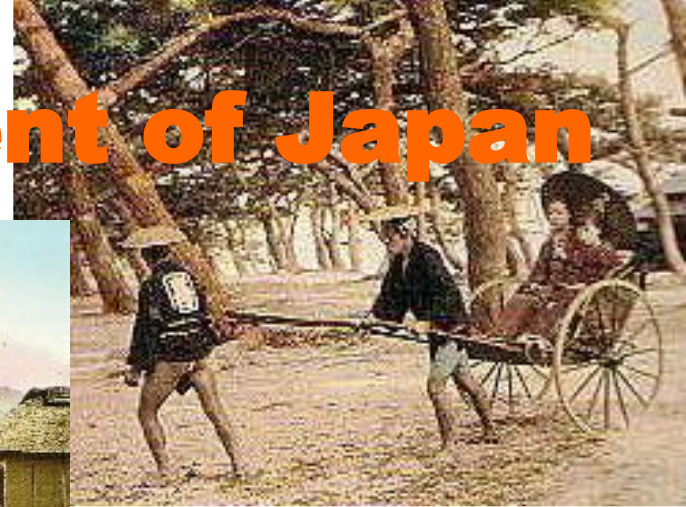
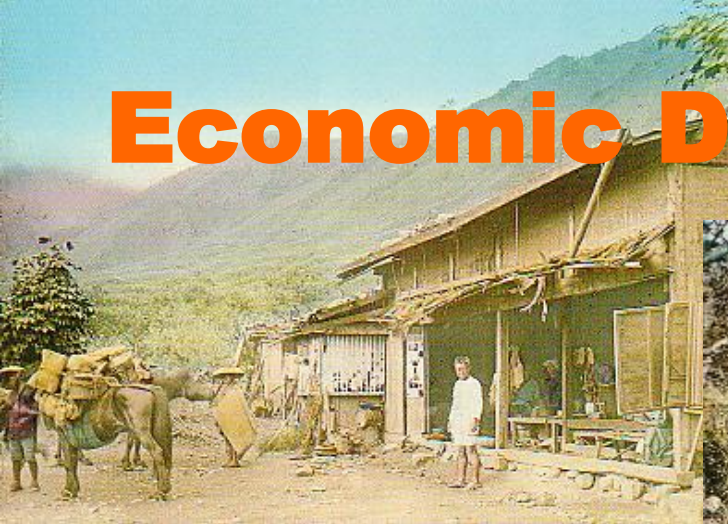


# Economic Development of Japan



**Kenichi Ohno**  
**National Graduate Institute for**  
**Policy Studies (GRIPS)**  
**Addis Ababa, January 2015**

# Topics

- Overview: why Japan could catch up with the West
  - Cumulative and evolutionary history
  - Private dynamism and policy support
- Meiji Period (late 19th-early 20th century)
  - *Gosho*, *zaibatsu* and super-businessmen/policy support
- Post WW2 high growth (late 1950s-60s)
  - Kaizen movement/MITI's industrial policy, etc.

For more information, please see:

- **Textbook:** Kenichi Ohno, *The Economic Development of Japan: The Path Traveled by Japan as a Developing Country*, GRIPS Development Forum, 2006; free softcopy available at [www.grips.ac.jp/forum/pdf06/EDJ.pdf](http://www.grips.ac.jp/forum/pdf06/EDJ.pdf)
- **Lecture slides:** [www.grips.ac.jp/teacher/oono/hp/index.htm](http://www.grips.ac.jp/teacher/oono/hp/index.htm)

# I. Emperor's Rule

# II. Samurai's Rule

# III. Modern-ization

# IV. Postwar



**NARA**

Centralization

Jinshin War × 671

Taika Reform × 645

Clan fights

Hunting & gathering

**HEIAN**

Nobles, Decentralization



**KAMAKURA  
MUROMACHI  
SENGOKU**

Internal wars, dynamic & fluid society

1603



**EDO**

Tokugawa Shogunate

Peace, isolation, conservative class society

1867

**MEIJI**

Westernization, industrialization, militarization



**WAR**

1937-45



Rapid recovery and growth



XXXX

XXXX

XXX

Rice

Buddhism

Chinese culture & political system

WEST: guns & Christianity

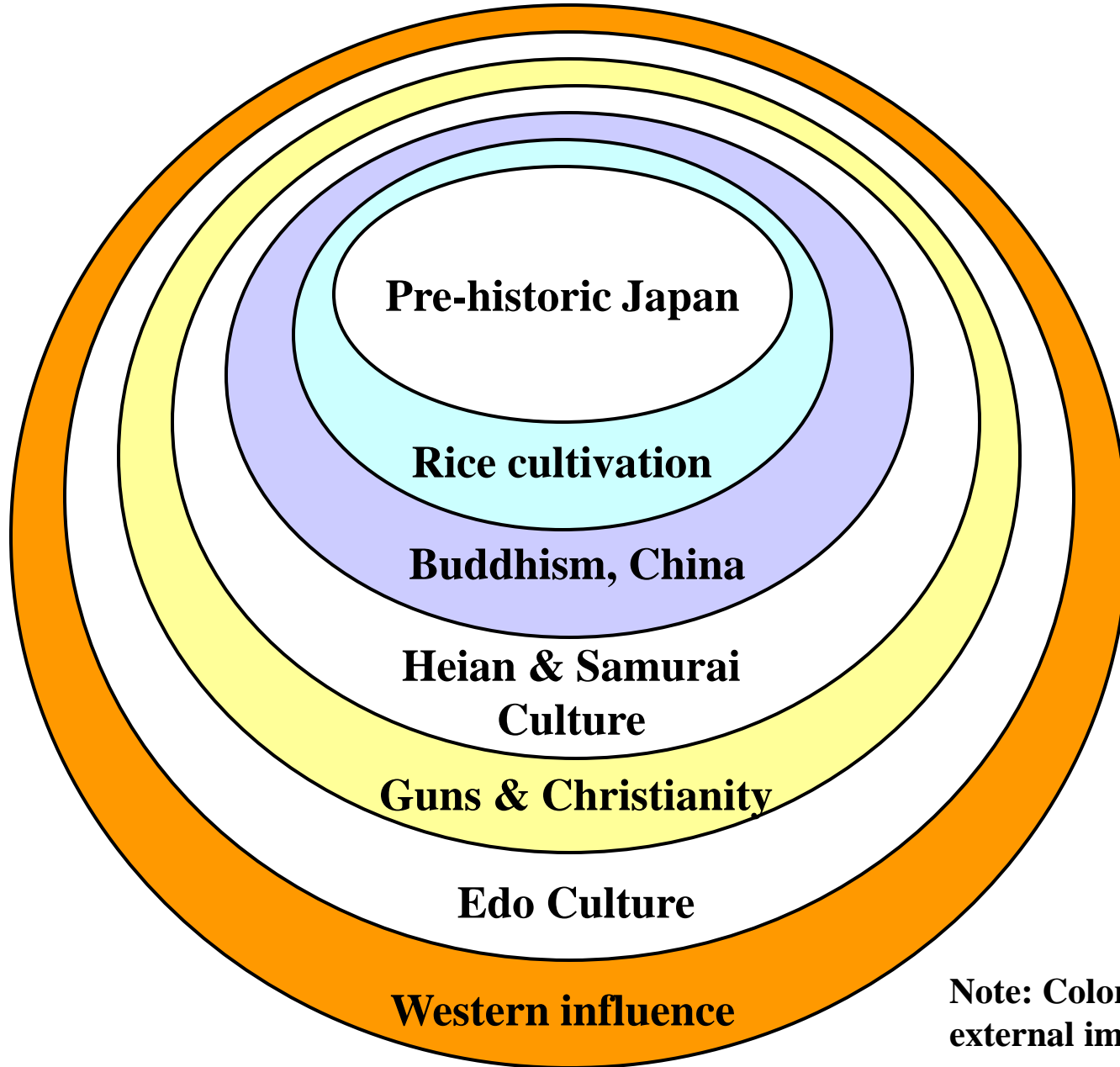
WEST!!!

US occupation 1945-52





# Japan's Multi-layered Identity



**Note: Colored areas indicate external impacts**

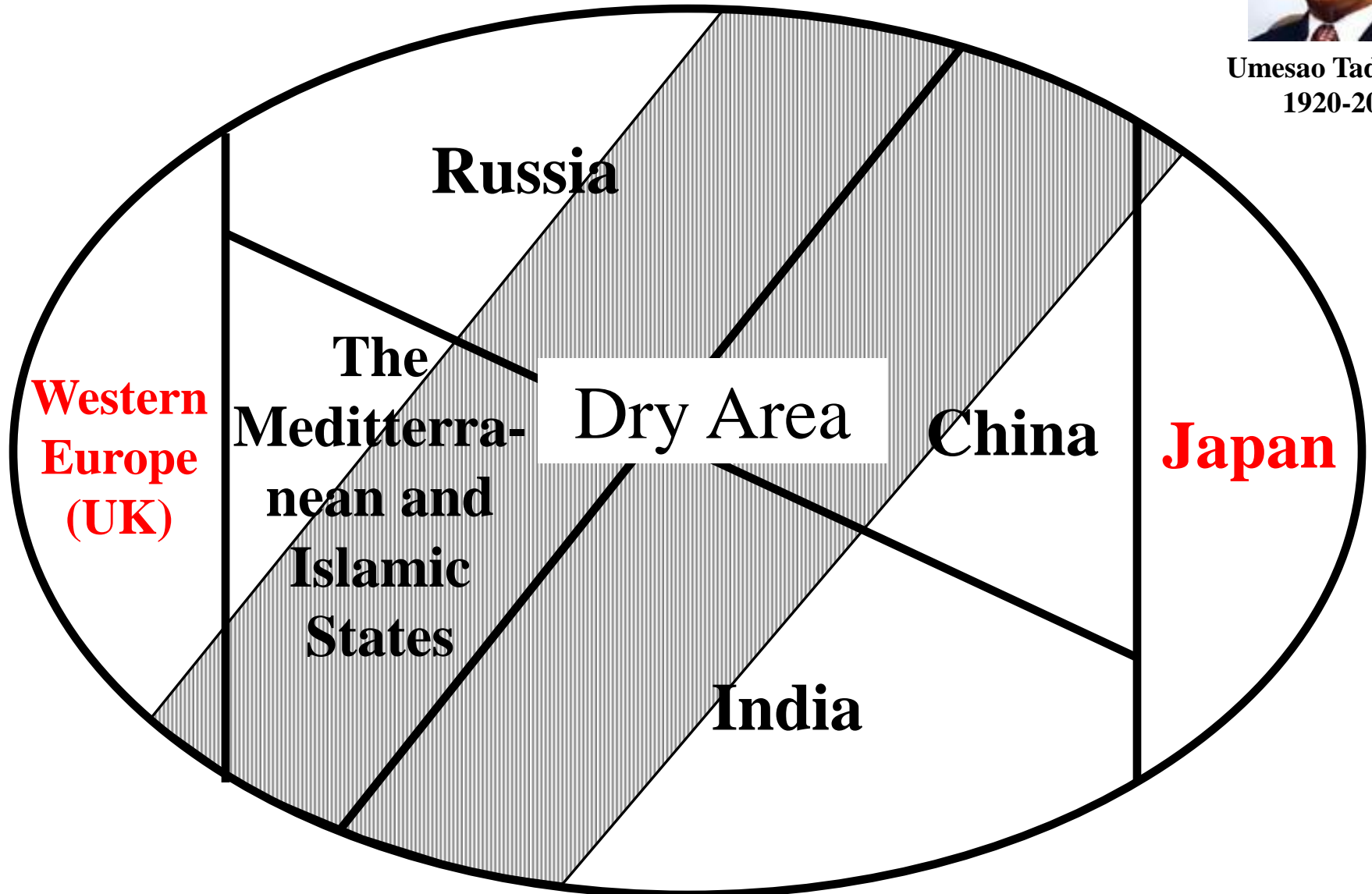
# Dr. Umesao's View of the World

P.9

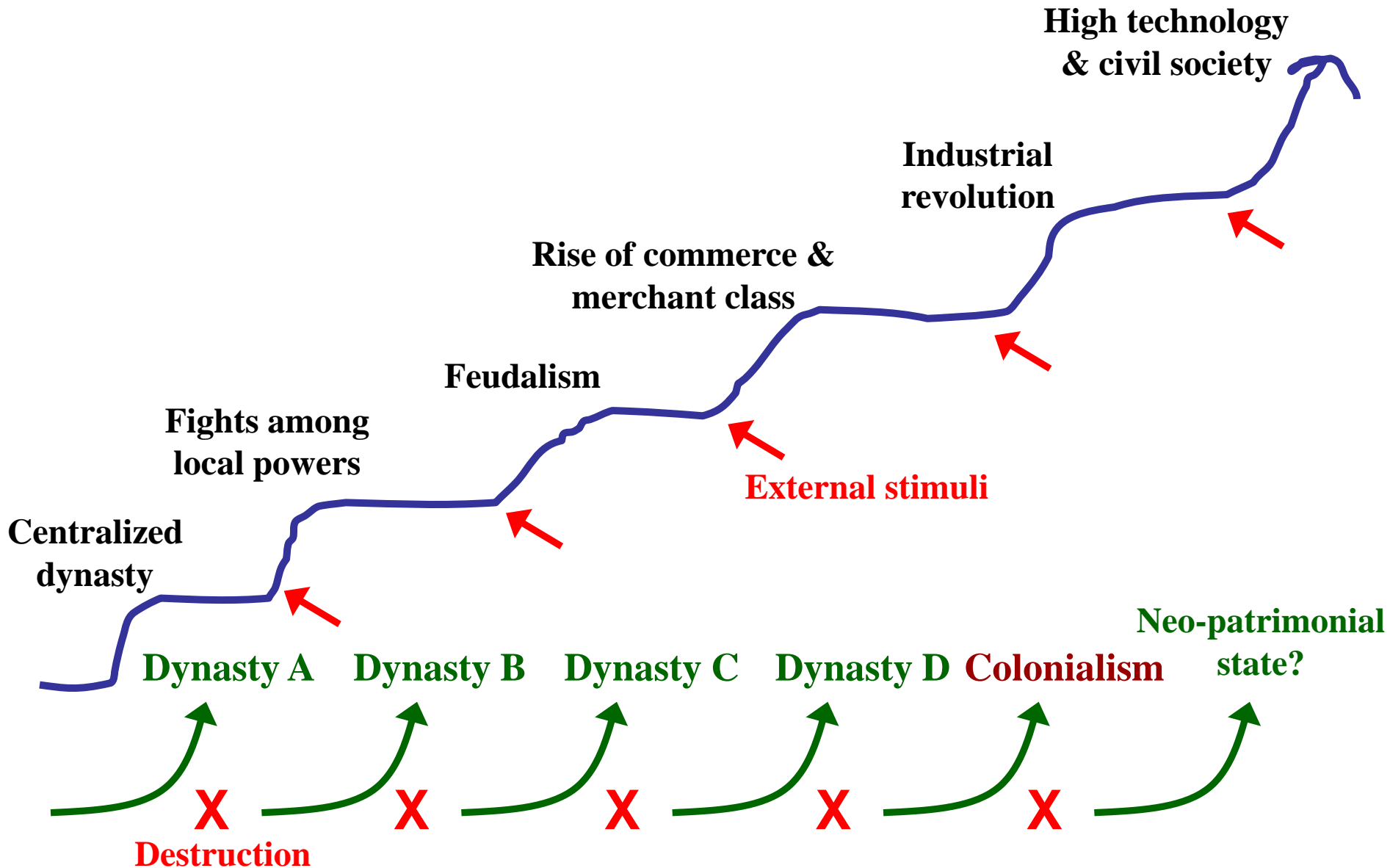


Umesao Tadao  
1920-2010

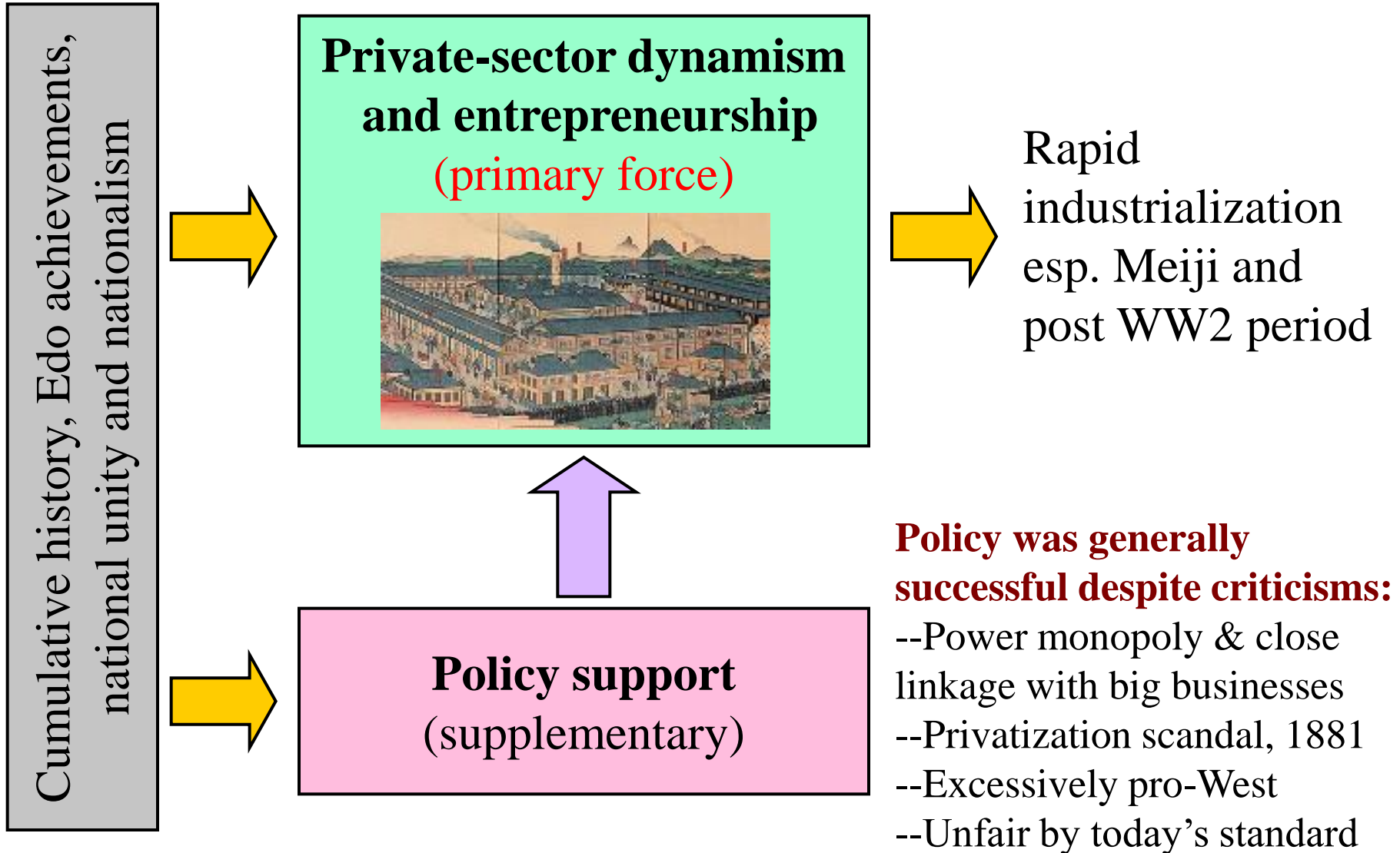
## Eurasian Continent



# History: Evolution vs. Repetition



# Japan's economic growth was driven mainly by private dynamism while policy was also helpful



# Introducing Proper Mindset & Method for Industrialization

## Differences: fast-rising countries vs. stagnant ones

- Private dynamism (individuals and enterprises)
- National leader (wisdom, decisiveness, action-orientation)
- Policy method (procedure, organization, documentation)
- Policy content

## Policy learning

- Study international best (& worst) policy practices—analyze commonalities, national differences, implementation details, pitfalls, capability matching... Acquire general capability to produce policies most suitable for each local context.
- **Avoid:** copy & paste others' policies; no learning “because our country is unique”; the same advice in all countries; recommend too many actions without considering feasibility.



# Meiji Period (1868-1912)



- Forced opening of ports by West (1854-); free trade (1859-)
- Rapid transformation from agro-based feudalism to Westernization and Industrialization
- Industrial revolution (textile) attained in 1890s, overtaking British cotton industry by early 20th century
- Strong government with clear goals
  - Introducing Western style constitution & parliamentary politics
  - Industrialization
  - Building strong military forces

# Pre-conditions for Industrial Take-off (17th-mid 19th century)

- Political unity and stability
- Agricultural development and commercialization
- Development of transportation and nationally unified markets
- Rise of commerce, finance and wealthy merchant class
- Rise of pre-modern manufacturing
- Industrial promotion by local governments
- High level of education

City girls



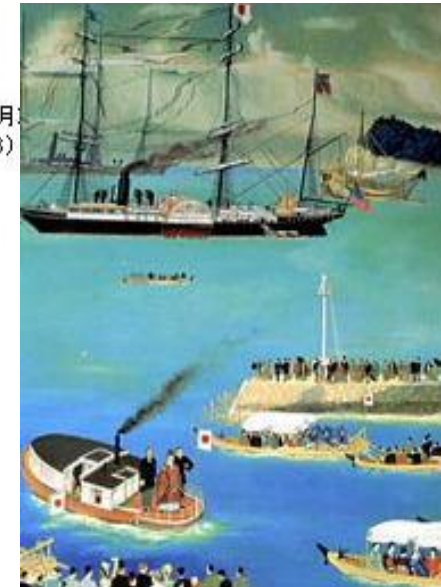
Daimyo in his castle



Samurai police and merchants



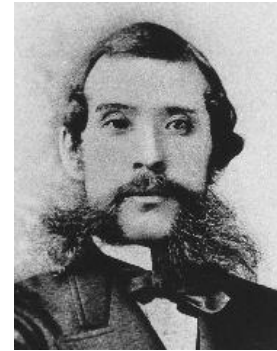




## Iwakura Mission (Dec.1871-Sep.1873)

- Organized quickly after abolishing feudal political system
- Half the cabinet - Iwakura (leader), Okubo, Ito, Kido, Yamaguchi, and other high officials (46); attendants (12), students (49); total 107 members
- Purpose 1: Renegotiate unequal commercial treaties (failed)
  - Purpose 2: Inspect Western systems and technology
- Valuable insights gained for policy making, both politically (Western political system) and economically (industrial technology and factories, esp. British)

# Toshimichi Okubo (1830-1878)



- Minister of Home Affairs; top-down promoter of industrialization and technology import
- Policy measures:
  - Supporting *zaibatsu* (business conglomerates, esp. Mitsubishi) for industrial promotion and import substitution
  - Establishment of SOEs and research institutes
  - Trade & industry exhibitions (for Japanese products)
  - Set up new ministries, police and local governments

“The strength of a country depends on the prosperity of its people which, in turn, is based on the level of output. To increase output, industrialization is essential. However, no country has ever initiated the process of industrialization without official guidance and promotion.” (Okubo’s back-to-office report, 1874)

# Rich Merchants in Edo Period (*Gosho*)

## Mitsui Family

- 17c From Matsuzaka
- Kimono trade & money exchange in Edo, Kyoto, Osaka – huge success

### <Transition to Meiji>

#### Manager: Minomura Rizaemon

- Cope with bakufu policy to protect Mitsui business
- Support and work with new government
- Internal reform: from gosho to zaibatsu
- 1876 Establish Mitsui Bank & Mitsui Trading Company



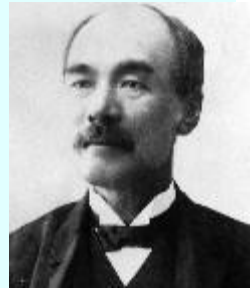
## Sumitomo Family

- 16c Adopt Western copper refining, copper trade (Kyoto)
- 17c Move to Osaka
- Besshi Copper Mine (under Bakufu's commission)

### <Transition to Meiji>

#### Manager: Hirose Saihei

- Avoiding gov't confiscation
- Introducing Western mining technology to renovate Besshi
- Business diversification



## Konoike

- Sake making, trading, loans to daimyo
- No serious internal reform in Meiji
- Failed to form zaibatsu (Sanwa Bank)



# Yataro Iwasaki (1835-85)



三菱



- *Seisho* (politically well-connected big business), founder of Mitsubishi Zaibatsu
- Shipping company--grew fast with government support (receiving gov't ships, contract for military transport)
- Established Nippon Yusen (NYK Line), fierce battle with Kyodo Unyu (anti-Mitsubishi company), 1883-85
- Expanded to many sectors: trade, banking, shipbuilding, coal, mining (later, more)

Mechanical factory in Nagasaki, ca 1885



Bakufu's Steel Mill in Nagasaki, transferred to Mitsubishi in 1884





## ← Eiichi Shibusawa (1840-1931)

From Saitama

## Tomoatsu Godai (1836-1885) →

From Satsuma



**Super business promoters -- but they did not form zaibatsu**

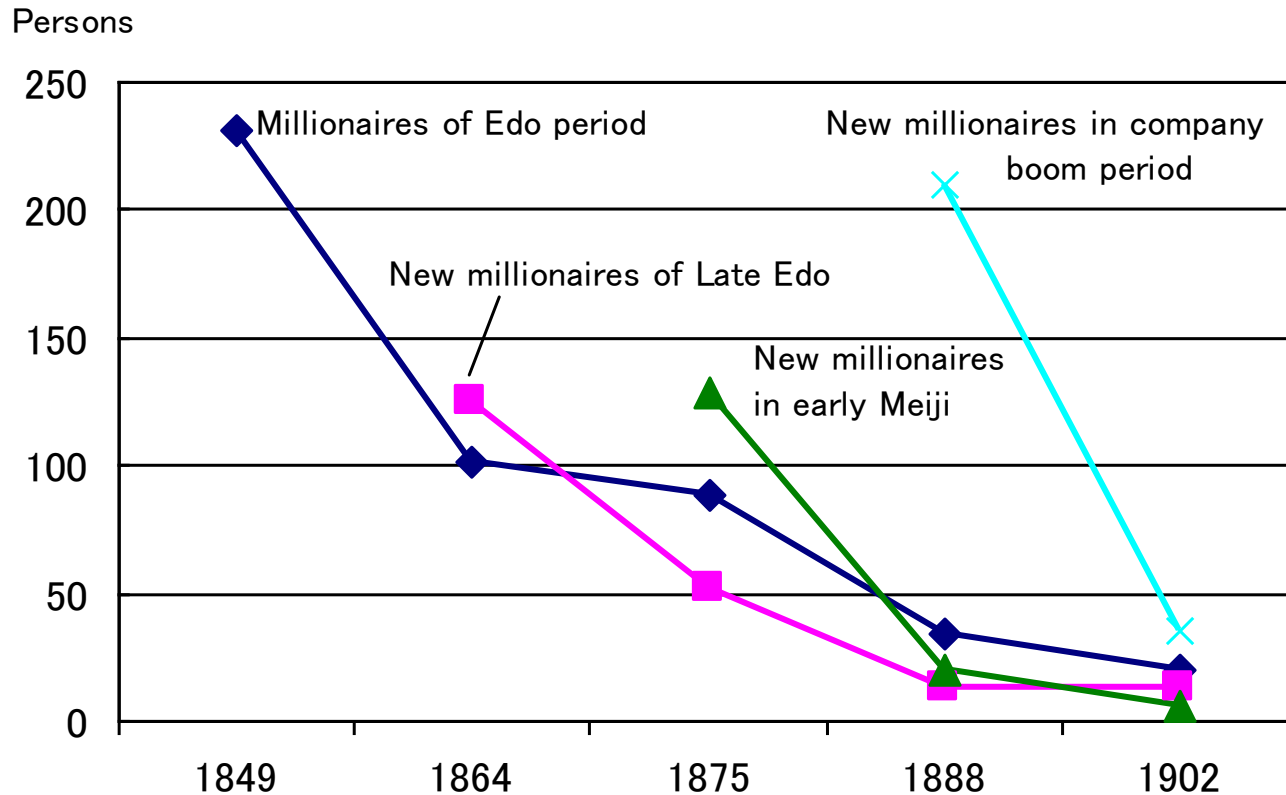
- Initially, anti-bakufu fighter
- Next, assistant to last shogun
- Works vigorously for MOF (invited by Meiji Government)
- President of First “National” Bank”
- Company builder and business coordinator for many years
- Social contributions

- Studies and builds human network in Nagasaki
- Visits UK; realizes need to industrialize, writes report
- In Osaka, helps to create copper co., railroad, shipping co., rice & stock exchanges, cham. of commerce, university, test centers, trading center, etc
- SOE privatization scandal

# Rise and Fall of Merchants and Enterprises

**Q:** Who were the main drivers of Meiji industrialization?

**A:** All types of entrepreneurs including Edo goشو, Yokohama merchants, Meiji zaibatsu, and company boom millionaires.

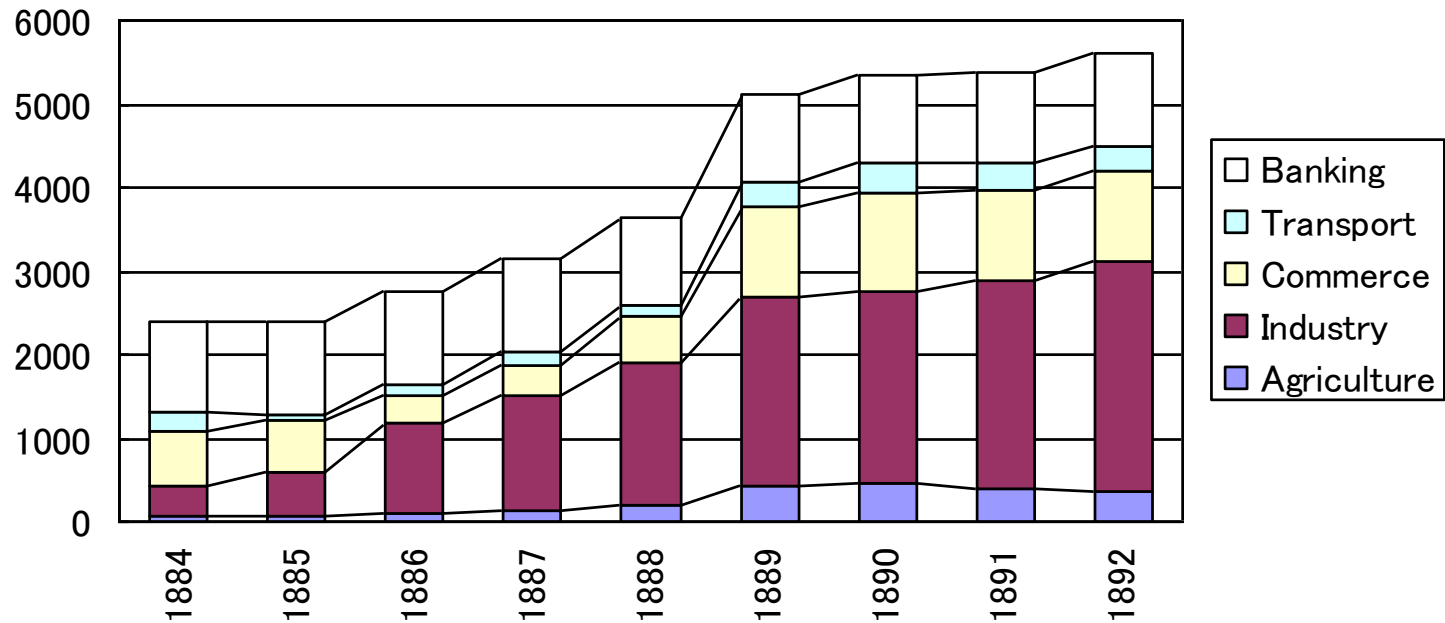


Source: Computed from Miyamoto (1999), p.53. Each line shows how many of the new millionaires emerging each period survived in later periods.

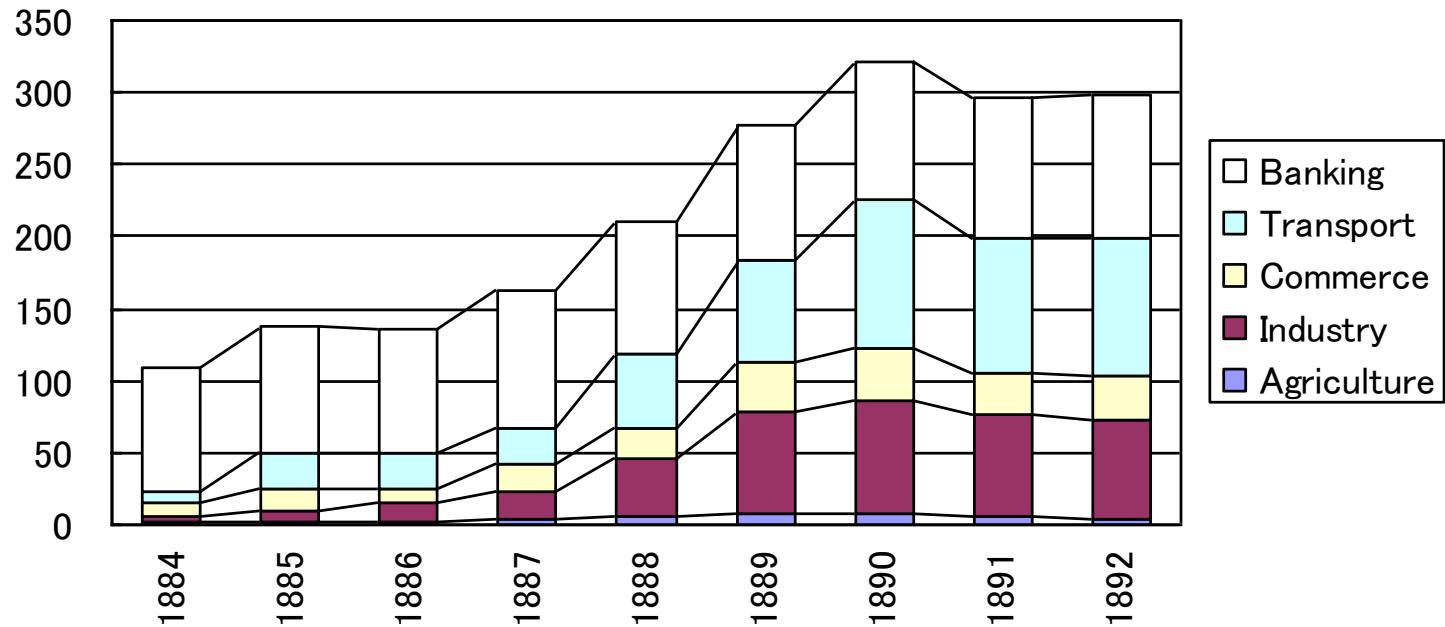
- ▶ Survival game was severe: many entries, many exits
- ▶ Japan's industrial revolution: from 1880s to 1900s
- ▶ Japan-China War, Japan-Russia War also accelerated industrialization

# First Company Boom

Number of joint stock companies



Legal capital (million yen)

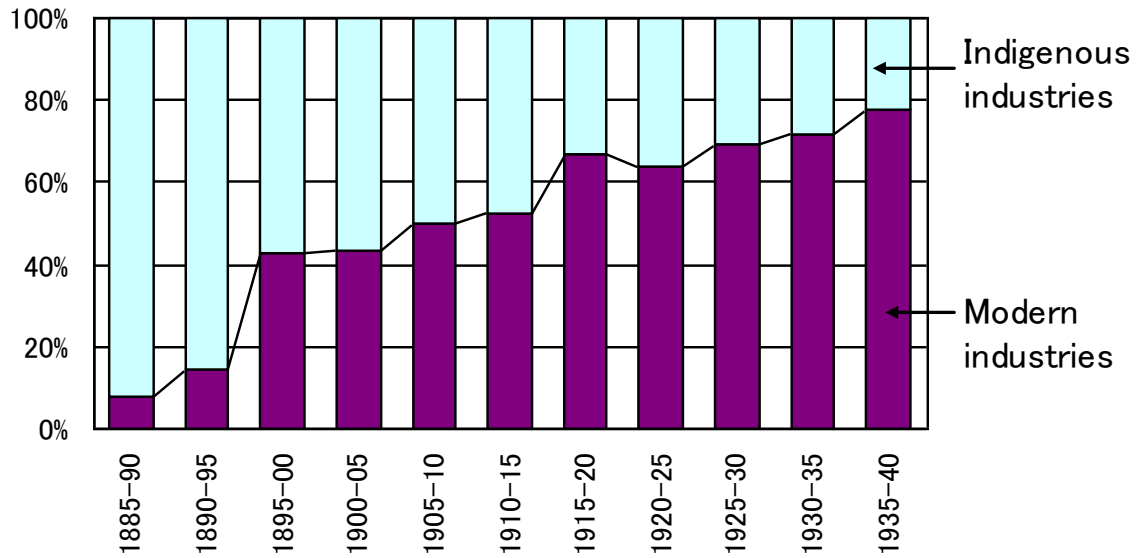


# Parallel development or “hybrid technology”

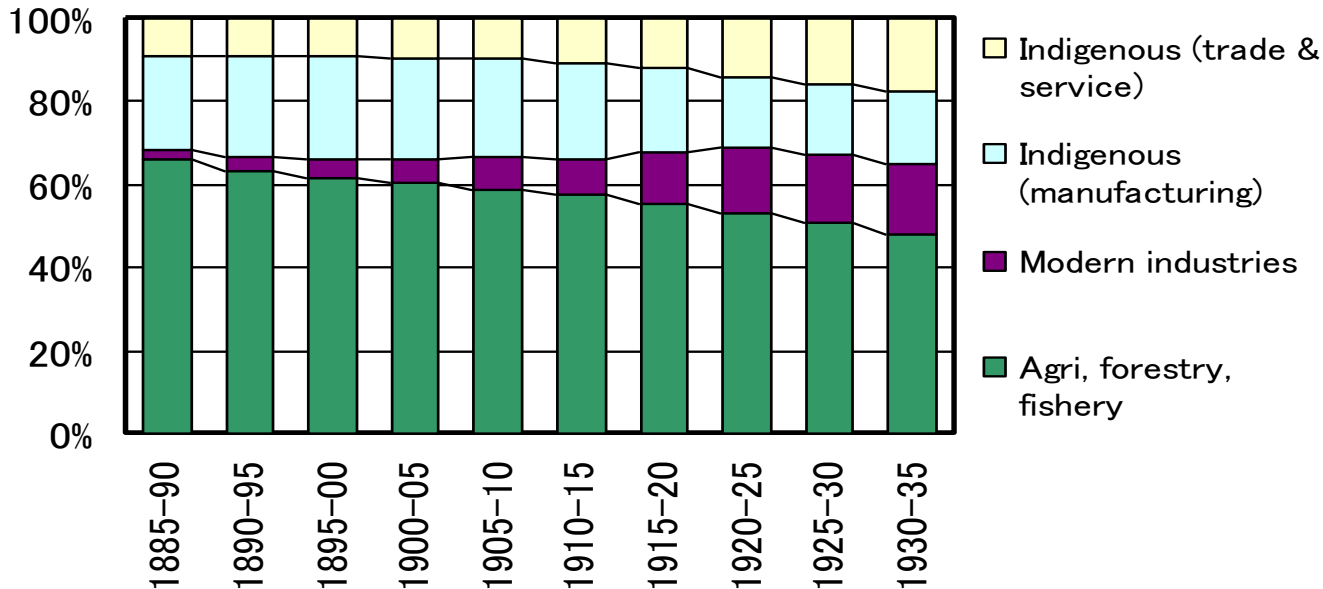
		Factory size	
		Small	Large
Technology	Indigenous	I	I*
	Modern	M*	M

\* indicates hybrid status

### Manufacturing: Share of Output



### Employment Structure of Prewar Japan



PP.65-67



# Examples of Subsidies & Support for Targeted Industries

- **Navigation Promotion Law (1896)** – subsidizing maritime transport operators if they:
  - Operate international routes
  - Use large ships over 1,000 tons
  - Use fast domestic ships

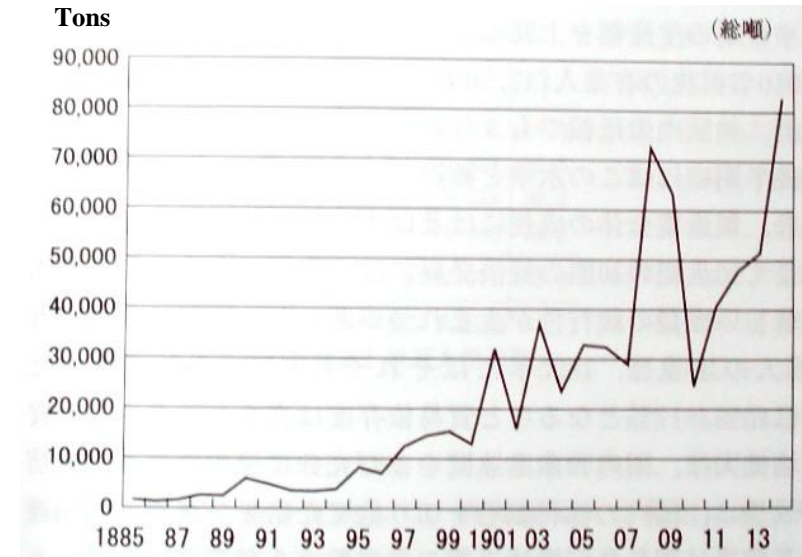
These targets were raised in steps offering more incentives
- **Shipbuilding Promotion Law (1896)** – subsidizing building of steel ships over 700 tons (later 1000 tons)
- **Domestic production of railroad locomotives** – The Ministry of RR provided blueprints, engineers, technical assistance and market to designated private companies.

## Financial Structure of Nippon Yusen

Million yen

	Revenue	Subsidy	Cost	Profit
1886-90	21.8	4.4	21.3	4.9
1891-95	33.0	4.5	28.3	9.2
1896-00	59.6	14.9	63.1	11.4
1901-05	94.5	18.9	92.6	20.8
1906-10	108.3	26.0	118.9	15.4
1911-15	145.5	24.0	141.7	27.8

## Ship Production



## Subsidies Received by Shipbuilders

Thousands of yen

	No. of ships built	Subsidies received for				
		Total	Tonnage	Ship	Horsepower	Engine
Mitsubishi	43	6055.5	207.4	5146.4	181.8	909.0
Kawasaki	34	2379.0	96.7	1912.0	93.4	467.0
Osaka	30	618.7	30.5	478.3	24.1	140.4
Ishikawajima	2	53.0	2.5	43.0	2.0	10.0
Ono	1	12.2	0.8	9.5	0.5	2.7
Uraga	2	47.8	2.7	47.8	0.0	0.0
<b>TOTAL</b>	<b>113</b>	<b>9166.2</b>	<b>340.6</b>	<b>7637.0</b>	<b>301.8</b>	<b>1529.1</b>

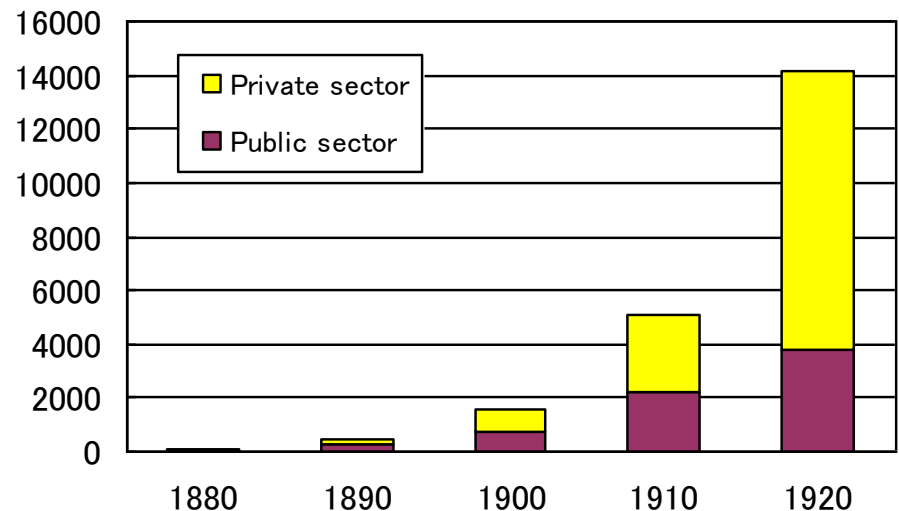
# Technology Transfer (see Uchida 1990)

1. Foreign advisors (public and private sector) – very expensive
2. Engineering education (studying abroad, Institute of Technology; technical high schools)
3. Copy production, reverse engineering, technical cooperation agreements (esp. automobiles, electrical machinery); *sogo shosha* (trading companies) often intermediated such cooperation

## Private-sector experts, 1910

Mining	513 (18.0%)
Textile	300 (10.6%)
Shipbuilding	250 (8.8%)
Power & gas	231 (8.1%)
Trading	186 (6.5%)
Railroad	149 (5.2%)
Food	149 (5.2%)
<b>TOTAL</b>	<b>2,843 (100%)</b>

Technical Experts  
(Graduates of Technical Univs. & High Schools)



# Studying Abroad (Early Engineers)

- First students: bakufu sent 7 students to Netherlands in 1862 (naval training)
- By 1880s, 80 Japanese studied engineering abroad (shipbuilding, mechanics, civil engineering, mining & metallurgy, military, chemistry)
- Destination: UK (28), US (20), France (14), Germany (9), Netherlands (8)
- They received top-class education and could easily replace foreigners after coming back
- They mostly worked in government (no modern private industries existed at first)—Ministry of Interior, MoF, Army, Navy, Ministry of Industry

# Kobu Daigakko 工部大学校

## (Institute of Technology)



- 1871 *Koburyo* of Ministry of Industry; 1877 renamed to *Kobu Daigakko*; 1886 merged with Tokyo Imperial University (under Ministry of Education)
- Theory and practice--preparatory course (2 years), specialized studies (2 years), internship (2 years)
- First Principal: Henry Dyer (UK)
- 8 courses: civil engineering, mechanical engineering, shipbuilding, telecommunication, chemistry, architecture, metallurgy, mining (classes in English)
- Educating top-class engineers (import substitution)
- Additionally technical high schools were established to produce middle-level engineers on factory floor



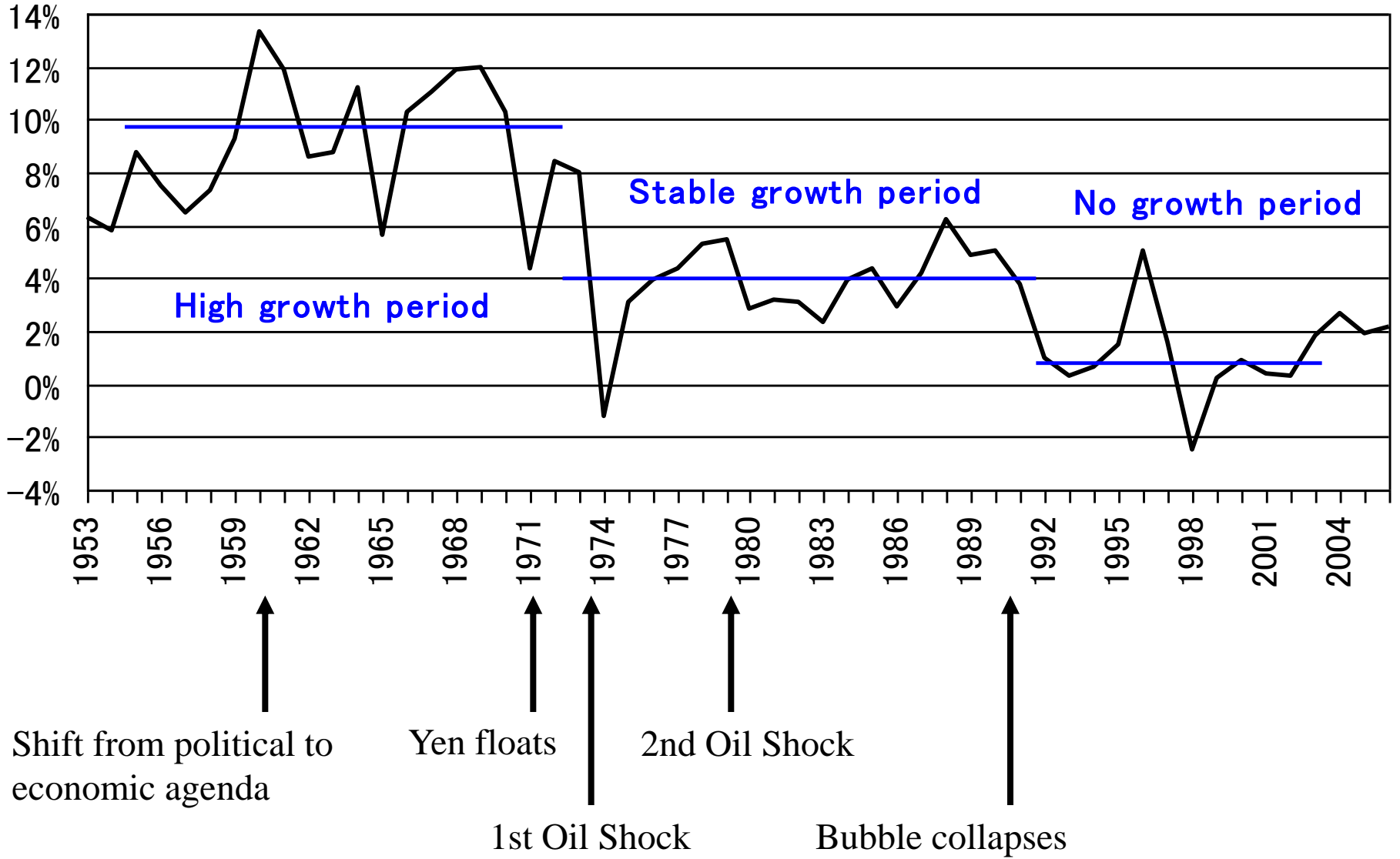


# Post WW2 High Growth (late 1950s-60s)



- After war defeat in 1945, planning method was used to jump start the economy (production of coal & steel); inflation was stopped and prices & trade were liberalized around 1950.
- High growth was unleashed by strong private dynamism, supported by investment in new technology, kaizen, and gradual trade liberalization
- The Ministry of International Trade and Industry (MITI) was a super-ministry for industrial catch-up, working closely with private firms and business associations.

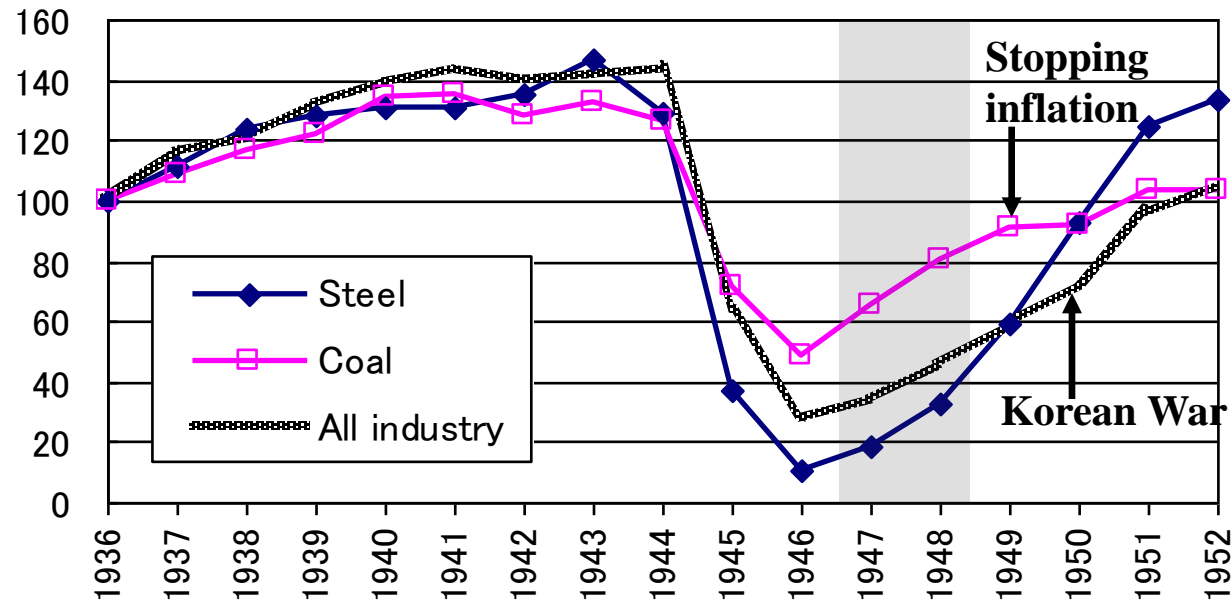
# Post WW2 Real Growth



# Priority Production System (1947-48)

Recover real economy first, then adopt austerity to stop inflation

(1936 = 100)



**Industrial  
Production  
Index**

Source: *Historical Statistics of Japan*, vol.2, 1988.

## Basic Problems of Japan's Economic Reconstruction (MoFA Report, 1946)

- **Long-term goals** must be set for Japan's recovery and global industrial positioning.
- **Concrete real-sector strategies** to attain these goals, sector by sector.

# Rural Life Quality Improvement Movement

M. Mizuno and H. Sato, eds, *Development in Rural Society: Rethinking Rural Development*, IDE-JETRO, 2008, in Japanese.

- In 1948, GHQ (American Occupying Forces) ordered the Ministry of Agriculture to initiate nationwide “Life Improvement & Dissemination Movement.”
- Many local governments (Yamaguchi, Kagoshima, etc) also launched similar programs with enthusiasm.
- Official directives + grass-root village activities organized by life improvement dissemination staff (=village housewives).
- Daily life improvement: cooking, nutrition, meals, clothing, bedding, cleaning, washing, child raising, public morals, weddings/funerals, superstition, feudal habits, etc.
- Staff training in Tokyo and major cities; universities and research institutions providing information and techniques.
- Similarly, “New Life Improvement”, “Life without Mosquitoes and Flies Movement,” etc. up to the 1950s and 1960s.

# Monzukuri (Manufacturing) Spirit

- *Mono* means “thing” and *zukuri* (*tsukuri*) means “making” in indigenous Japanese language.
- It describes sincere attitude toward production with pride, skill and dedication. It is a *way* of pursuing innovation and perfection, often disregarding profit or balance sheet.
- Many of Japan’s excellent manufacturing firms were founded by engineers full of monozukuri spirit.



Sakichi Toyota  
1867-1930



Konosuke Matsushita  
1894-1989



Soichiro Honda  
1906-1991



Akio Morita (Sony’s  
co-founder)  
1921-1999



# Quality and Productivity (Kaizen) Movement at Factories were Private-sector Driven

- Private sector, not government, led quality and productivity improvement; private absorptive capacity was very strong.
- NPOs were created by the initiative of top executives of private firms with nationwide networks for dissemination
- Cooperation between managers & workers within factories
- Collaboration among government-industry-academia
- Productivity techniques imported from the US (mostly top-down, statistical) were revised to fit Japanese production environment (bottom-up, mindset change, continuous effort by teamwork)



# Core NPOs for Quality and Productivity Improvement

## Japan Productivity Center (JPC)

- Established in 1955 as a public-interest foundation; received US support during 1955-61
- Tripartite collaboration: govt., business, and labor unions
- Main role: productivity improvement (leading Productivity Movement) (→ supporting Singapore's Productivity Movement under JICA project)

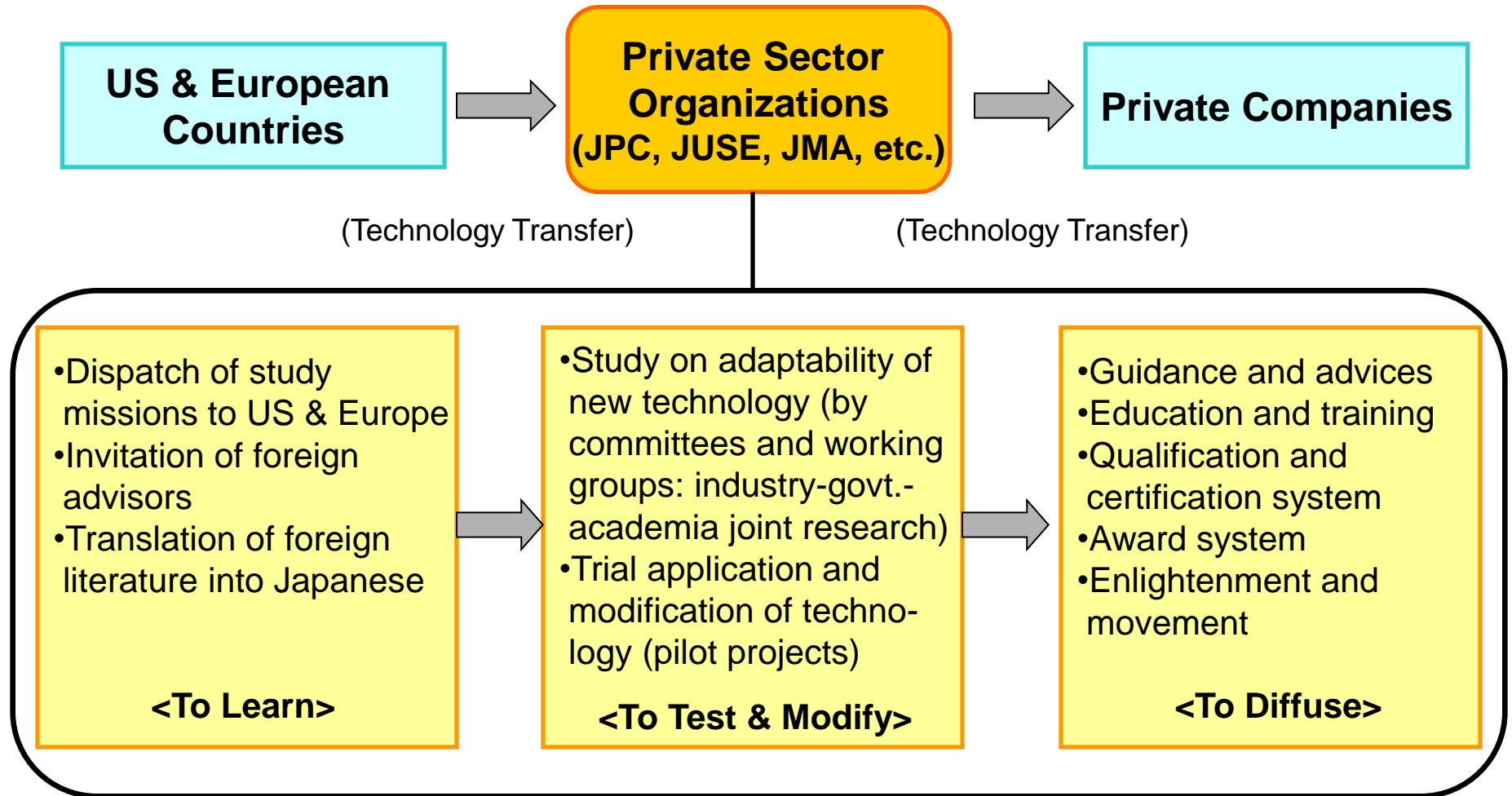
## Union of Japanese Scientists and Engineers (JUSE)

- Established in 1946, as an incorporated foundation
- Main role: quality improvement ("Deming Prize", QC Circles) (→ supporting Burkina Faso (QCC) under WB/Japan PHRD fund project)

## Japan Management Association (JMA)

- Established in 1942, as an incorporated association
- Main role: *noritsu* (efficiency) improvement, management innovation

# Role of Private Sector Organizations in Introduction, Development and Diffusion of Foreign Technologies



Source: Adapted from Tsuyoshi Kikuchi "The Roles of Private Organizations in the Introduction, Development and Diffusion of Production Management Technology in Japan" (original paper published in the Bulletin of the Graduate School of International Cooperation Studies No. 4, 2011, Takushoku University).

# Study Missions Sent Abroad by JPC (1955-60)

- A large number of study missions were sent abroad and their findings were disseminated widely.
- Different types of missions were organized for top management, industry groups, special professions, labor unions, SMEs, etc.

Fiscal year	Missions	Participants	Of which SMEs		Mission de-briefing seminars	Participants of de-briefing seminars
			Missions	Participants		
1955	15	174	5	58	33	10,020
1956	27	307	0	0	130	33,960
1957	43	430	4	46	180	27,420
1958	62	652	12	141	98	12,177
1959	75	749	13	137	74	7,894
1960	84	821	15	154	11	1,740
Total	306	3,133	49	536	526	93,211

Source: *History of Trade and Industry*, Vol. 6, Edited by the Ministry of Trade and Industry (original data come from various reports of the Japan Productivity Center)

# MITI and Industrial Policy <sup>PP.170-74</sup>

- Foreign scholars depicted MITI as the command post of Japanese industries—Johnson (1982), Okimoto (1991).
- Japanese officials and researchers often deny this view; MITI was only supplementing the market mechanism.
- Empirical studies on MITI policies are inconclusive.
- Some issues for today's developing countries:
  - Government's lack of knowledge and political capture (the doctrine of *neoclassical political economy*)
  - Excess competition* under increasing returns, copy production
  - Impossibility of *infant industry promotion* under accelerated integration, WTO and FTAs/EPAs
  - State capability building and the scope of industrial policy
  - New search for the sources of growth (esp. Africa) vs. traditional IMF/WB policies, governance emphasis





# Industrial Policies in Japan

(From Prof. Akira Suehiro's 2006 presentation)

- (1) The fiscal investment and loan program (FILP, p.165fn) promoted trade and industry until early 1960s
  - (2) Loans by Japan Development Bank and Exim Bank were relatively small, but had two important effects
    - Catalyst for larger commercial bank loans
    - Information sharing between business and government
  - (3) Cooperative policy formulation and implementation
  - (4) The “return match game” and learning effect—firms could apply many times for JDB and SME loans
- ➔ Japan's industrial policy contributed to development of the market mechanism rather than distorting the market.

# Fiscal Investment & Loan Program (FILP)

Mobilization of people's small savings and funds to invest or lend for development purposes, using official channels (but not budget account)

## Sources of fund (%)

- Postal savings
- Pension & insurance contributions

	1955	1965	1975	1985	1990
Special Account	14	4	1	0	0
<b>Trust Fund Bureau*</b>	<b>52</b>	<b>66</b>	<b>84</b>	<b>78</b>	<b>78</b>
<b>Postal Deposit</b>	<b>34</b>	<b>23</b>	<b>42</b>	<b>24</b>	<b>20</b>
<b>Pension Funds</b>	<b>10</b>	<b>23</b>	<b>22</b>	<b>15</b>	<b>15</b>
Postal Life Insurance	16	7	11	10	17
Government Bonds, Borrowings	15	24	4	12	6
Total	100	100	100	100	100

## Uses of fund (%)

- Housing
- SMEs
- Infrastructure
- Industrial & trade promotion

Purposes	1955	1965	1975	1985	1990
<b>Infrastructure for people's life*</b>	<b>45</b>	<b>53</b>	<b>64</b>	<b>70</b>	<b>71</b>
Housing	14	14	21	25	30
Small & Medium firms	8	13	16	18	16
Infrastructure for Industries	32	32	25	22	22
Transport	12	14	13	8	8
Regional	9	7	3	2	3
<b>Promotion of Industries, Trade</b>	<b>23</b>	<b>15</b>	<b>11</b>	<b>8</b>	<b>9</b>
<b>for Industries</b>	<b>16</b>	<b>8</b>	<b>3</b>	<b>3</b>	<b>3</b>
<b>for Trade</b>	<b>7</b>	<b>8</b>	<b>8</b>	<b>5</b>	<b>6</b>
Total	100	100	100	100	100

Official finance through Japan Dev. Bank & Exim Bank was only a small part of Japan's investment funds, but it had catalytic effects on commercial bank loans for industry.

Table 3 Distribution of Outstanding Loans by Type of Financial Institutions 1955-1990 (%)

	1955	1965	1975	1985	1990
Private Financial Institutions	87	90	89	86	88
<b>Commercial Banks</b>	<b>62</b>	<b>54</b>	<b>48</b>	<b>50</b>	<b>57</b>
①City Banks	36	30	27	26	27
②Local Banks	17	15	11	15	15
Finance for SMEs	9	15	17	16	9
<b>Fiscal Finance</b>	<b>13</b>	<b>10</b>	<b>11</b>	<b>14</b>	<b>12</b>
JDB*	8	3	2	2	1
EIBJ*	1	1	2	1	1
Total	100	100	100	100	100

(Notes): JDB: Japan Development Bank

EIBJ: Export-Import Bank of Japan

(Source) Japan Development Bank, *Zaisei Toyushi-Nihon no Keiken*, 1993.

# Industrial Policy Formulation & Implementation

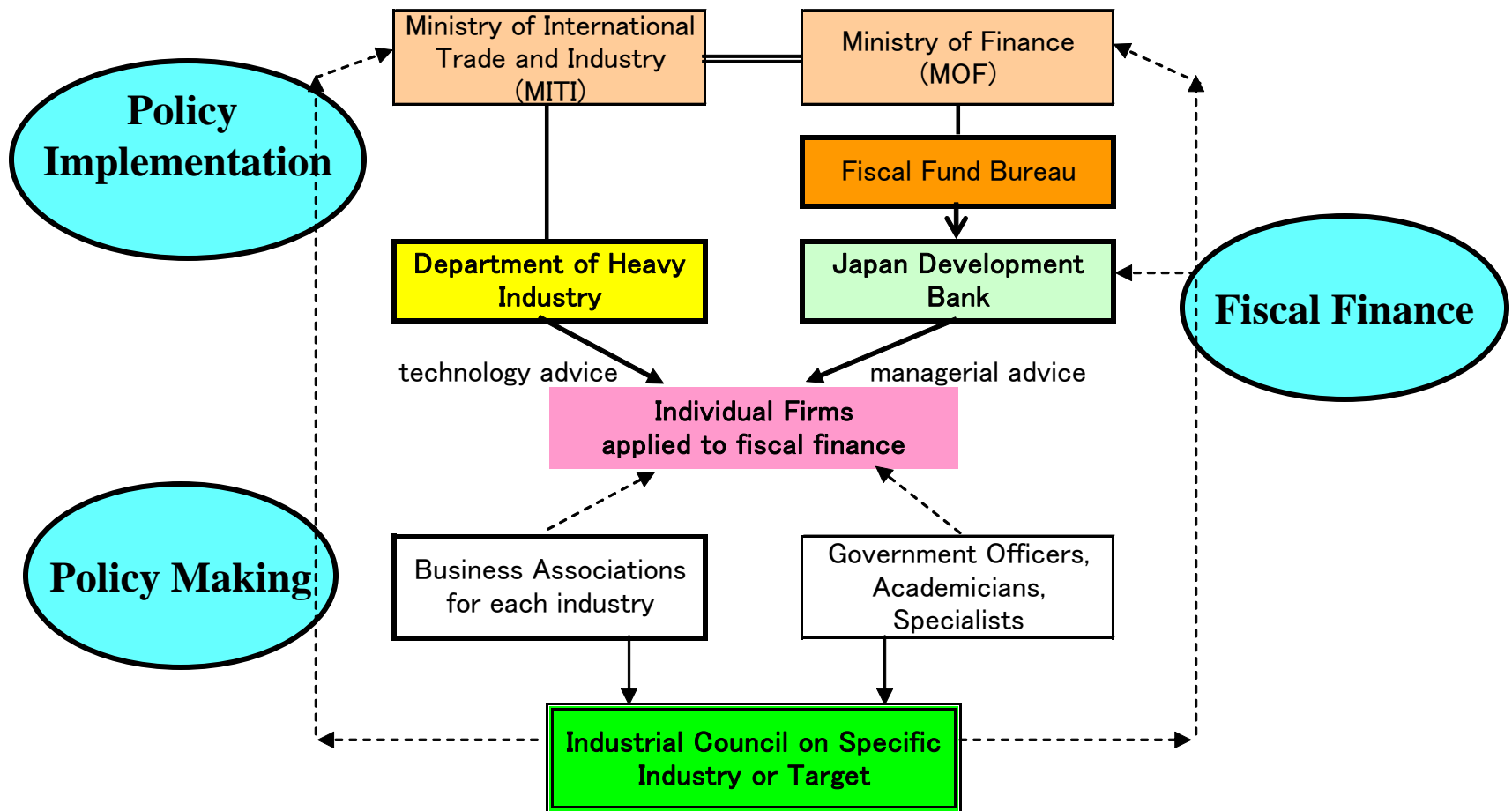
## MITI's policy planning

- **Deliberation councils** were regularly used for making policies for targeted industries and strategic issues.
- **Bottom-up** policy making, from study group → joint group within ministry → deliberation council
- Effective **information sharing** among ministries (MITI, MOF, etc.), business associations, Liberal Democratic Party (ruling party), experts, and related organizations.
- Policy objective: modernization of specific industries and improvement of international competitiveness.

## Enterprise support: division of labor

- Japan Development Bank for loans, management advice, accounting, cost control
- MITI's Machine Industry Bureau, for advice on technology

# Figure 4 Mechanism of FLI and the Role of MITI and JDB



Source: Drafted by Akira Suehiro



# Organizational Structure

**MITI**

- Minister
- Politically appointed VM
- Administrative VM
- Deputy VMs
- Special assistants

**Main Bureaus**

- Minister's Secretariat (incl. Research & Statistics)
- Int'l Trade Policy Bureau
- Int'l Trade Admin. Bureau
- Industrial Policy Bureau
- Industrial Location & Environment Protection Bureau
- Basic Industries Bureau
- Machinery & Information Industries Bureau
- Consumer Goods Industries Bureau

**Attached Organizations and External Bureaus**

- Agency of National Resources & Energy
- Patent Office
- SME Enterprise Agency
- Agency of Industrial Science & Technology
- Trade & Investment Training
- Other

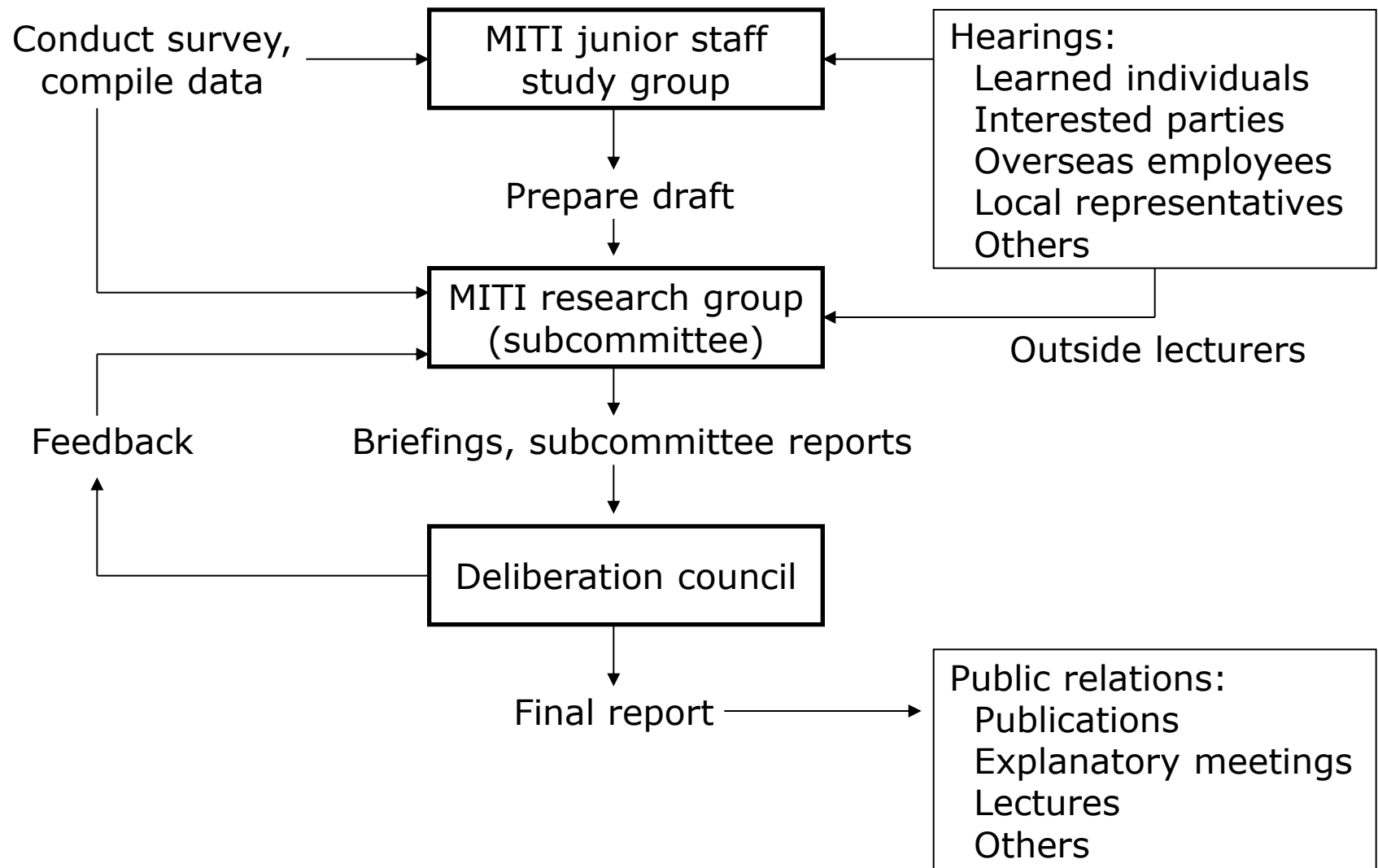
**Deliberation Councils**

- Industrial Structure
- Export Insurance
- Textile
- Petroleum
- Electrical Works
- .....

- Int'l Trade Transaction
- Industrial Location & Water
- Product Safety & Household Goods Quality Indication
- Aircraft & Machinery Industry
- Traditional Crafts Industry
- .....

Source: adapted from Okimoto (1989), p.117.

# MITI: Junior Staff's Role and Deliberation Council



Source: Ono (1992).

# Concluding Remarks

- Japan's industrialization was made possible by strong private dynamism (primary) supported by reasonable policy (secondary).
- Japan's cumulative history with frequent opportunities to import foreign factors, without being destroyed, was critical. Through this process, both private and public sectors were made capable and resilient.
- Countries without private dynamism or good policy must create them. For this, both spiritual revolution and technical learning are required.
- National leaders, public officials and business leaders must bear great responsibility for the nation in coping with developmental challenges and globalization pressure.

# Introducing Proper Mindset & Method for Industrialization (Recap)

## Differences: fast-rising countries vs. stagnant ones

- Private dynamism (individuals and enterprises)
- National leader (wisdom, decisiveness, action-orientation)
- Policy method (procedure, organization, documentation)
- Policy content

## Policy learning

- Study international best (& worst) policy practices—analyze commonalities, national differences, implementation details, pitfalls, capability matching... Acquire general capability to produce policies most suitable for each local context.
- **Avoid:** copy & paste others' policies; no learning “because our country is unique”; the same advice in all countries; recommend too many actions without considering feasibility.