania, Ghana, Uganda, South Africa, Kenya, Djibouti

 In policy quality, Asia is not always superior to Africa. Some African countries such as Mauritius and Rwanda practice better industrial policy than Vietnam or Indonesia.

How Do You Measure Industrial Policy Quality? (Tentative)

Policy areas

- 1. Industrial human resource
- 2. Domestic enterprise development
- 3. Business climate
- 4. Power & logistics
- 5. Export promotion
- 6. Strategic FDI marketing
- 7. Industrial parks
- 8. Supporting industries & FDI-local firm linkage
- 9. Productivity, technology & innovation10.Standards & testing

Policy functions

- 1. Policy ownership
- 2. Vision & commitment of top leader(s)
- 3. Policy drafting procedure
- 4. Authority & capacity of policy organizations

5 – Excellent

3 – Moderate

0 – None or worse

4 - Good

2 – Some

1 – Little

- 5. Mindset & competency of implementing officials
- 6. Budgeting & staffing
- 7. Inter-ministerial coordination
- 8. Involvement of key non-official stakeholders
- 9. Monitoring & evaluating mechanisms

10.Impact on the real economy

X

The Scorecard for Vietnam

Date: May 2015 (based on policy research 1995-2015)

	Evaluation of industrial policy sub-components										
	Industrial human resource	Domestic enterprise development	Business climate	Power and logistics	Export promotion	Strategic FDI marketing	Industrial parks	Supporting industries & FDI-local firm linkage	Productivity, technology & innovation	Standards and testing	Average
Policy ownership	2	2	3	3	2	3	4	2	2	2	2.5
Vision & commitment of top leader(s)	1	1	2	3	2	2	2	2	1	1	1.7
Policy drafting procedure	2	2	1	3	1	1	1	1	1	2	1.5
Authority & capacity of policy organizations	2	3	2	3	2	2	3	2	2	2	2.3
Mindset & competency of individual officials	3	2	2	2	2	2	2	2	2	2	2.1
Budgeting & staffing	2	3	2	4	2	2	2	2	2	2	2.3
Inter-ministerial coordination	1	1	1	1	1	1	1	1	1	1	1.0
Involvement of key non-official stakeholders	2	2	2	2	2	2	3	2	2	2	2.1
Monitoring & evaluating mechanisms	0	0	2	3	0	0	1	0	0	0	0.6
Impact on real economy	0	2	3	4	2	2	3	1	1	1	1.9
AVERAGE	1.5	<mark>1.8</mark>	2.0	2.8	1.6	1.7	2.2	1.5	1.4	1.5	1.8
GRADE	D	D	С	с	D	D	с	D	D	D	D
Remark	Fragmented over MOET, MOLISA, MOIT, etc.	MPI & MOIT measures weak	Better than 1990s but still much room for improvement	Many ODA projects; improving significantly	Ministerial level only; not a national drive	Policy weak & decentralized but FDI comes	Too many, too decentralized; some effective	Much talk, little action except int'l cooperation	No realistic or pragmatic policy	In effective policy design & imple mentation	

Notes:

- Evaluation: 0 (non-existent or worse), 1 (little), 2 (some), 3 (moderate), 4 (good), 5 (excellent).

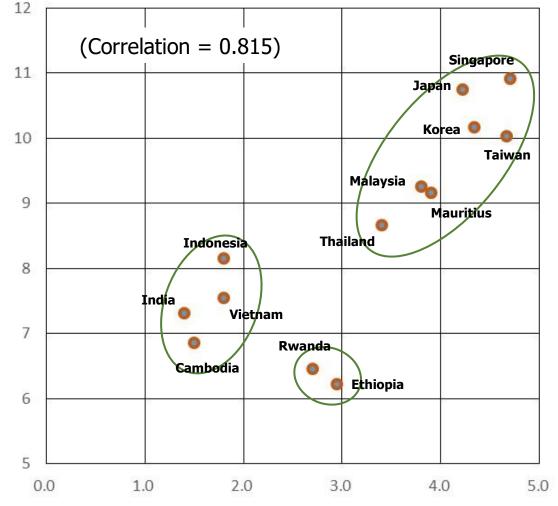
- Evaluation of policy prepared and implemented by government only; results obtained by private effort, international cooperation or external conditions are not included.

- Letter grades: A+ (4.5 or above), A (<4.5), B (<4), C (<3), D (<2), F (<1).

		al policy ality	Per capita income	Doing Business ranking among 189 entities (WB, 2014)		
~	Mean	SD	(WB, 2013, USD)			
Singapore	4.70	0.48	\$55,183	1		
Japan	4.22	0.83	\$46,330	29		
Korea	4.33	0.71	\$25,977	5		
Taiwan	4.67	0.71	\$22,597	19		
Malaysia	3.80	1.14	\$10,538	18		
Mauritius	3.90	0.57	\$9,478	28		
Thailand	3.40	0.84	\$5,779	26		
Indonesia	1.80	0.63	\$3,475	114		
Vietnam	1.80	0.43	\$1,910	78		
India	1.40	0.70	\$1,498	142		
Cambodia	1.50	1.43	\$950	135		
Rwanda	2.70	1.06	\$639	46		
Ethiopia	2.95	1.02	\$505	132		

Industrial Policy Quality: Summary of 13 Economies

Log of per capita income



Industrial policy quality score

Observations

- Governments are not created equal. There is a huge gap in industrial policy quality from excellent to poor.
- Industrial policy quality and income level are positively correlated (0.815). This suggests, but does not prove, causality.
- Within each country, policy quality is similar across various components. If one policy or ministry is bad, others are also likely to be bad. There is a common policy culture prevailing in the entire government.

Vietnam: Policy Talks vs. Implementation

Since the 1990s, the same issues have been discussed and documented many times without implementing effective solutions.

- **Agro-processing**—add value before export (coffee, seafood, fruits, vegetables, cashew nuts, etc.)
- **Productivity**—raise productivity by appropriate education, training, kaizen, innovation, etc. (since 1995)
- **Supporting industries**—produce components of motorcycles, automobiles, electronics, etc. domestically and by domestic firms.
- **Upgrading FDI policy**—from quantity & job creation to quality & value creation in attracting FDI.
- Environment—policies are in place for air and water quality, natural protection, etc. but implementation is weak.

Not WHAT but HOW

- The industrial policy menu is similar across countries and usually includes:
 - Education and training, export promotion, import substitution, incentives for targeted sectors, SME support, FDI attraction, linkage creation, power and logistics, industrial parks, R&D, technology transfer, low-interest policy loans, ICT, startups, productivity, innovation, standards, worker rights, green manufacturing, regional planning, etc.
- The question is not **WHAT** governments plan to do but **HOW** competently they execute these common policies.
- It is **HUMANS**, not resources, laws, institutions, technology or machines, that improve policy implementation.

Critical Importance of Leadership and Technocrats

- ✓ A national leader who is wise, strong, and action-oriented
- ✓ **Competent and dedicated technocrats** who support this leader
- Leadership is primary because a good leader can create competent technocrats if they don't exist (Taiwan 1950s, Korea 1960s).
- When the nation has a good leader and good technocrats, it can execute policies effectively through self-effort and policy learning. There is no need for foreign experts or international organizations to advise what to do.

Policy Learning

The best way to improve policy capability is systematic comparison of international best (and worst) practices. Use them as building blocks to create one's own policy. Policy learning must be vigorous, systematic and with proper local adjustment.

- Distinguish globally common factors and country-specific factors. These two are always present in any international comparison.
- Build general skill to create policies that fit your country. Don't copyand-paste policies of others.
- Ask the right question. Choose the right benchmark countries. These require deep knowledge and extensive experience.
- If you don't know where to start, invite competent foreign experts to guide you through the initial steps. Regain ownership when you accumulate sufficient policy skill.

Japan's Policy Dialogue with Developing Countries: A Selected List

Country	Phases	Key members from Japan	Remark
Argentina	1985-1987 1994-1996 (follow up)	Saburo Okita (former foreign minister, IDCJ); Hirohisa Kohama (IDCJ), Akio Hosono, Kotaro Horisaka (professors); JICA	Agriculture & livestock farming, industry, transport, export promotion (Okita Report). Follow-up phase studied measures to strengthen economic ties with Japan/East Asia.
Vietnam	1995-1996 1996-1998 1998-1999 1999-2001	Shigeru Ishikawa, Yonosuke Hara (professors); JICA	Large-scale joint study on macroeconomy, industry (with in-depth studies of selected sectors), agriculture, enterprise reform, and financial crisis management (Ishikawa Project).
Paraguay	1998-2000	Kagehide Kaku (DIR), Hidesuke Kotajima (DIR), Akio Hosono (professor); JICA	Economic develoment, competitiveness, and export promotion (including clusters and agro-industry chain).
Thailand	1999	Shiro Mizutani (former MITI official); JICA	Study on SME promotion policy (Mizutani Plan)
Indonesia	2000	Shujiro Urata (professor); JICA	Policy recommendations for SME promotion
Myanmar	1999-2002	Konosuke Odaka (professor); JICA	Agriculture, rural development, industry, trade, finacne, ICT, etc.
Mongolia	1998-2001	Hiroshi Ueno and Hideo Hashimoto (ex-World Bank economists and professors)	Study on economic transition and development
Indonesia	2002-2004	Takashi Shiraishi, Shinji Asanuma, Shujiro Urata (professors); JICA	Macroeconomic management, financial sector reform, SME promotion, private investment promoton, democratization, decentralization, human resource development
Laos	2000-2005	Yonosuke Hara (professor); JICA	Macroeconomy, finance, state enterprises, FDI, poverty reduction.
Vietnam	2003-present	Keidanren, Japanese embassy, JICA, JETRO, JBIC	Bilateral joint initiative to improve business environment with action plans and 2-year monitoring cycles
Ethiopia	2009-2011 2012-2016 2017-present	Kenichi Ohno, Izumi Ohno (GRIPS professors); Japanese embassy, JICA	Policy methods and organizations, kaizen, export promotion, champion products, FDI policy and support, SME support, productivity, automotive assembly, inviting Japanese FDI, etc.
Myanmar	2012-2015	Konosuke Odaka, Shigeru Matsushima, Toshihiro Kudo (professors); METI, JICA	Supporting economic reform program covering finance, trade, investment, SMEs, agriculture, rural development.
Laos	2019-2020	Toshiro Nishizawa, Terukazu Suruga, Takuji Kinkyo, Kazue Demachi, Fumiharu Mieno (professors), MOF, JICA	Joint policy research and dialogue for fiscal stabilization, fiscal & debt management, resource export, balance of payments, financial system development.

Japan, Korea and Taiwan

Policy Formulation of Japan, Korea and Taiwan

Japan (1960s) – rapid growth and industrialization Korea (1960s-70s) – rapid growth and industrialization Taiwan (2000s-10s) – global supply of ICT hardware

- The policy capacity and method of each government was different, but they all produced some good economic results.
- Within each country, policy capacity and method may change over time and with the change of government.

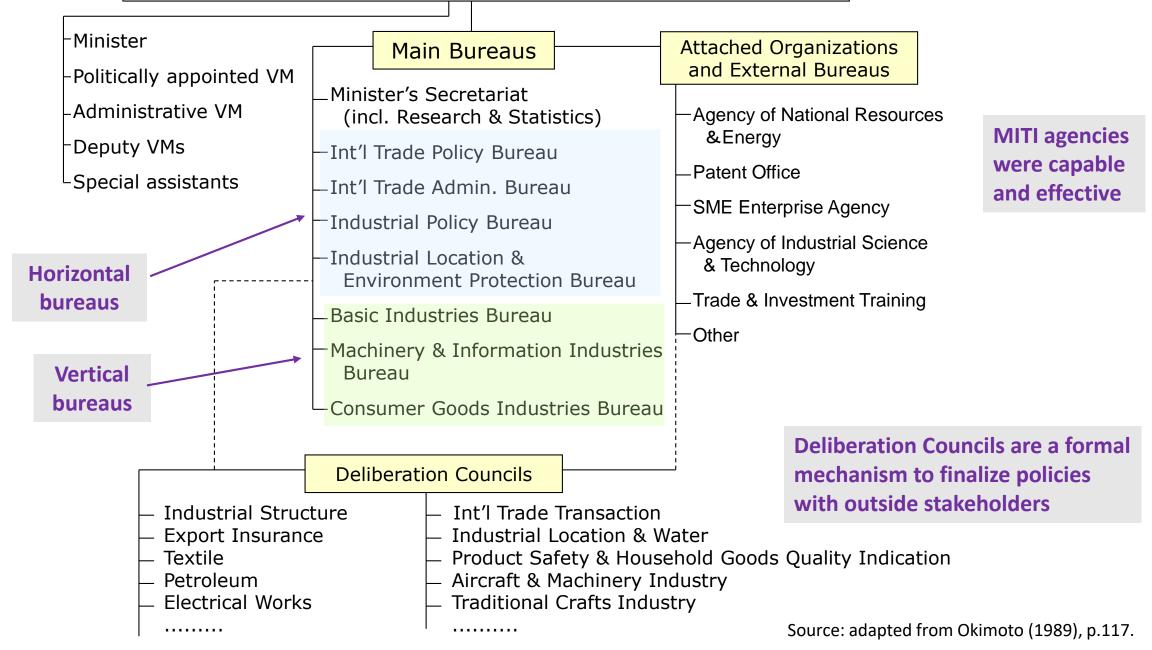
Japan's Ministry of International Trade and Industry (MITI) in the 1960s



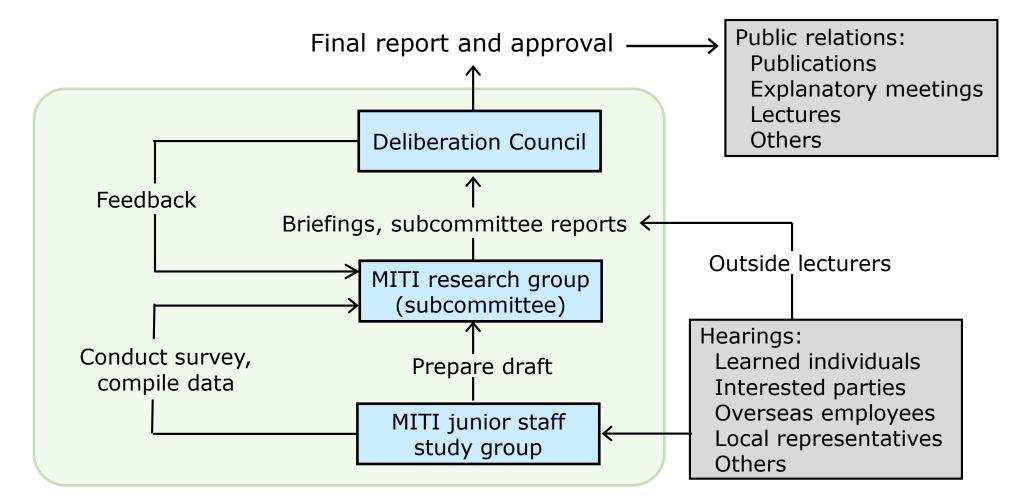
- **1.Broad mandate**—MITI covered industry, trade, energy, mining, SMEs, investment, technology, IPR, etc. Its functions were also broad: vision-setting, research, consensus-building, law-drafting, implementation, monitoring, etc.
- **2.Clean relationship with politics**—MITI worked interactively with politicians for policy formulation. It was not subjugated by politics.
- **3.Thick information networks**—MITI and businesses shared the same awareness and future visions. Industrial policy was a joint work between MITI and the private sector. This facilitated policy implementation.
- **4. Internal structure**—MITI had vertical and horizontal bureaus which deliberated both sector-specific issues and cross-cutting issues.
- **5.MITI officials**—despite low salary, MITI officials were highly motivated to work on industrialization very hard and even at night (without overtime pay).

Ministry of International Trade and Industry

(1960s)



MITI's Policy Making Was Bottom-up



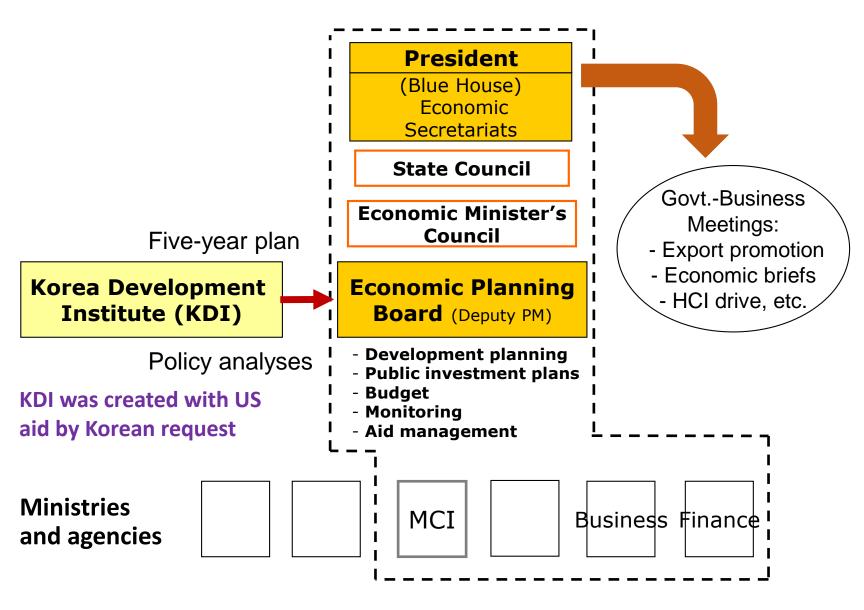
Young officials in their 30s actively gathered information and interacted with stakeholders, thus having substantive influence on final result unlike in most other countries where young officials only take orders from above and do what was assigned.

Source: Ono (1992); original graph was rearranged so reporting direction goes from bottom to up.

South Korea in the 1960s-70s

- After the Korean War (1950-53), South Korea was poor and without natural resources. Politicians and bureaucrats were incompetent and corrupt. The economy was barely surviving with US aid. Few imagined that growth was possible in this country (World Bank 1993).
- Park Chung-hee's military coup in 1961 moved South Korea into action. He established the Economic Planning Board and drafted five year development plans. Incompetent and corrupt officials were removed.
- **1960s:** under strong state guidance, chaebols (large corporate groups) such as Samsung, LG and Daewoo promoted export. Technology and finance were imported. Government dictated fund allocation.
- 1970s: Korea targeted heavy industries. Chaebols were engaged in steel, automobiles, shipbuilding, and electronics. By then, Korean bureaucracy had become highly reputable in the developing world.

Policymaking Under A Strong President (1960s-70s)





- President Park directly controls economic policies
- EPB acts as a super-ministry
- Research institutes (KDI and others) provide analyses
- Very close and cooperative gov't-business relationship
- Performance-based rewards and penalties

Top-down Orders and Rewards for High Performers



Monthly Export Promotion Meeting chaired by President Park (late 1960s)



President Park confers medals and great honor to firms achieving high export performance



Saemaul Undong (New Village Movement)

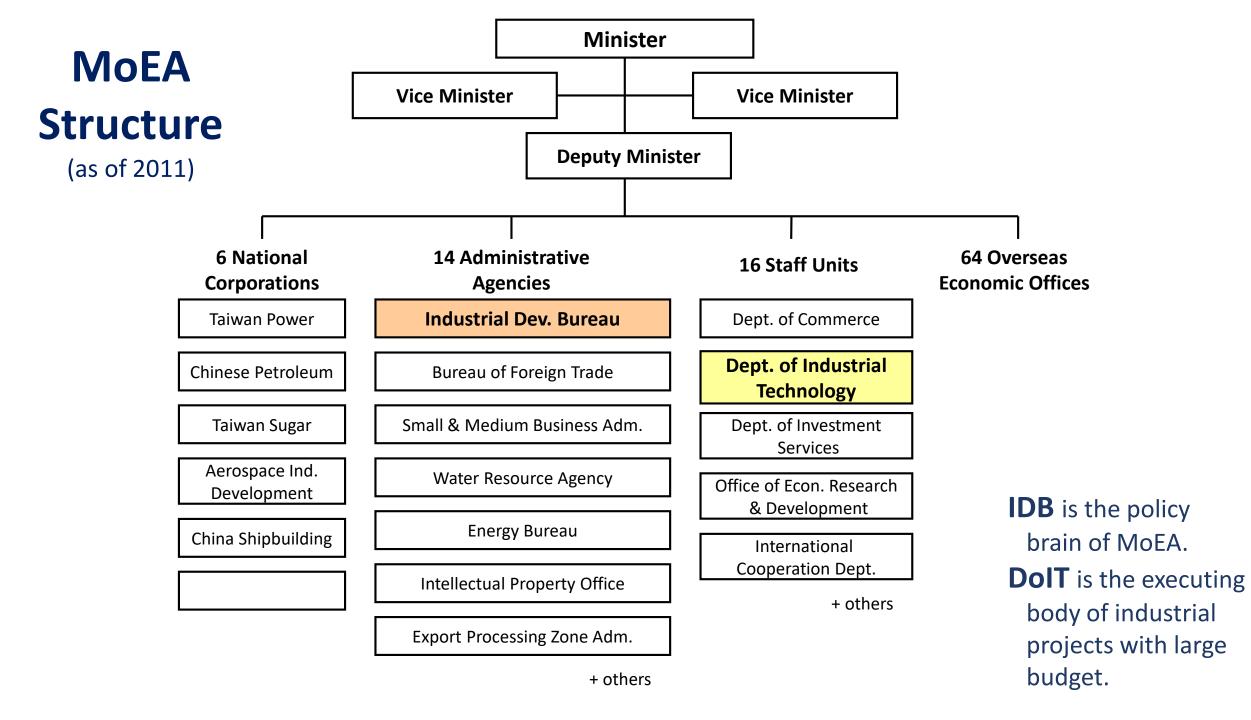
President Park's massive rural transformation plan targeted mindset, lifestyle and income. Each village was graded and assistance was continued only to high-performing villages. Korean villages were activated, and the urbanrural gap narrowed or even reversed (1970s).

Source: KDI, From Despair to Hope: Economic Policymaking in Korea 1945-1979: A Memoir by Kim Chung-yum, 2011.

Taiwan's Ministry of Economic Affairs (MoEA) in the 2000s-10s



- Until the 1980s, MoEA was a very powerful ministry promoting industrialization (Robert Wade, 1990). Taiwanese SMEs responded strongly to MoEA policies.
- With the rise of large ICT firms (TSMC, UMC, Foxconn, Acer, etc.), MoEA is less powerful today but still influences Taiwan's industrial direction.
- Unlike Japan's MITI which drafts policies internally, MoEA outsources policy drafting and stakeholder consultation to two think tanks—the Taiwan Institute of Economic Research (TIER) and the Chung-Hua Institution for Economic Research (CIER).
- Unlike Japan's MITI with horizontal and vertical bureaus, MoEA's policy function is concentrated in the Industrial Development Bureau.



Taiwan's Industrial Policy Instruments

Taiwan's policy instruments have been streamlined to a few (no more incentives for export, investment, training, etc.) The policy structure is simple but effective.

- **Technology institutes** offering excellent support in technology and networking (ITRI and sectors: metal, food, plastic, automobile, IT, precision machinery, etc.)
- Science parks, EPZs, and industrial parks —tenant firms are required to do intensive R&D in science parks.
- Industrial Projects comprehensive hands-on technical and financial support is provided to selected firms to commercialize new technology.
- Comprehensive SME support.



Industrial Technology Research Institute

Vietnam?

- Despite Vietnam's developmental success in the 1990s, 2000s, and 2010s, policy quality has not improved. Policy support for domestic businesses is insufficient.
- Vietnam shows various signs of an approaching middle income trap:
 - ✓ Growth slowdown at middle income
 - ✓ Shortage of high-skill engineers, innovators, and scientists
 - \checkmark Moderate performance of labor productivity and TFP
 - ✓ Heavy reliance on FDI and limited participation in GVCs
- To cope with these problems, Vietnam needs to enhance the capacity of national leadership and economic technocrats.
- Active promotion of technology and innovation are needed with less bureaucracy.

Summary and Conclusion Key Ingredients of Good Policymaking

- A national leader who is active, economically wise, and personally directs important policies is essential (top-down management).
- **Competent, dedicated, and clean technocrats** are equally critical for policy implementation (bottom-up capability).
- **Policy content** and **policy organization** can be chosen flexibly to fit each country. There is no one-size-fits-all.
- **Policy learning** is required to enhance policy capacity. International experiences should be collected and compared. This can be done through government's self-effort, mobilization of private experts, or assistance of qualified foreign advisors (as Japan, Korea, Taiwan, Singapore, etc. did in the past).